An Bord Pleanála

Inspector's Report

ABP-317265-23

Development	Construction of Dyrick Hill Windfarm comprising 12 no. wind turbines and related works.
Location	Townlands of Ballymacmague North, Ballymacmague South, Ballynaguilkee Lower, Ballynaguilkee Upper, Broemountain, Carrigaun (Mansfield) and others, Co. Waterford.
Planning Authority	Waterford City and County Council
Applicant(s)	Dyrick Hill Wind Farm Limited
Type of Application	Strategic Infrastructure (Section 37E)
Prescribed Bodies	1. Tipperary County Council 2. An Taisce 3. Coillte 4. Department of Housing, Local Government and Heritage 5. Department of Defence 6. Failte Ireland

Third Party Observer(s)	1. Ann Morris 2. Anne Lebaupain McCarthy 3. Conor McGuinness 4. Elizabeth Alderton 5. Esther Barron and Joe Prendergast 6. FuturEnergy 7. Gerard and Ann Cummins 8. Helen Fraher 9. Irish Peatland Conservation Council 10. John Cullinana 11. Julia Gorodecky 12. Knochmealdown Active 13. Knockmealdown Protection Group 14. Mairead Prendergast 15. Mattie McGrath 16. Ray Ryan BMA Planning 17. Residents of Marlpit Farm 18. Tim van der Knaap 19. Trevor Power 20. Wild Ireland Defence CLG (Peter Sweetman)
Date of Site Inspection	10.03.24
Inspector	Una O'Neill

Contents

1.0 Introduction

1.1. This is an application made by Dyrick Hill 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 04.04.23, 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 application site is located within an area of agricultural farmland, forestry, and upland heath in Co. Waterford, at the border with County Tipperary. The site is 12.9km northwest of Dungarvan, 43 km west of Waterford City, and 55km northeast of Cork City. The nearest settlement of size is the rural village of Tooraneena, which is situated east of the River Finisk and just under 3km east of the nearest turbine. Other nearby settlements include Ballynaguilkee 0.8km southeast and Curradoon 0.8km east.

2.2. The proposed development site is 463 ha in area, with the wind farm itself extending to 161.88 ha. The site is located at the south-eastern extent of the Knockmealdown mountain range. The western, northern and southern extents of the site are typically more elevated than the central and eastern extents of the site. The site is broadly surrounded by the three main peaks of Knocknasheega (428m) west of the site boundary, Broemountain (430m) in the northern extent of the site, and Dyrick Hill (286m) within the southern central portion of the site. The eastern and central extents of the site are generally relatively flat with elevations typically ranging from between 130m to 190m. The site is generally topographically elevated in the north / north-west and generally topographically low lying in the south and east with elevations ranging from 130m to 190m, with the exception of Dyrick Hill (286m) near the southern extent of the site. The steepest incline across the site occurs at the northern extent of the site near the proposed T8 position.

2.3. The majority of the lands are in third party ownership, with a portion of the lands identified as being in commonage (shared land). The commonage lands comprise

much of the open heath habitat land area to the west of the site and the applicant states they have entered into contracts with the participants in the commonage land area concerned.

2.4. Cattle are the dominant livestock on the grassland habitats dominating the land cover within the wind farm site to the east, whilst sheep are the dominant species occurring to the west at higher elevations on the Broemountain Commonage Area. Areas mapped as dry heath habitat within the wind farm site are representative of the Annex 1 habitat European Dry Heath and have been mapped as part of the Favourable Reference Area for this habitat in Ireland (NPWS, 2019).

3.0 **Proposed Development**

3.1. The Project will consist of the following main components:

- Erection of 12 no. 6.0-7.2 MW wind turbines (Note* this is the current output available for turbines of this size. It is possible that with improvements in technology, the output may increase at the time of construction) with an overall ground tip height of 185m. The candidate wind turbines will have a 162m rotor diameter and a hub height of 104m.
- Construction of Crane Hardstand areas and Turbine Foundations.
- Construction of new internal site Access Tracks and upgrade of existing site roads, to include passing bays and all associated drainage.
- Construction of a new wind farm site entrance with access onto the R671 regional road in the townlands of Lickoran.
- Improvement of existing site entrance with access onto local roads in the townlands of Broemountain.
- Improvements and temporary modifications to existing public road infrastructure to facilitate delivery of abnormal loads and turbine delivery.
- Construction of one Temporary Construction Compound with associated temporary site offices, parking area and security fencing.
- Development of on-site Borrow Pit.
- Installation of one Permanent Meteorological Mast with an overall height of 104m.

- Development of a site drainage network.
- Construction of one permanent 110 kV Substation.
- All associated Wind Farm Internal Cabling connecting the wind turbines to the wind farm substation.
- All works associated with the connection of the wind farm to the national electricity grid, which will be via 110 kV underground cable connection approximately 16km in length to the existing Dungarvan 110 kV Substation.
- Upgrade works on the Turbine Delivery Route from Waterford Port.
- Ancillary forestry felling to facilitate construction and operation of the Development.

3.1.1. The grid connection includes the buried grid connection cable route which is to run approximately 16.8km from the on-site substation at Dyrick Hill to the 110 kV ESB substation at Dungarvan in Co. Waterford, of which, 368m is within the site of the Development, and 16,432m is located along the public road corridor.

3.1.2. A 15-year planning permission is sought and it is stated the windfarm will have a 40-year operational life from the date of commissioning.

3.1.3. The application is accompanied by an Environmental Impact Assessment Report (EIAR) and a Natura Impact Statement (NIS), various technical appendices and letters of consent from landowners.

4.0 Planning History

ABP-312434-22 – The proposed development constitutes Strategic Infrastructure Development as defined by section 2(1) of the Planning and Development Act 2000, as amended by section 6 of the Planning and Development (Strategic Infrastructure) Act 2006, and a planning application should be made directly to the Board under Section 37E.

Current Appeal on portion of lands:

ABP-316060-23 - Change of use of building from a dwelling house, to office accommodation together with all ancillary site works and services.

- Permission Refused by WCC on following grounds: No justification for the proposed office in this remote rural area; would undermine the function of serviced settlements and contrary to the policies and objectives of the development plan; fails to demonstrate capacity of septic tank and percolation area; intensification of existing substandard access arrangements would give rise to traffic hazard.

5.0 Policy Context

5.1. European Directives and Policy

- EU Renewable Energy Directive 2009/28/EC
- European 2020 Strategy for Growth
- 2030 Climate and Energy Framework
- Energy Roadmap 2050
- Revised Renewable Energy Directive (RED II) 2018/2001/EU
- European Green Deal (2019)

The **Fit for 55** package (July 21) – This is a set of proposals to revise and update EU legislation and put in place initiatives which are in line with the agreed climate goals. This will include boosting the share of renewable energy by 2030 and will involve a revision of the **Renewable Energy Directive** resulting in an increased target of 40% of all energy being used in the EU to come from renewable sources by 2030 (an increase from the current target of 32% by 2030).

European Green Deal was a key communication of the Commission in December 2019 which set out a new strategy for growth which decoupled economic growth from resource use and aimed to transform the Union into a fair, prosperous, efficient and competitive economy with no net emissions of greenhouse gases in 2050.

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.

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%).

5.2. National Policy

The following is a list of National Policies and Guidelines of relevance, with a summary of the more salient provided.

- Climate Action and Low Carbon Development Act 2015
- Project Ireland 2040: The National Planning Framework
- Project Ireland 2040: National Development Plan 2018-2027
- Climate Action Plan 2023
- Climate Action and Low Carbon Development (Amendment) Art 2021

- Department of Environment Heritage and Local Government Planning Guidelines for Wind Energy (June 2006)
- Draft Revised Wind Energy Guidelines (Published for Consultation on 12th December 2019)
- National Landscape Strategy for Ireland 2015-2025 (DAHG)
- Code of Practice for Wind Energy Development in Ireland Guidelines for Community Engagement issued by the Department of Communications, Climate Action and Environment (December 2016).

Project Ireland 2040 – National Planning Framework (NPF)

- The NPF sets out the future growth and development of the Country for the period up to 2040. National Strategic Outcome (NSO) 8 is for the 'Transition to a Low Carbon and Climate Resilient Society' and includes the following:

    - 'The development of onshore and offshore renewable energy is critically dependent on the development of enabling infrastructure including grid facilities to bring the energy ashore and connect to major sources of energy demand. We also need to ensure more geographically focused renewables investment to minimise the amount of additional grid investment required, for example through co-location of renewables and grid connections'.
    - National Policy Objective 55 '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'.

Climate Action Plan 2023

- Outlines the actions required to 2035 and beyond. It implements the carbon budgets and sectoral emission ceilings and sets a roadmap for halving emissions by 2030 and reaching net zero by no later than 2050.
- A key provision is the further increase in the deployment of renewable energy with the target of increasing the proportion of renewable electricity to 80% by 2030. This will include a target of 9GW from onshore wind energy by 2030.

- With respect to the matter of just transition and carbon storage the Climate Action Plan 2023 builds on Climate Action Plan 2021 which included better management of peatlands as part of the measures to reduce GHG emissions. The latter in turn took up the themes set out in the National Peatlands Strategy, 2015.

Wind Energy Development Guidelines (WEDGs) for Planning Authorities (2006)

These guidelines constitute the official strategy guidance on wind farms under the provision of Section 28 of the Planning and Development Act 2000 (as amended).

The following sections of the Guidelines are considered to be of particular relevance:

- Section 5.6 - noise impacts should be assessed by reference to the nature and character of noise sensitive locations. In terms of noise, a lower fixed rate limit of 45 dB(A) or a maximum increase at 5 dB(A) above background noise at nearby noise sensitive locations is considered to be appropriate to provide protection to wind energy neighbours. However, in very quiet areas the use of a margin of 5dB(A) above the background noise level at nearby noise sensitive properties may unduly restrict wind energy developments which have wider national and global benefits.
- In low noise environments where the background noise is less than 30dB(A) it is recommended that the daytime level of $LA_{90,\ 10min}$ of the Wind Energy Development Noise be limited to an absolute level with the range of 35 to 40 dB(A). Separate noise limits should apply for daytime and for night-time. A fixed limit of 43dB(A) will protect sleep inside properties during the night.
- In general, noise is unlikely to be a significant problem where the distance from the nearest noise sensitive property is more than 500m.
- Section 5.12 - careful site selection, design and planning and good use of relevant software can help to reduce the possibility of shadow flicker in the first instance. Shadow flicker at neighbouring offices and dwellings within 500m should not exceed 30 hours per year or 30 minutes per day. The potential for shadow flicker is very low at distances greater than 10 rotor diameters from a turbine.

- Chapter 6 - aesthetic considerations in siting and design. Regard should be had to profile, numbers, spacing, visual impact and the landscape character. Account should be taken of inter-visibility of sites and the cumulative impact of developments.
- Appendix 4 provides details in relation to best practice for wind farm development on peatlands and flatland areas.

Draft Wind Energy Development Guidelines (DWEDG) 2019

Section 4.9 - sets out general separation distance to ensure the appropriate siting of wind farms.

Section 5.7.4 – Noise. The preferred draft approach proposes noise restriction limits consistent with World Health Organisation Guidelines, proposing a relative rated noise limit of 5dB(A) above existing background noise within the range of 35 to 43dB(A), with 43dB(A) being the maximum noise limit permitted, day or night. The noise limits will apply to outdoor locations at any residential or noise sensitive properties.

Section 5.8.1 – Shadow Flicker. Provision of evidence as part of the planning application that shadow flicker control mechanisms will be in place for the duration of the wind energy development project.

Section 5.10 - Community Investment.

Section 6.4- Visual Impact. Siting of Wind energy projects.

Section 6.18.1 – Set back. The potential for visual disturbance can be considered as dependent on the scale of the proposed turbine and the associated distance. The size of the turbine should be key to setting the appropriate setback. A setback distance for visual amenity purposes of 4 times the tip height should apply between a wind turbine and the nearest point of the curtilage of any residential property in the vicinity of the proposed development, subject to a mandatory minimum setback of 500 metres. An exception may be provided for a lower setback requirement from existing or permitted dwellings or other sensitive properties to new turbines where the owner(s) and occupier(s) of the relevant property or properties are agreeable to

same but the noise requirements of these Guidelines must be capable of being complied with in all cases.

Spatial Planning and National Roads - Guidelines for Planning Authorities 2012

These section 28 guidelines set out the planning policy considerations relating to development affecting national roads. Key policy provisions to be incorporated in development plans include:

- Protect the identified preferred route corridors for future national road schemes.
- Require developers to avoid, remedy or mitigate adverse effects on national roads and provide mechanisms requiring making of reasonable contributions towards costs of any required mitigation.
- Identify any land required for future national road projects and include objectives that retain required lands free from development - section 2.9 which refers specifically to protection of alignments for future national road projects.
- Planning authorities should engage with applicants to ensure negative impacts from existing or planned national roads are mitigated through appropriate design of buildings, landscaping and site layout.

The Planning System and Flood Risk Management, 2009

These Guidelines seeks to avoid inappropriate development in areas at risk of flooding and avoid new developments increasing flood risk elsewhere and they advocate a sequential approach to risk assessment and a justification test.

Ireland's 4th National Biodiversity Action Plan 2023–2030

Scientific assessments of the state of nature in Ireland have found that 85% of our EU-protected habitats are in unfavourable status, with almost half (46%) demonstrating ongoing declines. This is having negative impacts on wildlife. Almost a third of our EU-protected species are in unfavourable status, over half of native

Irish plant species have declined. Over half of our 100 bee species have undergone substantial declines and 30% are threatened with extinction, 21% of breeding and 52% of key wintering bird species were reported to have short term declining trends.

5.3. Regional Policy

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

- 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…
- 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.

5.4. Local Policy

5.4.1. 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. With 97.72MW either operational or permitted but as yet undeveloped 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.

Chapter 9 - Climate Action

Biodiversity Assessment Policy Objectives

Policy Objectives 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.

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

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 AN01 – AN03 pertain to archaeological heritage and seek to protect and enhance, in an appropriate manner, all elements of the archaeological heritage, managing development and preservation of archaeological material.

Policy Objective AN04 sets out the matters for consideration in terms of archaeological impact.

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

Section 13 sets out the strategic planning considerations for renewable energy.

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 straddles the uplands and foothills landscape character types.
- As per Map A8.3, the application site is primarily within an area considered to be ‘Most Sensitive’, with a portion of the site (where two turbines are proposed) within a ‘High Sensitive’ area and an small area of the site to the southeast (where two turbines proposed) is within a ‘Low Sensitivity’ area.

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.

- The following are relevant to the site: SR2 – SR8; SR10; SR11; SR16; SR22.

6.0 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.

7.0 European Site Designations

7.1. The following SACs and SPAs are noted (see also figures 6.6a and 6.6b for mapped locations):

- Blackwater River (Cork/Waterford) SAC

- Comeragh Mountains SAC
- Glendine Wood SAC
- Ardmore Head SAC
- Helvick Head SAC
- Dungarvan Harbour SPA
- Ballymacoda Bay SPA
- Ballycotton Bay SPA
- Cork Harbour SPA
- Saltee Islands SPA

8.0 Planning Authority Submission

8.1. Planning Authority Report – Planning Analysis

The submission of the planning authority is summarised hereunder:

- The PA rejects the findings and conclusions of the EIAR in relation to:
    - visual impacts on this sensitive upland area,
    - the nature and scale of the impact on the local road network during the construction phase, and
    - the conflicts between the proposal and the adopted policies and objectives of the PA in relation to the siting and location of large scale wind energy infrastructure.
- Potential conditions listed, as required, including for omission of T04, T05 and T06.
- It is not recommended that permission be granted.
- Refusal recommended based on the following reason:
    - …The subject site is located in an upland area which is designated as 'most sensitive' 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 L02….

Furthermore, the Renewable Energy Strategy of the Waterford City and County Development Plan designates the site of the proposed development as an 'exclusion zone' or a 'no go area' for new wind energy developments. The proposed development would be sited on lands that are 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 UTL13 and L02 of the development plan and would, therefore, be contrary to the proper planning and sustainable development of the area.

8.2. Internal Referrals

8.2.1. None referred to or on file.

8.3. Record of Meeting of Waterford City and County Development Plan

8.3.1. The submissions made at the district meeting of the councillors is summarised as follows:

- Proposal would contravene the development plan.
- An Bord Pleanala requested to uphold development plan and respect local democracy.
- Acknowledge need to invest in renewable energy while respecting the rules and strategies in place.
- Site has upland status and is a high sensitivity area. Reference to L02.
- Application should not have been treated as SID and planning department should have dealt with it.
- If granted, recommend reduction from 15 to 10 years for the period of development.

- The Planning Regulator, statutory agencies, and the Department were satisfied with the development plan and it needs to be adhered to.
- Concern over the operation of An Bord Pleanala. ABP does not have respect for the rural area.
- Area is not zoned for windfarm development.

9.0 Prescribed Bodies

9.1. Tipperary County Council

9.1.1. Tipperary County Council has reviewed the proposed application and notes the following:

- Procedural Issue - the application was inappropriately circulated to the civic offices in Clonmel and not to the County Council offices.
- Principle Concern – While not within the administrative area of Tipperary County Council, the proposal has the potential to have a significant visual impact on areas of Tipperary that are deemed to be vulnerable landscapes and areas of amenity value.
- Character Area – application site adjoins area in Tipperary which is an uplands area in the Knockmealdown Mountain Mosaic which is identified as a sensitive area and a primary amenity area. The development plan notes that the Knockmealdown Mountain Mosaic is of low compatibility with a multiple turbine scheme.
- Waterford City and County Development Plan 2022-2028 shows that the part of the Knockmealdown Mountains within Waterford County Councils administrative area is unsuitable for wind energy proposals.
- Renewable Energy Strategy – Area of the Knockmealdown Mountain Mosaic is identified on Map 11 Wind Energy Policy Areas of the Tipperary County Development Plan 2022 as being ‘Unsuitable for Wind Energy Development’.
- Roads – Aggregate suppliers in Tipperary are noted to be proposed to supply the scheme. The impact on the roads network in Tipperary should be assessed.

9.2. Department of Housing Local Government and Heritage – Development Applications Unit

9.2.1. The submission of the department relates to ‘Nature Conservation’ and ‘Archaeology’. The following is a summary of their submission.

Nature Conservation:

- No issue with turbines 1-6.
- Significant concerns in relation to turbines 8-13 and associated infrastructure.
- Broemountain is the eastern extent of the larger upland habitat of the Kockmealdown mountain range, in largely undisturbed areas which contain habitats of conservation interest and provide habitat to species of high conservation concern. It is not designated as a conservation area but contains significant expanses of Dry Heath (4030) which is listed in Annex 1 of the Habitats Directive and is assessed in submitted EIAR as of national importance.
- National status of Dry Heath is ‘Bad’.
- Footprint of development would remove 3.5ha of Dry Heath habitat with additional removal of associated linked habitats. Loss is rated in EIAR as significant, permanent, negative at the local scale, with potential to result in impacts at national/international scale.
- Mitigation is proposed via restoration habitat, but changes in management could also achieve this without the permanent removal of existing quality habitat.
- Presence of supporting habitat of Nardus acid grassland indicative of an area of ecological value.
- The elevated open exposed nature of Broemountain provides mosaic of upland habitats and species which are nationally declining and forms a significant block of habitat on the eastern extent of the larger Knockmealdown area which is important for a range of open country species. Scale is important in conserving these species and it is important that they can range over large undisturbed areas and alternate between species of habitat which for various reasons, eg burning, forestry works etc, may become temporarily unsuitable but will at a later stage be used again.
- Habitats and species supported which are listed Annex I of the Birds Directive include Hen Harrier, Golden Plover, and Merlin. Other high (red list) conservation species present include Meadow Pipit, Kestrel, and Snipe in addition to medium

conservation concern (amber list) birds of Skylark. Previously extinct Annex I species reintroduced and recorded in this area include White-Tailed Eagle and Red Kite, with its likely that these birds would make future sporadic use of this upland habitat. The proposal would remove or degrade potential habitat for these species.

- Southern RSES, RPO 1 refers to requirement for environmentally sustainable development that has no adverse effects on the integrity of European sites and no net loss of biodiversity. The proposed project would in the Department's view cause a net loss of biodiversity.

- Habitat on Broemountain is of good quality for hen harriers, which were recorded breeding there in 2019, producing 4/5 chicks annually. Overall habitat is suitable for foraging and nesting. Broemountain represents the eastern extent of a larger hen harrier unit, where in 2015 five breeding harrier pairs nested, which constitutes between 3.2 and 4.8% of the national population. The area is not a designated SPA but meets the criteria for such an area, as it is used regularly by 1% or more of the all-Ireland population of a species in Annex I of the Birds Directive.

- The 2015 hen harrier survey indicated use of the Broemountain, within the area of the application site, by a breeding pair, in addition to one pair being within 0.5km of the site and one being within 3km of the site. While the EIAR did not find birds nesting in this area, the Department believe (Alan Mee, pers. Obs.) that there were present up to 2019 and if the habitat remains suitable, they could nest there again.

- The EIAR hinterland surveys record two sightings of hen harriers carrying prey. This is strongly indicative of an active nest. The EIAR does not elaborate on this and the information was not followed up on to establish where the nests might be.

- The Department does not accept findings of EIAR that harrier habitat on the site is highly degraded and 'deemed unlikely to be suitable for breeding' or that it is suboptimal for foraging, and does not accept the findings that only 11.17 ha of suitable habitat will be lost. The EIAR has not included the nearby young pre-thicket forestry plantation which is also suitable breeding and foraging habitat supporting the adjoining open habitat. The department is aware that hen harrier nested in young forestry at the Broemountain site in 2016 and a nearby site (0.5km) in 2019 and both pairs regularly forage over pre-thicket forestry as well as heather moorland and grass moorland at the site (A. Mee, pers. Obs.)

- ECJ has found in case C-378/98 ‘that areas which have not been classified as SPAs but should have been so classified continue to fall under the regime governed by the first sentence of Article 4(4) of the Birds Directive.

- Appendix 7.1 of the Ornithology Report does not provide start or end times for the vantage point watches, which is important information in evaluating potential breeding. Table 2.5 sets out breeding bird transects using CBS based methods, which were carried out well outside acceptable survey dates for passerines, raptors or breeding waders and are not likely to accurately reflect the breeding bird community. Only one season of data for 2022 is provided which is not sufficient for a project of this scale.

- Collison risk, direct removal of habitat for infrastructure, and displacement of species caused by wind turbines are all issues arising. In the Broemountain area the suitable harrier and golden plover habitat occurs in a long narrow band of c. 400m width and given the turbine layout, the Department believes this entire band of habitat is likely to become unsuitable or at best severely compromised. Displacement from humans and not just the turbines will also be an issue in this currently largely undisturbed area. Habitat displacement from turbines likely to occur for hen harrier at 200-300m with reduced usage up to 500m. Human related disturbance for hen harrier considered to be 300-750m and for golden plover at 200-500m, with the upper limit of the disturbance buffer recommended for use. Issue is acknowledged in EIAR. The Department consider that if the development goes ahead it is likely the area habitat suitable for hen harrier and golden plover will become unusable and this eastern portion of the Knockmealdown habitat complex will be lost, with such impacts likely to be further increased if proposals for the Knocknanask area (Scart Mountain Wind Farm) also proceed.

- Overall combined predicted impact of the various conclusions (direct loss, collision risk and indirect loss) under the Percival evaluations has not been considered and the calculations of indirect loss do not accept a significant avoidance zones around turbines. The Department considers the assessment significantly underestimates the zone of influence and overall likely impact of the proposed Broemountain development.

- In-combination effects for a wind farm development on the neighbouring site should be considered in terms of impact on the upland open habitats and on birds. Bird usage data from the other wind farm will be available to inform this application. The two sites together form a larger ecological unit. An overall ecological assessment needs to be considered to avoid long term very significant and cumulative impacts.

Archaeology

Broadly in agreement with findings of Archaeological Impact Assessment submitted, however issues arise and remain unresolved in relation to:

- Indirect impacts to the settings of certain sites subject to Preservation Orders within 10km of the proposed development. EIAR states national monuments within 10km have been considered, but two sites omitted from the assessment, namely Church and Graveyard at Clashganny East, Co. Tipperary (preservation order no. 4/1997) and Archaeological Complex at Courmaraglinmountain, Co. Wexford (preservation order no. 4/1996).

- Cumulative impacts to the setting of certain sites subject to preservation orders within 10km of the proposed development. The cumulative impact of the above sites not considered in the assessment.

- Further Information may be beneficial to address issues raised.

9.3. **Department of Defence**

- Conditions recommended in relation to turbines being illuminated and obstacle lighting requirements.

9.4. **An Taisce**

- The site is in an area classed as an exclusion zone for wind development in the Waterford City and County Development Plan 2022-2028. The proposal is not sufficiently justified and is a material contravention of the development plan.

- The area of the Tipperary bordering the site is also classed as unsuitable for new wind energy development, as per the Renewable Energy Strategy (Map 11) of the Tipperary Development Plan 2022-2028.

- Plans for a 16 turbine windfarm directly adjacent the subject site (scartmountainwindfarm.ie) indicates extensive surveying is ongoing and identifies provisional turbine locations. The potential cumulative impacts in combination with the subject proposal should be fully assessed for purposes of EIA and AA. The two projects are proposing a total of 28 turbines.

- AA and Kelly judgement – precautionary principle applies and there should be no reasonable scientific doubt.

- Hen harrier have been observed on the site. This is a highly threatened species under Annex I of the Habitats Directive. While site is not within an SPA, under Article 4 of the Birds Directive member states are required to strive to avoid pollution or deterioration of habitats of interest in areas outside specifically identified protection areas. It must be determined that the subject proposal will not adversely impact Hen Harrier, including in-combination with the Scart mountain wind farm proposal, which is currently in pre-planning.

9.5. **Coillte**

- Section 5.13 of the 2006 Windfarm Guidelines recommends a distance of not less than two rotor blades from adjoining property boundaries. Clarification from the Department (Circular Letter PD 6/06, 6th September 2006) notes this is equivalent to two rotor diameters. Turbines should therefore be at least 324m from the Coillte Boundary and this is not the case for T1, T9, T10, T11, T12 and T13.

- Coillte notes that no agreement is in place to allow the location of turbines within two rotor diameters of the Coillte property boundary.

9.6. **Failte Ireland**

- Wind energy strategies ensure that the development of renewable energy infrastructure such as wind farms is plan led and can be located to avoid or minimise disproportionate negative impacts on other land uses, including tourism related uses and the receiving environment.

- Tourism and impact on tourism is addressed in Chapter 5 Population and Human Health of the EIAR. Despite the location of the proposed development on the boundary with County Tipperary, tourist-related policies and objectives that area set

out in Chapter 9 of the Tipperary County Development Plan 2022-2028 are not referenced or discussed.

- There is a lack of detail on the location, nature and sensitivity of the tourist attractions/amenities potentially impacted by the proposed development and no mapping is provided of the tourist attractions/amenities or tourism characteristics in the area.

- It is also noted that other tourism-related publications, including 'The Waterford City and County Council Tourism Statement of Strategy and Work Plan 2017 – 2022' or the 'Rural Waterford Visitor Experience Development Plan 2021-2023' are not referenced.

- The assessment appears to rely solely on the landscape and visual assessment presented in Chapter 11 of the EIAR, with no detailed assessment of the likely impact, if any, on the tourist attractions, their tourist resources and their sensitivities.

- The Board is asked to consider the description of the baseline tourism environment; the tourist-related policies and objectives of the Waterford City and County Development Plan 2022-2028; the tourist-related policies and objectives as set out in Chapter 9 of the Tipperary County Development Plan 2022-2028; the objectives of other local and regional tourist development publications; and the likely impact of the proposed development on local tourist attractions in County Waterford and County Tipperary.

9.7. **Transport Infrastructure Ireland**

- Issues in relation to the turbine haul route and the grid connection to the Dungarvan 110kV substation, which would impact the strategic national road network.

- The haul routes is identified in section 2.5.4 of the EIAR. Section 14.3.1 and Appendix 14.1 comprise detailed analysis of the haul route. Sections of the national road are being traversed. Consultation with parties involved is needed to ascertain any operational requirements and to ensure the strategic function of the national road network is maintained.

- Mitigation measures identified by the applicant should be included as conditions.

- Damage shall be rectified by the development to TII standards and agreed with the Road Authority.
- While ‘oversized’ loads are addressed in the EIAR, no details are submitted in relation to abnormal ‘weight’ loads. Consultation and road permit from the local authority may be required.
- Section 2.2 of the EIAR relates to the grid connection. Issues are raised with the laying of high voltage electricity cabling in the national road reservation.
- EIAR does not consider in detail the impact on traffic flows, delays etc of traffic management measures to facilitate construction in the N72.
- Significant lack of co-ordination in gird connection proposals in the vicinity. There is a permission for a grid connection routing along this section of the N72 granted under ABP ref PL93.311670.
- TII has not confirmed acceptance of proposed HDD crossing in the vicinity of Kildangan Bridge, which is a TII structure.
- Recommendation for an alternative grid connection routing that avoids national roads and associated structures in the interests of safeguarding investment in and levels of safety on the strategic national road network in accordance with official policy.

9.8. **Uisce Eireann**

- There are a number of points where proposed underground cabling will cross over and below Uisce Eireann’s assets.
- No objection to cross under assets provided applicant ensures protection of Uisce Eireann’s assets, in compliance with their standard codes and practices.
- Any proposal to cross above assets requires clear and detailed information to provide evidence that no impact will arise, with appropriate and adequate mitigation measures. Further Clarification is required in this regard.

10.0 Observations

10.1. 20 number third party observations were received. The following is a summary of issues raised under common topics:

Policy and Procedural Issues

- The proposal is in an ‘exclusion zone’ on the wind energy designation map within the Waterford Renewable Energy Strategy, which is part of the development plan. The area is also designated a ‘most sensitive’ upland area and it is an objective of the development plan to protect such areas which have a very low capacity to absorb new developments as per L02. The proposal would materially contravene the Waterford City and County Development Plan 2022-2028.
- Area is deemed sensitive in the county development plan and turbines heights should be limited.
- Oral Hearing requested given the numerous inaccuracies in the application.
- Opposed to application being submitted directly to the Board and bypassing the local council.
- Wind Energy Development Guidelines 2006 are no longer relevant given the scale of turbines now proposed was not envisaged under them.
- Wind Energy Development Guidelines 2006 are no long legal given SEA was not undertaken when they were adopted.
- Wind take has not been properly considered given the neighbouring Scart windfarm has not been taken into account.

Visual Impact and Scale of Development

- Question the accuracy of the photomontages which have trees and poles placed in views blocking the turbines. Photomontages not realistic and points chosen are not representative.
- Proposal will negatively impact on views in the area of Comeragh/Moanavullagh and Knockmealdown ranges.
- Dyrick and proposed Scart Mountain wind farm are directly adjacent to each other giving a combined wind farm of 31 turbines.
- Turbine heights should be restricted in line within others in the area given the sensitive area designation on the site.

- The overall setting of the mountains of Broemountain, Dyrick, Mweeling, Comeraghs, and Knockmealdowns will be negatively impacted upon visually by the turbines.

- Combined visual impact of turbines in the area will detract from the existing landscape character.

- The 2006 wind guidelines refer to different receiving landscapes. The proposal comes within 'hills and flat farmland' character types, which generally accommodate small developments, have regular spacing, and are typically of medium height but tall may be acceptable. Proposal is for tall/high wind turbines which are not of typical medium height as indicated in the wind guidelines.

- There are a number of walking routes and trails in the area which will be negatively impacted by the proposed windfarm. Based on Zone of Theoretical Visibility, 10-12 turbines will be visible from St Declan's Way, which is an important tourism and pilgrim recreational route linking Cashel in Co. Tipperary and Ardmore in Co. Waterford. This route has been restored and officially opened in 2021 and is on the National Trails Register.

Cultural Heritage

- There are a significant number of sites listed on the Record of Monuments and Places that are in or close to the subject site.

- Landscape and cultural heritage of the area will be negatively impact by the turbine, borrow pits, substation etc.

- Chapter 13 of the EIAR does not acknowledge the non-tangible heritage of the place.

- Place names listed, but not thoroughly researched in chapter 13, specifically the source on Waterford County Council website of Reverend Power Placenames of the Decies. No mention of Sliabh gCua in terms of cultural heritage. Potential bardic school site, identified on 6inch maps, at location of proposed road works for haulage route, not mentioned in chapter 13. Developer's desktop study failed to identify a possible ringfort at the summit of Dyrick Hill, which is shown on a map located on loganm.ie William Larkin Grand Jury Map sheet 2 and included in submission. Evidence that site of windfarm was a passage way of sorts in medieval times,

therefore there may be more remains in this area. Concern that archaeological section of EIAR is not fully informed.

- There is a standing stone on Dyrick which EIAR describes in terms of impact as being negligible slight as it is reversible, and will be protected by 25m buffer zone. Disagree with this.

- No geophysical survey conducted in the area, which is contrary to heritage council guidelines. GSI undertook Lidar survey of Co. Waterford in 2016 but this is not referenced. Agriculture and forestry may have 'levelled' many monuments, but there are likely valuable subsurface archaeological sites.

- There will be a 25 m buffer between cairn identified and T13. This is insufficient as subsurface tombs could extend to this area. Hut site (not visible) and standing stone is proximate to T06 within 50m of access road and concern use of road will damage the hut and archaeology in the area. There is a 50m distance between the access road to T10 and Dyrick standing stone and 180m distance to the Borrow Pit. Concern in relation to construction impacts.

- The Comeraghs and Coumnagappul areas are 8km from the site and are teeming with archaeological sites, with a conspicuous absence of records for Broe and Knockmealdowns. These uplands are relatively low in terms of access and suitability for settlement and Broe would have been an ideal place to settle in pre-celtic, celtic, and medieval times. Concern that unfound archaeology in the area, including a lost Ogham Stone, would be damaged.

- A geophysical survey or LIDAR data of the uplands and foothills was not undertaken.

- Negative impact on landscape, tourism and heritage.

- The area is part of St. Declans Way, an ancient route over one thousand years old, which has recently been reopened and relaunched.

<u>Ecology – Habitats and Species</u>

- Negative impact on flora and fauna in the area, including birds, deer, bats, foxes, stoats, squirrels, cuckoo, golden plover, and owls.

- Negative impact on biodiversity, including hen harrier and peregrine falcon.

- The area is part of an SAC and is located over a locally important aquifer of high to extreme vulnerability.
- Area is home to deer, buzzards, hen harriers, kestrels and barn owls.
- Irish Peatland Conservation Group (IPCG) disputes that there is no peatland in the area. There is Dry Heath present and the peat depth probes show there is 0-40cm deep peat in places. 30cm is the standard definition for classifying peatland which was used in terms of economy in the past, however, a better method is that at least 30% is of organic matter content (IUCN Peatland Programme, June 2023). It is not possible to estimate the actual carbon and biodiversity cost of the proposed development if the peatland is not classified correctly and could give the wrong figures on carbon loss and cumulative impacts of future carbon sequestration ability of the landscape.
- Details of location of the trial pits and gauge cores missing and documentation does not include an Appendix 8.1 which is where it is stated that details of trial pits are located.
- Much of the site is within Annex I Dry Heath (4030) habitat which would be nutrient poor and susceptible to wet and dry deposition. Consideration has been taken into account of nitrogen deposition and impact on water courses. However, cumulative impacts of nitrogen taking into account vehicles, wider agricultural activities, industrial activities, and how these react together and how they will impact on dry heath habitat is important.
- IPCG note that Developers accept that 0.1% loss of suitable habitat for golden plover will occur and there will be a 0.12% increase in mortality rate. However, it is our international legal obligation to protect these species. Failure by developer to address cumulative and synergistic impacts on biodiversity when you add all the increased mortality rates, habitat loss, barriers to movements, affects on nocturnal migrations, future restoration potential, ongoing hydrological management/drainage, fragmentation from infrastructure and disturbance. Ireland is working backwards when installing renewable energy infrastructure onto our wetlands and peatlands as there are some of the rarest habitats in Europe and the world. The IPCG consider there is plenty of monoculture agricultural lands suitable for renewable energy

developments which would be better suited and have a more manageable cost in terms of habitat.

- Bats - Bat survey is incomplete as it notes that a bat roost survey of the farmhouse and sheds at site 5 was not accessible for survey at the time of survey. All eight species of bat identified in the survey are considered 'at most risk of extinction within the foreseeable future'. They are listed as of least concern on the Red List, but they are on the red list so this context is important. Methodology used states a conservative interpretation was applied and is it not clear what this means. Mitigation measures proposed are weak. A turbine is proposed within 70m of a bat roost, while the EUROBAT guidance on bats and wind turbines recommends a minimum distance of 200m between wind turbines and important bat habitats.

- Otters – screening report for AA does not have a conclusion in relation to otters on the delivery haul route, or in the EIAR in chapter 6 on Biodiversity. There is evidence of otters at Millinacoorka Bridge, which crosses the Finish River Blackwater SAC along the haul route and therefore otters will be affected by the development and no mitigation is offered.

- Connemara Bog SAC is mentioned in the screening assessment and is obviously a cut-and-paste error.

- Deer – reference to evidence of red deer in submissions. There are no red deer in this area, nearest area of them is in Kerry. This is inaccurate and concerning that surveyor did not see fallow deer which are abundant in the area. Reliability of the mammal survey is questioned.

- Fish – the aquatic fauna statement in the applicant's NIS is not based on evidence. No actual fish study undertaken, just an evaluation of the suitability, no salmon survey, no lamprey survey, no eel survey of the rivers listed, Farnanes, Lisleagh and Aughkilladoon Streams. Insufficient data and analysis provided.

- Freshwater Pearl Mussels – site is 2km west of Finisk River and 1.3km east of Glenshelane River, both of which have functional connections to the Blackwater River. The site is immediately east of the Blue Dot subcatchment of the Glenshelane River. It is stated the site is outside the zone of influence of the Freshwater Pearl Mussel, but it also in the same table makes reference to Connemara Bog SAC.

Appendix 1.1 indicates that the freshwater pearl mussel and Atlantic salmon have been recorded in Lismore Woods pNHA. AA has not considered the Freshwater Pearl Mussel, which is a qualifying interest of the Blackwater River SAC.

- Marsh Fritillary Butterfly – Listed in Annex II of the EU Habitats Directive. Field surveys were undertaken in April and September. However May and June is when this species is in butterfly stage. The Marsh Fritillary larval food plant occurs in the area of the site. This plant grows on wet grassland habitat, in the area of T9, T10, T11, T12 and T13.

- Small Heath Butterfly – Near threatened species on the Red List of Irish butterflies. The removal of heath would change the vegetation that this butterfly requires. The AA notes that this butterfly was recorded in the commonage area during field surveys.

Birds/Ornithology

- Hen harrier and golden plover are noted in the EIAR. Mitigation measures consider surveying and avoidance of tree felling during breeding season, but do not provide for active protection or enhancement of avifauna, even as biodiversity is threatened globally.

- There are 4 operational windfarms and one consented within 20km. Two more are in pre-planning – Counmnagappal and Scart Mountain. Cumulative effect may have negative impact on breeding and foraging areas for the hen harrier and golden plover.

- EIAR says wintering birds will habituate to the presence of turbines and avoid collison. However, another study (Youn E.. Vultures blind to the dangers of wind farms, Nature, 2012) notes that birds of prey have a specific visual adaptation for hunting where they focus on the ground and ignore what lies directly in front of them.

- Golden Plover – Insufficient and non-existent mitigation proposed.

- Hen Harrier – Annex I of the Birds Directive. The Knockmealdowns Mountain Range within Zone 2 of the Hen Harrier breeding population as per NPWS (2022) ‘Hen Harrier Conservation and the Wind Energy Sector in Ireland’, a supporting document to the Hen Harrier Threat Response Plan. There were 3 sightings within 11 days in May 2015 of Hen Harriers flying overhead of the proposed site. During

November 2017 and April 2021, there were sightings in The Vee in the Knockmealdowns. The NIS does not comment on these sightings. It states that suitable habitat exists on or near the site. Windfarms have been shown to have a negative impact on breeding habitat and breeding productivity.

Water, Drainage, and Flood Risk

- Site is in close proximity to the Blackwater River SAC and partly comprises the catchment/sub basin for the Blackwater River.
- Site is situated on wetlands and mountain slopes which provide water sources to the Blackwater via the Glenshelane and Finisk rivers and Nire rivers. Wetlands and mountain uplands provide free water services which are not appreciated by those who benefit. These include: Clean drinking water, Flood protection, and Drought protection.
- There is a private well belonging to House 60 downstream of the site. Concern in relation to risk of contamination.
- Significant risk of oil spillages to local rivers. NIS does not identify appropriate mitigation measures for this.

Community Engagement

- Community engagement of limited value and not meaningful. Newsletters not distributed to all, email queries not responded to, community opinion survey results not published, and commitment to inform community when application was lodged was not followed through.

Overall Residential Amenity

- From House 60: All 12 turbines will be visible from the house. 10 of the 12 turbines will be within 1900m of House 60. 6 (T6, T8 and T10-T13) will be clustered within a 60 degree viewing angle from the main living room and all 12 will be within 90 degrees. House 60 is at an elevation of 1170m above sea level. The two lowest lying turbines will have their bases at an elevation of 165m, and the highest one will have a base level of 415m above sea level. T13 will have a tip height of 600m above sea level, and is 1500m from House 60. Discrepancies listed in terms of distance of turbines from House 60 – closest is stated to be 1229m in shadow flicker section; VP11 states closest to be 900m; and 950m according to the location of the sound

recording devices. Turbines will not be screened as suggested. Do not consider that turbines as per documentation will 'not appear out of place' and their impact to be of 'substantial moderate significance'.

Noise

- Concern from resident as their property is in the wake of the wind.
- Concern in relation to noise and impact on autistic children living within 2km of the site (house H58 in the application).

Shadow Flicker

- Concern raised in relation to shadow flicker (house H58 in the application, figure 1.3), noting in particular that turbines F04, T05 and T06 are highly likely to cast flickering shadows on house H58.
- House 60 have concerns in relation to visual impact, noise, shadow flicker and proximity.

Local Road Network

- Local road network is not adequate to accommodate heavy construction traffic, including heavy vehicles and will impact on road safety.
- Quality and level of surveys as set out in the TTA is considered inadequate.
- Adequacy of bridges along the haul route to accommodate heavy loads, in particular Mullinacoorka Bridge, and which the EIAR states requires further consideration with the Council.

Cumulative Impacts of EIAR

- EIAR, section 11.4.4, has not addressed cumulative impacts of proposal at Scart Mountain (600m from proposal) and drawings of that scheme were available prior to the submission of this planning application.

Adequacy of AA

- Concern in relation to extent of European sites included in the AA.
- Concern in relation to the adequacy of proposed mitigation measures and language used in terms of certainty of delivery of certain mitigation measures.

- Development will result in negative impacts on European sites.

Health and Safety Concerns

- Autism and wind turbines – noise and shadow flicker concerns. Potential impact of a constant pulsating sound pressure for those with sensory hypersensitivity.

- Concern in relation to infrasound and impact on those with autism as per published study by H. and I.M. Enborn, 2013, Infrasound from wind turbines: An overlooked health hazard.

Land Ownership

- Part of the project area is an area described on the land registry as 'unregistered' Any permissions that Empower claims to have received from 'landowners' is questionable. People hold 'rights' on unregistered land (e.g. turbary (turf cutting) or grazing rights). They cannot give permission for any other activity (e.g. forestry or construction). This has historically protected these precious unspoilt areas from devastation by forestry monoculture and housing development. Only the owner of the area may give permission for a change of use (which, in addition, would still be subject to planning regulations).

Wind Speed

- The average yearly windspeed at this location is insufficient for an economically viable wind farm. SEAI map shows the area to be medium/low wind speeds.

Other Issues

- There are a number of inaccuracies in the documentation and on line maps.

- Alternatives section of EIAR is questionable in terms of location of alternatives in Kerry. A more suitable alternative would be a proposal on lands in Waterford where wind farms are permitted.

10.2. Oral Hearing

10.2.1. The Board decided not to hold an oral hearing as it considered there was sufficient information contained within the file to allow the Inspector to make an informed recommendation as to whether permission should or should not be granted.

11.0 Planning Assessment

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

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

11.3. I consider that the key issues that arise for consideration by the Board under this section of the report relate to the following:

- Principle of Development and Planning Policy
- Residential Amenity
- Landscape and Visual Impact
- Biodiversity
- Other matters

Each of these issues will be dealt with under separate headings below.

11.4. Principle of Development and Planning Policy

11.4.1. It is noted that Waterford City and County Council recommends that planning permission be refused on the basis that the proposed development materially contravenes policies UTL 13 and L02 of the development plan and would therefore by contrary to the proper planning and sustainable development of the area. The majority of observer opinions reflect that of the planning authority in this regard.

11.4.2. In terms of national policy, there is recognition of 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's Climate Action Plan 2023 states a large-scale deployment of renewables will be critical to decarbonising the power sector, with a requirement to meet a target of 9GW of onshore wind by

2030 and the Climate Action Plan 2024 (at public consultation stage) builds on the previous plans which recognise that to meet the key target of 9GW of onshore wind by 2030, there needs to be a major upscaling and accelerating in current deployment of renewables particularly onshore wind. At a national level the Wind Energy Development Guidelines 2006 and Draft Guidelines 2019 both emphasise the need to meet national objectives for renewable energy in a manner which is compatible with the proper planning and sustainable development of the area.

11.4.3. The support for wind energy development is evident within the regional and local level policy context (see Section 5 of this report above). 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 seek 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. I 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).

11.4.4. I note that as per Map A8.3 of the Landscape and Seascape Character Assessment, 8 of the proposed 12 turbines are within an area considered to be ‘Most Sensitive’, with a portion of the site (2 no. turbines) within a ‘High Sensitive’ area and the area of the site where the remaining 2 turbines are located and the grid connection route (GCR) are located is within a ‘Low Sensitive’ area. 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 the scale of the development proposed, with specific regard to those turbines within the 'High Sensitive' area. This is discussed in detail in Section 12.14 of this report.

11.4.5. I note that the operative development plan as adopted 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 for compliance with said policy. I refer the Board to relevant 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.

11.4.6. Having 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 a significant portion of 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 this policy objective. I consider that the proposed development should be refused on this basis.

11.4.7. The Board will be aware that under section 37(2)(a) of the Planning and Development Act 2000, as amended, it may, in determining an appeal under that

section, decide to grant a permission even if the proposed development contravenes materially the Development Plan. It is open to the Board to consider the development against S37(2)(a) of the Act, notwithstanding my opinion in relation to recent case law.

11.4.8. In conclusion, the proposed windfarm would be compatible with European, National and regional planning and renewable energy policy, as set out in Section 5 of this report and it would contribute to the achievement of European and national renewable energy targets. However, having regard to policy objective UTL 13, I am not satisfied that the principle of the proposed development is acceptable on these lands, which are designated an 'exclusion zone' or a 'no go area' for new wind energy developments. The proposed development in my view materially contravenes Policy Objective UTL 13 in that the proposal is not in accordance with the Waterford Renewable Energy Strategy and the wind energy designation map (Appendix 2 of the RES). Furthermore the site being elevated is within a 'Most Sensitive' character area, a designation which informed the RES wind energy map, and as detailed in my assessment in Section 12.14 of this report, I consider the proposed development would be contrary to policy objective L O2. Overall, therefore, the proposed development be contrary to the proper planning and sustainable development of the area and I recommend that planning permission be refused.

11.5. **Residential Amenity**

11.5.1. Many of the observers express serious concerns as to the potential impact of the proposal on residential amenities with specific reference made to noise, shadow flicker, health effects and devaluation of property. Visual impacts as they relate to residential amenity are also raised. Concerns raised from the dwelling referenced as A number of submissions disagree with assessment that turbines will 'not appear out of place' and their impact will be of 'substantial moderate significance'. A number of observers state that the difference in ground levels between dwellings and the ground level of the turbines exacerbates the impact of the height of the turbine.

11.5.2. In terms of minimum separation distances from dwellings, I note that the applicable 2006 guidelines require a setback of 500 metres. There are 111 dwellings located within 2km of the site. Two dwellings (H106, c.350m east of T11, visible in VP14;

and H92) are subject to agreements in relation to occupancy. The closest dwelling to a proposed turbine position (T09) is situated approximately 754m southeast of T09 (house H93). This is a setback of 4 times the turbine tip height, which materially exceeds the 2006 Wind Energy Guidelines requirements, and the requirements as proposed in the 2019 draft guidelines of 4 times the tip height (tip height as proposed is 185m – x4 equates to 740m). The closest dwellings to the proposed substation and meteorological mast are located approximately 440m and 696m respectively to the southwest of these structures.

11.5.3. I refer the Board to VP11 which is taken along the road where H58 and H60 are located. I note concerns raised by H60 in relation to visual impacts of the turbines as all will be visible from the dwelling. Having regard to the scale and location of the proposed development within an elevated rural area and the height of the turbines, the windfarm will undoubtedly have an impact on the visual amenities of those living in the area. This impact must be balanced against the imperative to address the climate change crisis in terms of the need to harness alternative energy resources and the fact that such types of developments are dependent on extensive sites at a remove from built up areas with appropriate wind speeds. I acknowledge that the view of a turbine uphill and at higher ground levels can have a more overbearing effect than a similarly distant turbine at the same ground level. However, I refer to the fact that a separation distance in excess of 4 times the turbine height is being maintained from the nearest dwellings in accordance with the 2019 draft guidelines with respect to residential visual amenity considerations.

11.5.4. There would be some disturbance during the construction and future decommissioning phases in relation to works and traffic movements, and there is potential for disturbance during the operational phase in relation to noise, shadow flicker and visual intrusion. I refer the Board to Section 12 hereunder for a more detailed assessment of potential impacts on population and human health, shadow flicker, the landscape, traffic, and air and climate. I consider that having regard to separation distances from dwellings, and variation in topography as well as existing hedgerows/trees, the proposed development would not significantly overshadow, or result in a loss of privacy to any nearby houses, and therefore there would be no significant loss of residential amenity.

11.5.5. A number of observers are critical of the fact that the final iteration of the Construction Environmental Management Plan (CEMP) would be subject to agreement with the planning authorities without 3rd party participation. Particular concerns are raised about abnormal deliveries, impact on the local road network, and impact on residential amenities. The CEMP sets out the anticipated phasing and scheduling of main construction task items. I submit that the draft CEMP as provided in Appendix 2.1 provides for an acceptable level of detail to allow for a proper assessment of the impacts on residential amenity. It is accepted that a level of disruption both in terms of road closures and increased noise during the construction phase will arise but would be temporary in duration and impact. Having regard to mitigation measures proposed, the level of impact is acceptable. I refer the Board to Section 12.12 of this report hereunder in relation to traffic and transport.

11.6. **Landscape and Visual Impact**

11.6.1. A number of observations to the application raise concerns about the landscape and visual impact of the proposal. Observers raise concerns in relation to the consideration of impact on tourism and recreational amenities and concern that St. Declans Way has not been referenced in the EIAR. Waterford City and County Council in its submission expresses concerns in relation to the visual impacts of this development on this sensitive upland area, which is 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. Policy objective L02 is noted, where a significant area of the site is designated as being of specific scenic value or sensitivity. In addressing potential conditions in the case that permission is granted, it is recommended that T04, T05 and T06 be omitted. Tipperary County Council has made a submissions and references content within their development plan as it relates to their side of the border to the north of the application site where it is determined that there is low compatibility with a multiple turbine scheme and there is potential for this development to have a significant visual impact on areas of Tipperary that are deemed to be vulnerable landscapes and areas of amenity value.

11.6.2. Failte Ireland raises concerns in relation to the level of assessment within the EIAR on tourism under population and human health, stating the assessment appears to

rely solely on the landscape and visual assessment presented in Chapter 11 of the EIAR, with no detailed assessment of the likely impact, if any, on the tourist attractions, their tourist resources and their sensitivities and no mapping provided of the tourist resources in the area, and no reference to 'The Waterford City and County Council Tourism Statement of Strategy and Work Plan 2017 – 2022' or the 'Rural Waterford Visitor Experience Development Plan 2021-2023'.

11.6.3. The study area for the development covers a radius of 20km in accordance with the Wind Energy Development Guidelines (2006). The windfarm, of itself, will not impact on the use of the area for walking and the concerns raised relate to the visual impact on recreational users in the wider area and on tourism value. Notwithstanding the concern in relation to lack of discussion on strategic tourism policy guidance, I note the level of overlap between landscape and visual impacts with tourism, and having reviewed all submissions and all relevant policy guidance, including all sections of the operative development plan, I consider I have sufficient information before me to undertake an assessment.

11.6.4. The EIAR notes that due to the complex terrain and high degree of contrasting landscape features within the study area, a broad array of tourism and amenity features occur throughout its 20km extent and include waymarked trails, local walks, cycling trails, in addition to numerous heritage features. I note that while a number of tourism routes and walking trails are referenced, St. Declan's Way which is a significant amenity walking route c. 5km west of the site (at its closest point, as the crow flies) is not specifically referenced. Nonetheless, I note the VPs submitted with the photomontages are from/within proximity of sections of St. Declan's Way which are key amenity/heritage/tourism point, including Mellery Abbey. I refer the Board to VP9, VP18, and VP23, which are relevant in the consideration of St. Declan's Way. As evident from the landscape assessment in the EIAR, while the development may be visible at points on St. Declan's Way, this is not considered unacceptable having regard to the the backdrop of the existing landscape, intervening distance from the site, and layout of the turbines.

11.6.5. Overall, the landscape impacts are deemed by the EIAR to be acceptable and it is indicated that no significant adverse residual landscape or visual amenity impacts will arise. The environmental effects of the proposed development are addressed in detail in Section 12.14 of this report hereunder, however, I conclude here that I have

considered the landscape designations in relation to this area, its location across foothills and uplands area, and all submissions made and I consider that having regard to policy objective LO2, 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 be contrary to the proper planning and sustainable development of the area.

11.7. **Biodiversity**

Dry Heath - Annex I Habitat

11.7.1. The site is located within an area of upland heath, forestry and agricultural farmland. Of note is the expanse of dry heath habitat which occurs within the Broemountain commonage area to the west of the site. This dry heath habitat (4030) is protected under Annex I of the EU Habitats Directive (EU Directive on the Conservation of Habitats, Flora and Fauna (92/43/EEC)). In a report on the current conservation status in Ireland of habitats and species listed under the habitats directive from the Department of Culture Heritage and the Gaeltacht 'The Status of EU Protected Habitats and Species in Ireland' (2019), it is stated in relation to dry heath (4030) that 'A number of significant pressures were recorded for this habitat in the current reporting period, particularly overgrazing by sheep and burning for agriculture. Both cause habitat degradation and loss through erosion. Afforestation and wind farms are also recognised as problems for Dry heath. The Overall Status of Dry heath is assessed as Bad and the trend is stable. This assessment is unchanged since 2013'.

11.7.2. Given the layout of the proposed turbines, the development will result in the direct loss of 3.5ha of Annex I dry heath (4030) habitat. The submitted EIAR states that given the current inadequate status of the reference area for this habitat, any loss of dry heath habitat as a result of the proposed development will have the potential to result in a significant negative effect, at the national/international scale. The mitigation methods outlined in the Habitat Management Plan include restoration of remaining areas of dry heath and unimproved acid grassland in the surrounding area through control of grazing and enhancement of an area of approximately 12ha of dry heath habitat and also through appropriate grazing management of approx. 8ha

within the Lisleagh Mountain Wetland site (Site Code: 173) to enhance poor fen habitat at that location.

11.7.3. I refer the Board to the submission from the DHLGH (summarised in Section 9.2 above) which raises serious concerns with regard to the loss of the dry heath habitat (3.5ha) and associated acid grasslands (4.8ha). It highlights that the elevated open exposed nature of Broemountain supports a mosaic of upland habitats and species over this site and the wider area, which are nationally declining, including Annex I species of hen harrier, golden plover and merlin as well as other red listed species of high conservation concern in addition to amber list species of medium conservation concern. It is also noted that previously extinct Annex I species re-introduced in Ireland of white tailed eagle and red kits have been recorded in the area and given the nature and location of this upland habitat, it is likely they would make periodic use of this area. The DHLGH submission states that 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.

11.7.4. Under Article 4(4) of the Birds Directive, '… Outside these protection areas, Member States shall also strive to avoid pollution or deterioration of habitats'. With regard to the proposed development, I do not consider the proposed development will avoid deterioration of Annex I habitats, in that 3.5ha is to be directly removed, alongside removal of associated 4.8 ha of associated dry acid grassland and furthermore Annex I birds are currently utilising this habitat. I do not consider that the mitigation proposed of improving land management and restoration of degraded dry heath habitat in the area can appropriately mitigate the removal of this Annex I habitat or mitigate the likely impacts of its removal on known birds species in the area, including Annex I hen harrier.

11.7.5. Having regard to the quality of the Annex I habitat being removed, its importance locally, nationally and internationally, and its role in supporting very high conservation value bird species under threat, as well as medium and low value species, and having regard to the submission of the Department, 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.

Hen Harrier – Annex I Species

11.7.6. The hen harrier (circus cyaneus) is afforded protection under Annex 1 of the EU Birds Directive (2009/147/EEC). The hen harrier is red-listed in the UK is amber-listed in Ireland due to moderate long-term breeding population declines (Gilbert et al., 2021), however following a recent government report on hen harrier (see below), it is states that it is likely the hen harrier will feature on the next Red-list of the Birds of Conservation Concern in Ireland (BoCCI).

11.7.7. The hen harrier, golden plover and merlin are bird species associated with dry heath habitats (4030). The application site is located in a non-designated regionally-important area for Hen Harrier and an area of significant ornithological value, as evidenced by the applicant's bird surveys in support of the application. The Broemountain area makes up the eastern extent of a larger unit (Knockmealdown area) of important hen harrier habitat where in 2015 surveys indicated five breeding pairs nested, which equates to between 3.2 and 4.8% of the national population of this Annex I bird species. The submission from the DHLGH notes that one of the five pair breeding pairs recorded in 2015 was found within the area of the application site (in the Broemountain area), one was within 0.5km of the site and one was within 3km. The submitted EIAR states it did not find hen harrier birds nesting in this location. The hinterland surveys recorded two sighting of hen harriers carrying prey. The Department notes that this sighting of a hen harrier carrying prey is a strong indication of an active nest in the area, however the EIAR does not discuss or elaborate upon this in terms of this significance. The Department considers that given they believe that hen harrier were present here up to 2019 (personal observations of ecologist Alan Mee - harrier survey work carried out between 2015-2019 on behalf of the golden eagle trust), that if the habitat remains suitable they could nest there again. The Department considers the existing habitat is suitable for breeding and foraging.

11.7.8. In a recent government report 'The 2022 National Survey of breeding Hen Harrier in Ireland' (2024), it is stated that the hen harrier is a rare bird of prey with a declining population in Ireland. The hen harrier population in Ireland was estimated at 84

confirmed and 21 possible breeding pairs (85-106) in 2022. This is a decline of one third (33%) in the total population since the previous national survey in 2015 and a 27% contraction in their breeding range for the same period and overall indicates that declines in both range and population. The main drivers of its decline are the ongoing loss and degradation of suitable nesting, foraging, and wintering habitats. The report states that within the Knockmealdowns, Kilworth, and Comeraghs (Co. Cork & Co. Waterford), a region which has been a stronghold for the species, numbers have fallen by 70% since 2015. The report states in relation to spatial planning, that there is a need for consistent and recognised guidance and best practice methods for bird surveys to inform impact assessment (including for hen harrier) and a need to improve upon existing measures in Ireland for spatial planning for various human activities including renewable energy developments (e.g. windfarms and solar farms), forestry and recreation and avoidance of sensitive sites for hen harriers.

11.7.9. The Annex I dry heath (4030) habitat of Broemountain is an important habitat within the Knockmealdown mountain area which is a suitable habitat for the Hen Harrier, which is afforded protection under Annex 1 of the EU Birds Directive (2009/147/EEC) and which has been recorded on and within the area of the site in 2015 and in the recent past. The Broemountain area of the application site is identified as being a suitable foraging and breeding habitat for hen harrier. I am not satisfied, based on the details submitted with the application, that the proposed development would not have a significant adverse impact on hen harrier. It is considered that the proposed development would be contrary to Annex 4(4) of the Birds Directive and objectives ENV01, BD01 and BD02 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, therefore, the proposed development would be contrary to the proper planning and sustainable development of the area.

11.8. Other Issues

Submission from Coillte

11.8.1. A submission from Coillte raises issue with the proximity of the proposed turbines to their boundary. Reference is made to Section 5.13 of the 2006 Wind Energy

Guidelines and it is stated that turbines T8, T9, T10, T11, T12 and T13 are within the minimum distance of 324m from the boundary, ie two rotor diameters.

11.8.2. I note Section 5.13 of the Wind Energy Guidelines 2006 relates to the area of windtake, and this is also referenced within Section 4.9.6 of the Draft Wind Energy Development Guidelines, 2019. The 2006 guidelines state that to ensure optimal performance and to account for turbulence and wake effects, the minimum distances between wind turbines will generally be three times the rotor diameter in the crosswind direction and seven times the rotor diameter in the prevailing downwind direction and that a distance of not less than two rotor blades from adjoining property boundaries would generally be acceptable, unless by written agreement of adjoining landowners to a lesser distance. However, where permission for wind energy development has been granted on an adjacent site, the principle of the minimum separation distances between turbines in crosswind and downwind directions indicated above should be respected.

11.8.3. There is a relatively narrow central area of Coillte land within the centre of the application site which is excluded from this application. I am unclear as to the full extent of other Coillte lands bounding the site, in particular those lands to the west.

11.8.4. Two rotor diameters in the case of the proposed turbines in this application equates to a distance of 324m. I note that T08 is located c. 170m from its closest site boundary; T09 is c.200m; T10 is c.160m; T11 is c.200m; T12 is c. 200m; and T13 is c.150m from the closest boundary of the site. The application site is relatively narrow in width and the locations for the wind turbines have been influenced by environmental constraints, including distances to streams, existing habitats etc. There is no significant consideration in the submitted documentation which addresses this guidance element of the wind energy guidelines. While I am not clear on the scale and extent of the Coillte lands in question and if the development potential of those lands would in fact be seriously undermined with the layout as selected, however given the distances to boundaries of the proposed wind turbines it is reasonable to consider that an adjoining site for a similar development could be impacted by the layout as proposed. Should the Board wish to address this issue and determine where limitations occur relative to boundaries and neighbouring land uses, having regard to the need to optimise the development potential of the existing site while having regard to the neighbouring sites and their scale, Further Information

would be required. However, given the substantive issues raised elsewhere in this report in relation to the principle of this development at this location, I do not consider that Further Information is warranted in this instance and note that the proposed development does not comply with the Wind Energy Development Guidelines, 2006, in relation to maintaining appropriate separation distances between turbines and adjoining sites.

Public Consultation and Community Report

11.8.5. I note the number of observations which question the level and genuine nature of the public engagement.

11.8.6. Chapter 1 of the EIAR outlines community consultation undertaken and the proposal for a community fund, with an overall Community Report in Appendix 1.3 setting out the details of community engagement. While I note the objections and concerns raised, the applicant's approach has had regard to the relevant guidance for wind farms and the proposal has complied with statutory requirements with regard to publication of site and newspaper notices. I note in this regard the significant number of observations made to the Board, which is indicative of the wide level of public awareness of the proposed development. The observations set out detailed concerns regarding the potential planning and environmental impacts of the proposed development and associated mitigation measures. These issues will be addressed throughout this report, however, I conclude that the applicant has demonstrated that adequate public and stakeholder engagement took place.

Movement and Access

11.8.7. The proposed development has the potential to impact on the national, regional and local road network during the construction and future decommissioning phases mainly in relation to the delivery and removal of the windfarm components, the delivery of construction materials and worker vehicles. I refer the Board to EIA Section 12.12 of this report hereunder for a more detailed assessment of potential impacts on the road network.

Flood Risk

11.8.8. The proposed development has the potential to affect soil hydrology and surface water flow patterns in the surrounding area during the construction, operational and

decommissioning phases. I refer the Board to EIA Section 12.8 of this report hereunder for a more detailed assessment of potential impacts on the water regime.

Forestry

11.8.9. The application was accompanied by a Forestry Report (Appendix 2.4 of EIAR). The proposed windfarm infrastructure layout affects forestry for 5 out of the 12 turbine locations. All 5 of these turbines are within the privately owned forests. To facilitate the access roads, bat buffers and turbine hardstands approximately 7.88 ha will need to be clearfelled. Tree felling, timber transport and replanting will be caried out in accordance with the terms and conditions of the Forestry Licence requirements.

Impact on Farming

11.8.10. An observation raises concern as to the impact on the viability of agriculture in the area of the wind turbines and the potential impact for future planting of honeyberry which is susceptible to environmental changes, and will impact on native Irish bee hives on a local farm.

11.8.11. I note the existence of windfarms at countrywide level which operate within and adjoining farming operations. In the absence of any peer reviewed studies which indicate that windfarms have a negative impact on farms and/or agriculture I conclude that the proposal would not have an adverse impact on farms and agriculture in the vicinity of the proposed development. In relation to the native Irish honeybee, no information has been submitted as to whether there are drone congregation areas within the site and I further note that bees typically congregate in DCAs at a height of c. 5-35m above ground and the height of the wind turbine is greater than this. In relation to issues of electromagnetic fields, environmental noise, stray voltage, air pressure changes, turbulence, and vibration, there is a lack of convincing evidence or scientific support that wind turbines negatively impact honey bees and their pollination efforts.

Adopted and Draft Wind Energy Guidelines

11.8.12. Observers claim that the national wind energy guidelines are inadequate, out of date and relate to a different scale of turbine than currently utilised and that the use of the 2019 Draft WEDGs should be applied, albeit they are also considered

inadequate. Observers also content that SEA was not complied within under WEDGs 2006 and therefore they are not applicable.

11.8.13. I note that the WEDGs 2006 remain national policy and the Board must take them into account. Some legal judgements have referenced the need to have regard to the draft WEDGs 2019, therefore I consider both as set out in relevant sections of this report. Overall, I am satisfied that the issue regarding national guidance in terms of the adopted and existence of draft guidelines does not militate against the making of a decision in this case. I would emphasise that the guidance is not prescriptive or binding and is only one part of the package of information to be taken into account by the Board in assessing an application.

11.8.14. A number of observations refer to a case taken to European level to seek the annulment of a development consent for a wind farm on the basis that the decision was based on national instruments which were not subject to an environmental assessment and thereby infringed Articles 2(a) and 3(2)(a) of the Directive 2001/42. The European Court ruled that the concept of plans and programmes in Article 2(a) covers an order and circular, adopted by the government of a federated entity of a Member State. It also ruled that Article 3(2)(a) of the Directive must be interpreted as meaning that an order and a circular, both of which contain various provisions concerning the installation and operation of wind turbines, including measures on shadow flicker, safety, and noise level standards, constitute plans and programmes that must be subject to an environmental assessment in accordance with that provision. The Court in its ruling stated that where it appears that an environmental assessment within the meaning of Directive 2001/42 should have been carried out prior to the adoption of the order and circular on the basis of which a consent, which is contested before a national court, was granted for the installation and operation of wind turbines with the result that those instruments and that consent do not comply with EU law, that court may maintain the effects of those instruments and that consent only if the national law permits it to do so in the proceedings before it and if the annulment of that consent would be likely to have significant implications for the electricity supply of the whole of the Member State concerned, and only for the period of time strictly necessary to remedy that illegality. It is for the referring court, if necessary, to carry out that assessment in the case in the main proceedings [CJEU

Case C-24/19 / Judgment | European Union Agency for Fundamental Rights (europa.eu)].

11.8.15. The observers to the application contend that the decision is directly applicable in that the Wind Energy Development Guidelines 2006 to which regard and reliance is had in planning decisions constitutes a plan/programme which should be subject to Strategic Environmental Assessment (SEA).

11.8.16. The preparation of guidance is within the remit of Government to address. The matter is not within the remit or scope of the Board in the context of the current application.

Water Framework Directive

11.8.17. Observers question the third Cycle Draft RBMP 2022-2027 on basis that it is draft form after being referred to the EU and leaves uncertainly in relation to the relevant plan in force.

11.8.18. I refer the Board to Section 12.8 of this report for detail in relation to hydrology and hydrogeology.

11.8.19. As noted elsewhere in this report, a challenge to a national plan is not within the remit or scope of the Board to address. I note the Water Framework Directive has been adequately addressed in the submitted documentation and a specific assessment has been submitted under Appendix 9.3, utilising the most up-to-date information available.

Legal Entitlement

11.8.20. Concerns are raised in submissions in relation to the applicants right to develop on what are commonage lands. The applicant states that agreements are in place with all landowners.

11.8.21. I note that a grant of permission does not permit the applicant to encroach on 3rd party lands. In addition, should permission be granted the development would be required to be carried out strictly in accordance with the plans and details accompanying the application. The applicant should also be advised of Section 37H(6) of the Planning and Development Act, as amended, which states that a person shall not be entitled solely by reason of a permission under section 37G to carry out any development.

Errors in Documentation

11.8.22. A number of observations raise concerns in relation to typographical errors within the documentation including references to Cork County Development Plan and Carlow County Development Plan. I note the errors raised are typographical in nature and have not impacted my assessment of the application. There is no reason to believe that such errors in the instances raised by observers negate the results of professionally conducted surveys or analysis within the documentation.

11.8.23. With regard to the CEMP, I note a condition would be required requiring agreement with the planning authority of the CEMP prior to the commencement of development. Certain elements of the construction plan cannot be finalised at this stage and this is considered acceptable and in line with construction practices. While I note incorrect references to road names therein as raised by observers, the mapping submitted with the application is clear in relation to the haul route and I have no concerns in this regard. I also note it is at that stage that the detailed recommendation of the Pell Frischmann Report would be applied. I do not consider the lack of a finalised CEMP at this stage amounts to a deficit in the EIAR. I refer the Board to Section 12.12 of this report for a detailed assessment of traffic and transport.

11.8.24. In relation to the details required within a decommissioning plan, given time lines involved for the operation of the development, this issue can be appropriately addressed by way of condition, should the Board be minded to grant permission.

11.8.25. I have reviewed all information submitted and I am satisfied that the documentation allows for a robust assessment of the application and where differences arise in terms of analysis, this is not on the basis of typographical errors but on the basis of issues arising in relation to the proper planning and sustainable development of the area.

Wind Turbine Details

11.8.26. Concern is raised in an observer submission in relation to the accuracy of the information presented in relation to the proposed wind turbine dimensions. The dimensions on which this planning assessment is based are those stated in the application, ie turbine with an overall ground tip height of 185m; 162m rotor diameter

and a hub height of 104m. Any material change in the type of turbine proposed would require a revision to any permission granted/new application.

Details in Application

11.8.27. Observers contend that insufficient details have been submitted with the application which is not in compliance with the Planning and Development Regulations 2001 (as amended).

11.8.28. I have reviewed the drawings submitted and I consider the level of detailed provided is in accordance with the requirements of the Planning and Development Regulations 2001 (as amended). I note the PA raised no validation issues in this regard. I consider the extent and nature of the development has been clearly set out.

Sites included in AA Assessment

11.8.29. Observers raise concerns in relation to sites in the area which were excluded from the AA.

11.8.30. I refer the Board to Section 13 of this report where AA is addressed in detail. I note that a screening process was undertaken and I am satisfied based on knowledge of conservation objectives, distance of development from European sites and consideration of identifiable source-pathway-receptors, that the sites screened for appropriate assessment have been correctly selected for further consideration. I note that European sites relate to designated SAC and SPAs and not to nationally designated areas of NHAs.

Future Wind Farm Proposals

11.8.31. There is reference in observer submission to a proposal for a windfarm at Scartmountain, west of the application site, which has been subject to pre-planning with ABP and in relation to which the developer has created a website containing an overview of proposals.

11.8.32. I would highlight that this proposal for a windfarm at Scartmountain has not been permitted and no planning application in relation to it has been submitted. I consider it unreasonable to expect the developer associated with this application to consider a future wind farm in terms of cumulative impacts for EIA and AA, as sufficient data is not publicly available, and there is no certainty that development will go ahead. Any new development for a wind farm at that location will be assessed in

terms of its cumulative impact on known applications in the system and/or permissions in place. I refer to EC Guidance 2021: Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC, whereby in-combination provision concerns other plans or projects that have been already completed, approved but uncompleted, or proposed (i.e. for which an application for approval or consent has been submitted).

12.0 Environmental Impact Assessment

12.1. Statutory Provisions

12.1.1. The proposed development is of a type and scale that requires environmental impact assessment under the Planning and Development Act 2000, as amended, with the development comprising one which falls within Schedule 5, Part 2, (3)(i) of the Regulations:

> Energy Industry
>
> (i) 'Installations for the harnessing of wind power for energy production (wind farms) with more than 5 turbines or having a total output of greater than 5 megawatts' require EIA.

12.1.2. The proposed development with a total of 12 no. turbines with an estimated total output in the region of 72 to 86.4 MW exceeds these thresholds and is therefore subject to mandatory EIA.

12.1.3. This section of the report comprises the environmental impact assessment of the proposed development in accordance with Planning and Development Act 2000 (as amended) and the associated Regulations, which incorporate the European directives on environmental impact assessment (Directive 2011/92/EU as amended by 2014/52/EU). Section 172 of the Planning and Development Act, 2000 (as amended) defines EIA as:

> a. consisting of the preparation of an EIAR by the applicant, the carrying out of consultations, the examination of the EIAR and relevant supplementary information by the Board, the reasoned conclusions of the Board and the integration of the reasoned conclusion into the decision of the Board, and

b. includes an examination, analysis and evaluation, by the Board, that identifies, describes and assesses the likely direct and indirect significant effects of the proposed development on defined environmental parameters, and which includes significant effects arising from the vulnerability of the project to risks of major accidents and/or disasters.

12.1.4. Article 94 of the Planning and Development Regulations, 2001 and associated Schedule 6 set out requirements on the contents of an EIAR.

12.2. Compliance with the Requirements of Article 94 and Schedule 6 of the Regulations, 2001

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, 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). It is noted that the proposal does not involve demolition works.
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 indicated in the environmental impact assessment below, I am not satisfied that the EIAR has adequately identified the significance of environmental effects with regard to biodiversity, ornithology, landscape and visual effects, and archaeology/cultural heritage.
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	The proposed development includes designed in mitigation measures and measures to address potential adverse effects identified in technical studies. These, and arrangements for monitoring, are summarised in Appendix 17.1 (Schedule of Mitigation and Monitoring

on the environment of the development (including the additional information referred to under section 94(b).	Measures), Appendix 2.1 (CEMP) and Appendix 6.4 (Habitat Management Plan). Mitigation measures are largely capable of offsetting significant adverse effects identified in the EIAR, except in respect of the matters raised in respect of biodiversity, ornithology, landscape and visual effects, and archaeology/cultural heritage within the EIA hereunder.
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, strategic site selection, alternative renewable energy technology, alternative turbine numbers and model, alternative layout and design, alternative transport route and site access and alternative mitigation measures. The main reasons for opting for the current proposal were based on minimising environmental effects. I note alternatives considered at the early stages evolved under the previous development plan for the county and in selecting the site the previous 'open for consideration' option is no longer applicable to this site. Consideration was subsequently had in the EIAR for the current operative plan. I am satisfied 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 and 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	The methodology employed in carrying out the EIA, including the forecasting methods is set out, in each of the individual chapters assessing the environmental effects.

difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information, and the main uncertainties involved	The applicant has indicated in the different chapters where difficulties have been encountered (technical or otherwise) in compiling the information to carry out EIA. I comment on these, where necessary, in the technical assessment below and for the reasons stated, I am not satisfied that forecasting methods are adequate in respect of likely effects to biodiversity, ornithology, \landscape and visual effects, and archaeology/cultural heritage.
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 specifically dealt with in Chapter 5 and Chapter 17 in addressing the project's vulnerability to stability issues and slope failure, flooding and fire. These risks are reasonable and are assessed in my report.
A summary of the information in non-technical language.	This information has been submitted as a separate standalone document (Vol 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. I consider the sources relied upon are generally appropriate and sufficient except in relation to concerns raised in respect of biodiversity, ornithology, landscape and visual effects, and archaeology/cultural heritage.
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 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.

12.2.1. The EIAR is laid out as follows.

- Volume I: Non-technical summary.
- Volume II: Chapters 1-17.
- Volume III: Figures.
- Volume IV: Appendices.
- Two LVIA photomontage booklets.

12.2.2. I 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 results of the submissions made by the planning authority, prescribed bodies, and observers has been set out at Sections 8-10 of this report respectively. The main issues raised specific to the EIA can be summarised as follows:

- Biodiversity and Impact on Annex I Birds and Annex I habitat
- Landscape and Visual Impact on the Immediate and Wider Area
- Material Assets –Transport

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

12.2.3. As is required under Article 3(1) of the amending Directive, the EIAR describes and assesses the direct and indirect significant effects of the project on the following factors:

(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.

It also considers the interaction between the factors referred to in points (a) to (d).

12.2.4. In compliance with the provisions of Article 5(3), the EIAR sets out the qualifications of the study team and contributors under each chapter. I am satisfied that the EIAR has been prepared by competent experts to ensure its completeness and quality.

12.2.5. This EIA has had regard to the application documentation, including the EIAR, and the observations received, as well as to the assessment of other relevant issues set out in Section 11 of this report above. This EIA Section of the report should therefore, where appropriate, be read in conjunction with the relevant parts of the planning assessment.

12.3. Likely Significant Direct and Indirect Effects

12.3.1. 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. I will address the environmental factors in the following chronology in line with that set out in the Directive:

- (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).

12.3.2. My assessment is based on the information provided by the applicant, including the EIAR, in addition to the submissions made in the course of the application, as well as my site visit.

12.4. Population and Human Health

12.4.1. This environmental topic appropriately encompasses the subject issues as raised in the EIAR Chapter 5 titled ‘Population and Human Health’ in addition to Chapter 15 titled Shadow Flicker and Electromagnetic Interference (EMI).

EIAR Overview – Chapter 5, Population and Human Health

12.4.2. Chapter 5 of the EIAR addresses population and human health under the subheadings population, economic activity and tourism, employment, topography and land-use, health impacts, property value, and natural disaster and major accidents (and associated Health and Safety Plan). Further possible interactions are

considered elsewhere under the relevant chapters of soils and geology, hydrology and hydrogeology, noise, traffic and transportation, and air and climate.

12.4.3. The methodology for assessment is described as well as the receiving environment.

Population

12.4.4. Table 5 sets out the DEDs and Townlands affected by the difference elements of the development, namely the grid connection, turbine delivery route, and windfarm site. The windfarm developable area is situated within Boremountain, Corradoon, Ballynaguilkee upper, Dyrick, Lyrattin, Ballynaguilkee lower townlands with a small portion of the site boundary falling within Scartmountain.

12.4.5. Nearby settlements include the villages of Ballynaguilkee 0.8km southeast and Curradoon 0.8km east. The 2016 Census statistics note 58 occupied residences in the Ballynamult Electoral Division (ED) and 105 occupied residences in the Modelligo ED. In 2016, the total population in the Ballynamult ED was 169. The population density of the Ballynamult ED is 8.5 persons per square kilometre. The total population in the Modelligo ED was 294. The population density of Modelligo ED was 14.4 persons per square kilometre. These population densities are significantly lower than the national average of 70.05 persons per km2.

12.4.6. The majority of developments along the Turbine Delivery Route comprise one-off houses. The active construction areas for the road works along the Haul Route will involve surface-level earthworks (removal of soil and unconsolidated rock) and will be temporary in nature. The proposed Turbine Delivery Route works associated with the proposed development will not have any long-term negative effects on population or settlement patterns.

12.4.7. Given the low level of population in the area, any impact is considered to be imperceptible in terms of population. The predicted effect on the immediate settlement patterns and social patterns is slight to non-existent. In terms of construction traffic, this would be short-term, relating primarily to an increase in construction traffic causing noise, dust, and an increase in traffic volume.

12.4.8. A traffic management plan will be developed for the installation of the Grid Connection cable in the public road network. These works will have negligible medium to long-term negative effects on the local population or settlement patterns.

12.4.9. The overall impact is predicted to be slight positive at the local level in terms of settlement patterns where increased business is attracted to the area during the operational phase.

Tourism

12.4.10. Tourism attractions within 10km of the site are identified, including Rally Connection (2.3km to the south); Maol Mor hiking area (3.5km west); in Tipperary the Liam Lynch Memorial which is linked to a local walking trail; and Mount Melleray Abbey 5km west of the site; and tourism attractions in the town of Cappoquin c.6.6km to the southeast. The Waterford Greenway, and the Comeragh Mountains, are recognised as popular walking destinations.

12.4.11. The EIAR reports on studies undertaken regarding public and tourist attitudes to wind farms, including Failte Ireland surveys in 20007 and 2012, SEAI surveys in 2003 and 2017, and Wind Energy Ireland opinion poll on wind energy in 2017-2021.

12.4.12. Effects of the development with regards to tourism are considered to be short-term, slight, negative during both construction and decommissioning phases and a long-term slight positive impact during operation.

Economy

12.4.13. The EIAR states that based on experience at other wind farms that there is expected to be a peak on site workforce of up to approximately 147 workers. During the construction and initial commissioning phase, jobs are likely to be created. It is envisaged that labour and materials will be sourced from the local area where possible. Ready-mix concrete and crushed stone will also be sourced from a local supplier, subject to quality and quantity being available. During construction it is predicted there will be a slight, positive impact on economic activity in the Region. In the operational phase, employees will use local shops, restaurants and hotels/accommodation.

12.4.14. The EIAR states that Waterford City and County Council will benefit from payments under both the Development Contribution Scheme and from the annual rate payments. A Community Fund will be established under the RESS guidelines, which will operate for the first 15 years of the windfarm in accordance with RESS

guidelines. Community benefit funds typically support local projects, with funds allocated to projects from all aspects of the community.

12.4.15. Effects on the economy during both the construction phase and the operational phase would be minor, both direct and indirect, and positive, due to the creation of job opportunities and subsequent spending of income in the local area and within Ireland as a whole. It is estimated that turnover generated by the operation and maintenance of the development could directly support 29-35 jobs in County Waterford. The overall impact is predicted to be a moderate, positive, short-term impact during the construction and decommissioning phases and moderate, positive and long-term during the operational phase.

12.4.16. Cumulatively, there is predicted to be a short-term, positive impact in terms of employment from the development, if construction periods overlap with other developments.

Land Use and Topography

12.4.17. According to the Landscape and Seascape Character Assessment (LSCA) for Waterford, the Proposed Wind Farm Site is located within the following landscape character types: Tooraneena Foothills (High sensitivity value); and Knockmealdown Uplands18 (Most sensitive value). The site is situated on relatively high ground, at elevations ranging between 150m and 430m AOD. The highest point of the site is located between the Townlands of Scartmountain and Broemountain toward the northern portion of the site.

12.4.18. The construction of the development will not have a significant effect on forestry and agriculture existing in the area and the grid connection will not affect the road network in terms of its use being retained.

Human Health

12.4.19. Common issues in terms of human health are considered in terms of electromagnetic fields, shadow flicker and noise. These topics, in addition to air quality and water contamination are considered in Chapters 9: Hydrology and Hydrogeology, Chapter 10: Noise and Chapter 15: Shadow Flicker & EMI.

12.4.20. Based on a review of international literature in section 5.4.7.8, it was found that there are no specific health and safety considerations in relation to the operation of a wind turbine.

12.4.21. Chapter 15: Shadow Flicker & Electromagnetic Interference (EMI) provides an impact assessment of the potential for shadow flicker from the Development. This is addressed separately in Section 12.4.29 and subsequent paragraphs hereunder. Impacts of shadow flicker and electromagnetic interference are considered to be very localised and it is rated as being an imperceptible, long-term impact.

12.4.22. The Board is referred to Section 12.10 hereunder in relation to noise. The noise assessment found that no properties in the study area are predicted to experience noise levels above 40dB.

12.4.23. The potential effects of the development on air quality are considered not significant.

12.4.24. In relation to soils and geology, adherence to the CEMP and to the mitigation measures outlined therein during construction, operation and decommissioning of the wind farm are recommended to ensure no significant impacts.

Turbine Safety

12.4.25. The Department of the Environment, Heritage and Local Government (DoEHLG)'s Draft Revised Wind Energy Development Guidelines December 2019 state that there are no specific safety considerations in relation to the operation of wind turbines. Fencing or other restrictions are not necessary for safety reasons. People or animals can safely walk up to the base of the turbines. The DoEHLG Guidelines state that there is a very remote possibility of injury to people from flying fragments of ice or material from a damaged blade. However, most blades are composite structures with no bolts or separate components and the danger is therefore minimised. The build-up of ice on turbines is unlikely to present problems and anti-vibration sensors on turbines detect any imbalance caused by icing of the blades. The sensors will prevent the turbine from operating until the blades have been de-iced. In extremely high wind speed conditions, (usually at Beaufort Storm Force 10 or greater) the turbines will shut down to prevent excessive wear and tear, and to avoid any potential damage to the turbine components.

12.4.26. In terms of concerns raised in relation to the impact of the materials used in turbine blades on human health, specifically bisphenol A, I note this is not an issue raised in the WEDG 2006 or 2019. I note no significant peer reviewed evidence has identified this as a significant risk in terms of emissions to air and I further note a decommissioning plan will ensure the safe removal of turbine blades from the site.

Property Values

12.4.27. Based on a review of literature from the UK and Scotland referenced in section 5.4.8, it is concluded that there will be no impact on property values.

Natural Disasters and Major Accidents

12.4.28. Potential natural disasters that may occur at the site are limited to landslide, flooding and fire. It is considered that a significant effect on human health from natural disasters affecting the wind turbine site is limited. The site is not regulated under the Control of Major Accident Hazards Involving Dangerous Substances Regulations i.e. SEVESO sites and so there is no potential effects from this source.

12.4.29. The risk of peat-slide and landslide is addressed in Chapter 8 – Soils and Geology of the EIAR. The risk of flooding is addressed in Chapter 9 – Hydrology and Hydrogeology of the EIAR. There are no areas mapped as being of low, medium or high probability flood areas within or directly down-gradient of the site (Chapter 9: Hydrology and Hydrogeology, Section 9.4.4.1). The potential therefore of increased flood risk is considered imperceptible. The risk of significant fire is stated to be limited. The spacing of the turbines and distance of turbines from any properties limits the potential for impacts on human health.

12.4.30. In terms of major accidents, impacts associated with weather, including extreme winds, lightning strikes, ice-throws, heat waves and structural failure have been removed or reduced through inbuilt turbine mechanisms in modern machinery and have been scoped out of the assessment. Potential health impacts are therefore related to decommissioning/construction related impacts and operational impacts on residential amenity.

EIAR Overview – Chapter 15, Shadow Flicker and Electromagnetic Interference (EMI)

12.4.31. Chapter 15 of the EIAR addresses shadow flicker and EMI.

12.4.32. The methodology for assessment is described as well as the receiving environment. The study area is defined as 10 times the widest potential rotor diameter within the range (10 x 162m = 1,620m). A study area of 2,000m is used for completeness. A shadow flicker computer model (WindPRO 3.6) was used to calculate the occurrence of shadow flicker at relevant receptors to the development. The modelled turbine has a rotor diameter of 162 metres, total height of 185 metres and hub height of 104 metres. I am satisfied that the methodology adopted is acceptable and the modeling can be relied upon for the prediction of impacts.

12.4.33. Shadow Flicker is only applicable during the operational phase.

12.4.34. The concern of residents in relation to shadow flicker impacts includes health effects, including impacts on those with special needs who would be very susceptible to such effects.

12.4.35. There are 112 dwellings within a 2km radius of the windfarm site. A minimum separation distance from all occupied dwellings of 740m has been achieved, with the exception of dwelling H92 which is in the ownership of a financially involved third party and which is located 710m from T09 (table 15.1 in the EIAR sets out distances to each property). The impact of Shadow Flicker on a building 320m from turbine 10 has not been assessed as a Deed of the covenant from the landowner confirming that the property will not be used as a residential dwelling from the start of construction of the Wind Farm has been included in Appendix 2.3. There are currently 111 occupied dwellings located between 740m and 2km of any proposed wind turbine location.

12.4.36. The EIAR reports on studies undertaken regarding the potential for electromagnetic interference, which over a period of 35 years have concluded that there is no long-term adverse effects on human, plant, or animal health as a result of exposure to ELF-EMF from power lines, or other electrical sources. Electromagnetic fields from wind farm infrastructure, including the grid connection and substation, are very localised and are considered to be an imperceptible, long-term impact.

12.4.37. *Likely Significant Effects*

12.4.38. Table 15.3 of the EIAR indicates there will be potential for up to 73 receptors out of 112 to experience some degree of theoretical shadow flicker impact. 39 receptors will experience no theoretical shadow flicker impact.

Mitigation Measures

12.4.39. The Draft Revised Wind Energy Development Guidelines, December 2019, recommend that shadow flicker should not impact any dwelling.

- A shadow control system will be installed on each of the wind turbines. The control system will calculate, in real-time:
    - Whether shadow flicker has the potential to affect nearby properties, based on pre-programmed co-ordinates for the properties and turbines •
    - Wind speed (can effect how fast the turbine will turn and how quickly the flicker will occur)
    - Wind direction
    - The intensity of the sunlight

12.4.40. When the control system detects that the sunlight is strong enough to cast a shadow, and the shadow falls on a property or properties, then the turbine will automatically shut down; and will restart when the potential for shadow flicker ceases at the affected properties.

Residual Effects

12.4.41. No residual effects in relation to shadow flicker or EMI are expected.

Cumulative Effects

12.4.42. Currently, there are no other wind farm developments within 2km, therefore no cumulative effects of the development. The closest wind farm development is Tierney Single Turbine which is located 3.5km northeast of the site boundary.

<u>Assessment</u>

12.4.43. A broad range of observations submitted are relevant to the topic of population and human health. The observations which are most relevant to human health relate to noise and air and health impacts due to proximity to turbines including visual effects, shadow flicker and impact on health due to operational noise. There are objections to traffic related disturbance and delays and traffic hazards arising on the selected routes for access. The photomontages are

considered insufficient and it is contended that the overall visual impact and impact on cultural heritage will be negative.

12.4.44. Construction of the proposed wind farm development would result in substantial investment in the area with employment opportunities for construction workers and secondary benefits for local services and materials providers. Given the short-term nature of the construction phase I do not consider that there would be any significant impact on the population or economy during the construction phase.

12.4.45. Reference is made to individual cultural heritage monuments and to features of cultural heritage importance. I refer the Board to Section 12.13 of this report for more detail. I refer the Board to Section 12.14 hereunder in relation to landscape and visual impact.

12.4.46. The community facilities in the area include schools and playschools. I do not consider that it is likely there would be any adverse impacts on schools in the area arise by reason of noise effects or shadow flicker, given distances involved.

12.4.47. I am satisfied that construction traffic can be managed under a CEMP and TMP to ensure no significant traffic hazards arise for road users.

12.4.48. Issues in relation to air and noise are addressed in Sections 12.9 and 12.10 respectively hereunder.

12.4.49. The concern of residents in relation to shadow flicker impacts includes health effects, including impacts on those with special needs who would be very susceptible to such effects. The Wind Energy Guidelines 2006 state that it is recommended that shadow flicker at neighbouring offices and dwellings within 500m should not exceed 30 hours per year or 30 minutes per day. The guidelines state that at distances greater than 10 rotor diameters from a turbine, the potential for shadow flicker is very low. Where shadow flicker could be a problem, developers should provide calculations to quantify the effect and where appropriate take measures to prevent or ameliorate the potential effect, such as by turning off a particular turbine at certain times. The Draft Wind Energy Guidelines further highlight that generally only properties within 130 degrees either side of north, relative to the turbines, can be affected at these latitudes in the UK and Ireland- turbines do not cast long shadows on their southern side. It is stated that the relevant planning authority or An Bord Pleanála should require that the applicant shall provide evidence as part of the

planning application that shadow flicker control mechanisms will be in place for the operational duration of the wind energy development project. The use of control modules in the turbines to address potential shadow flicker is a relatively standard feature in modern wind turbines and, given that shadow flicker effects, by their nature, lend themselves to accurate prediction, there is no reason to believe that the shut-down protocols would be ineffective in mitigating the potential impacts in the limited cases where they arise. I consider that it would be appropriate if permission is granted that a condition be attached to require the turbines be shut down as the sole means of mitigation to achieve zero shadow flicker.

12.4.50. In relation to potential for accidents/disasters, a health and safety plan will be finalised ahead of any works on site. The CEMP is an essential document to ensure maintaining appropriate health and safety guidance and therefore reduce the risk to on-site accidents occurring.

12.4.51. Following mitigation I am satisfied that there will be no residual impacts.

Conclusion

12.4.52. I have considered all of the written submissions made in relation to population and human health. I consider that the proposed development will have significant positive impacts on the local socio-economic environment. I am also satisfied that the potential for significant adverse impacts on population and human health can be avoided, managed and 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 population or human health.

12.5. Biodiversity (Terrestrial Ecology, excl. Birds)

EIAR - Overview

12.5.1. Chapter 6 of the EIAR relates to Biodiversity (excluding Birds, which is addressed in Chapter 7 Ornithology and addressed separately hereunder Section 12.5). Chapter 6 is supported by the following appendices: Appendix 2.1 Construction Environmental Management Plan (CEMP), Appendix 6-1 Statement of Authority, Appendix 6-2 Bat Report, Appendix 6-3 Target Note Survey Results 2021-2023, Appendix 6-4 Habitat

Management Plan, and Appendix 17.1 Schedule of Mitigation and Monitoring Measures.

Methodology

12.5.2. The assessment methodology includes a combination of desk top studies using recognised ecological data bases, and field surveys. Site surveys include:

- Habitat surveys completed on the 24th & 25th June 2020; 9th & 10th September 2021; 9th September 2022; 15th February 2023; and 21st March 2023. ArcGIS and ESRI Field Maps were used to collect information on vegetation and habitats during the initial Phase 1 Habitat Survey, which was completed on the 24th and 25th June 2021. A preliminary habitat map was drawn using ArcMap following the completion of the initial Phase 1 Habitat Survey. The preliminary habitat map was then further interrogated during subsequent habitat and vegetation community surveys.

- Survey for rare or protected species (none identified)

- Terrestrial mammal surveys. A survey for field signs indicating the presence of terrestrial mammals, particularly otters, were undertaken during field surveys. Camera traps (Bushnell Trophy Cam HD E3) were erected at three locations over a 10 night monitoring period. The three trail cameras, in addition to being set to trigger via heat sensitive motion detection, were set to record still photo images at one minute intervals through each night of recording. The camera traps were installed along the Farnanes Stream to the west of the proposed wind farm site, in the vicinity of the proposed turbine T4 towards the centre of the site and along the Aughkilladoon Stream, upstream of its confluence with the Finisk River and at the site entrance in the southeast of the proposed wind farm site. Figure 6.4 shows the location of camera traps. The camera trap locations were selected to provide coverage of potential otter habitat along the rivers as well as badger habitat along hedgerows within improved agricultural grassland habitat.

- Bat activity surveys during 2020, 2021 and 2022 (Appendix 6.2). Four no. bat activity manual transect surveys, and three no. roost surveys were conducted in 2021. Static detectors were placed at proposed turbine locations for three rounds in 2020 and 2021. An at height static detector was placed on the existing met mast in 2022. The surveys followed the requirements of ‘Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation’ (NatureScot 2021).

- Biological macro-invertebrate surveys were completed at four number locations along three separate watercourses that flow through and adjacent to the wind farm site. These streams are the Farnane Stream, Aughkilladoon Stream, Lisleagh Stream and the Finisk River. A biological water quality survey was undertaken. A 'Fisheries Habitat Assessment' was undertaken and the streams evaluated on this basis for salmonid and lamprey habitat. Detailed fish assessments of the Finisk River has been completed by the IFI in 2010 and 2017. Table 6.10 identifies Fish species recorded along the Finisk River during 'IFI 2017 Monitoring' of 4 sites: Site 1 was located upstream of the proposed wind farm site at Tooraneena, Site 2 was located a short distance downstream of the entrance to the proposed wind farm site at Mountain Castle Bridge; Site 3 was located at Modelligo Bridge (the same site as that used during the 2010 survey); and Sites 4 and 5 were located further downstream. Fish identified in 2017 were brown trout and salmon, with European eel identified at only Site 3. Lamprey, stone loach and three-spined stickleback were not recorded. The IFI assigned one site – Site 4 - a fish ecological status of poor. Two sites (Sites 1 & 3) were assigned moderate; and one - Site 2, which is located a short distance downstream of the proposed wind farm site entrance - was assigned good. A comparison of the 2010 and 2017 results for Site 3 indicates that the fish ecological status at this site (Modelligo Bridge) has decreased in the intervening years from Good to Moderate.

- Herpetofauna. Incidental records of herpetofauna (amphibians and reptiles) were noted during all field surveys undertaken between 2021 and 2023. Common frog (Rana temporaria) was frequently recorded with this species recorded breeding along the Farnanes Stream along the western boundary of the proposed wind farm site and also along the Lisleagh Stream to the east. The poor flush and wet grassland habitats occurring within the proposed development site provide suitable breeding habitat for common frog. Common lizard or smooth newt were not recorded during field surveys. However, the commonage area in the northwest of the proposed wind farm site provides suitable habitat for both these species and they are likely to occur within, and surrounding the Site.

- Other species, such as terrestrial invertebrates were recorded during field surveys. The prevalence of the marsh fritillary foodplant devil's-bit scabious Succisa pratensis is overall rare at the Site, with the only areas of potentially suitable habitat

occurring in wet grassland habitat to the west and outside of the proposed wind farm footprint. Given the absence of suitable habitat occurring within the footprint of the proposed wind farm layout no dedicated surveys for marsh fritillary butterfly were completed.

- A habitat survey of each of the three locations along the haul route (Belview Port to the site) where widening is to occur was completed during March 2023.

12.5.3. Concerns are raised in submissions in relation to the timing of the bat surveys. I have reviewed the detail of the methodology submitted in Appendix 6-2, noting there were access issues to some of the buildings which account has been taken of. The surveys generally cover July, August, and September of 2020, 2021 and 2022. The impact assessment and mitigation provided in the bat report are in accordance with SNH 2019 Guidance[1]. I do not consider that the access issue to some of the buildings invalidates the overall results. I note the buildings are not to be utilised or affected as part of the proposed development. Where restoration of buildings are to take place, this is subject to various mitigation measures.

12.5.4. Overall, I consider the methodologies and survey timelines related to the biodiversity surveys to be appropriate.

Baseline Receiving Environment

12.5.5. The site is located within an area of farmland (dairy and sheep), forestry and upland heath, with a low density spread of rural dwellings.

12.5.6. The main part of the application site where the wind turbines are proposed is not located within or adjoining any European sites. The proposed grid connection route and haul route do intersect with the Blackwater River (Cork/Waterford SAC) which is also connected to Dungarvan Harbour SPA.

12.5.7. Watercourses include the Farnane River, the Lisleagh Stream and the Aughkilladoon Stream. These are the main surface water bodies that drain the site. The Farnane River rises near the north-western extent of the site and flows along the western extent of the site. The Lisleagh Stream rises in the central portion of the site and flows in a south-easterly direction. The Aughkilladoon Stream rises at the south-

[1] Scottish Natural Heritage (2019) *Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation.* Note*:* document was undated in August 2021 with minor revisions.

eastern extent of the site and flows in a south-easterly direction. All of these surface waters are tributaries of the Finisk River which flows to the east and south-east of the application site. The Finisk River is a large tributary of the River Blackwater SAC. The Blackwater River and Estuary pNHA is also hydrologically connected to the development. The grid connection route intersects the Colligan River. This river drains to the Dungarvan Harbour SPA and pNHA. The likely effects, direct and indirect, of the proposed development on species and habitats for which European sites within the zone of influence of the site are designated is considered in Section 13 of this report relating to Appropriate Assessment, which informs the conclusions of this EIA.

Habitat

12.5.8. Table 6.5 of Chapter 6 of the EIAR identifies the habitats across the site. The wind farm site comprises improved agricultural grassland (44.92%), wet grassland (11.86%), dry acid grassland (9.92%), conifer plantation (9.75%), heath/grassland/bracken mosaic (7.85%), and dry heath (7.75%). Other habitats on site are dense bracken (2.49%), buildings and artificial surfaces (1.83%), scrub (1.62%), poor fen and flush (1.02%), broad-leaved woodland (0.63%), mixed woodland (0.32%), and recolonising bare ground (0.04%). There is an elongated area of Coillte lands within the centre of the site which are excluded from the site boundary. Table 6.11 gives an 'Evaluation of Ecological Features Identified at and surrounding the Development' with key ecological receptors identified, while Table 6.12 sets out an 'Assessment of Estimated Habitat Loss at the Site' of those key ecological features.

12.5.9. Table 6.6 identifies those habitats within the site associated with EU Annex I Type habitats, which includes dry heath and wet heath. Figure 6.7 identifies Article 17 Dry Heath Habitat, and figure 6.8 Proposed Wind Farm Site Habitat Map specifies the habitat found following detailed surveys. Expanses of dry heath habitat occurs within the Broemountain commonage area of the site to the west of the site and there is Lisleagh Wetland area to the east of the site.

12.5.10. The EIAR states that a peat stability risk assessment (PSRA) has not been prepared due to the absence of observed peat at the site during the site surveys

which are discussed in the Chapter 8: Soils and Geology. Peat was noted on the maps but not found during the geophysical surveys.

12.5.11. As well as the Farnane River, the Lisleagh Stream and the Aughkilladoon Stream, the site is drained by a network of artificial drainage ditches, many of which are located adjacent to field boundaries, particularly in the central and western extents of the site. A number of small natural and artificial drains also exist at the western commonage area. Two potential wetlands exist at the site located east and west of the proposed T04 position. The EIAR states that the Map of Irish Wetlands (2021) identifies these locations as “Other/Unsurveyed”, and that during site surveys highly saturated ground was evident at these locations.

12.5.12. Horizontal directional drilling will be used at three locations to cross watercourses along the grid connection route. The EIAR states that at these bespoke locations the electrical cable ducts will be drilled underground below the watercourses.

Fauna

12.5.13. Appendix 6.2 comprises a Bat Survey Report (June 2023). Surveys were undertaken in 2020, 2021 and 2022 in line with SNH Guidelines. Bat transect surveys recorded three bat species and static surveys recorded eight species. For the northern turbines (T03, T04, T05, T06, T08, T10, T11, T12, T13), the EIAR states that the bat landscape association model (Lundy et al., 2011) suggests that the development is part of a landscape that is of low-moderate suitability for all bats. For the southern turbines (T01, T02, T03), the bat landscape is of moderate-high for all bats. Potential roost habitats were examined. 5 structures surveyed were confirmed to function as bat roosts (see Figure 3.1 of Appendix 6.2). 5 trees were identified as supporting moderate value Potential Roost Features (PRFs), and a total of 12 trees were identified as supporting low value PRFs (see Figure 3.25 of Appendix 6.2).

12.5.14. Otters are supported by the Finisk River. The lower sections of the Lisleagh Stream and the Farnane Stream to the east and west of the proposed development site also provide suitable foraging habitat for otters. The upper sections of these streams, near their sources to the east and west of the proposed wind farm site provide limited foraging habitat for otters owing to the spate conditions and variable

flow rates in these upper sections. Surveys undertaken found no evidence indicating the presence of otters, their holts or couches along the streams/rivers within the site.

12.5.15. No badgers or their setts were observed during field surveys within the proposed wind farm site. All hedgerows occurring within a 50m buffer zone of the proposed wind farm access track were searched for the presence of badger sett entrances and none were recorded.

12.5.16. The poor flush and wet grassland habitats occurring within the proposed development site provide suitable breeding habitat for common frog. Common lizard or smooth newt were not recorded during field surveys. The commonage area in the northwest of the proposed wind farm site provides suitable habitat for both these species and they are likely to occur within, and surrounding the site.

12.5.17. The EIAR states that the commonage area of Broemountain is the only area within the proposed wind farm site where the marsh fritillary larval foodplant, Succisa pratensis, occurs. No incidental observations of marsh fritillary were recorded at the proposed wind farm site during field surveys. The small heath butterfly was recorded as was the orange tip, small tortoiseshell, common blue, green-veined white, meadow brown, ringlet and small white. The heath bumblebee Bombus jonellus was also recorded.

Aquatic Species

12.5.18. The three streams through the site were subject to habitat assessment.

12.5.19. The EIAR described each of the watercourses as being representative of upland spate rivers, characterised by fast water flow and incised banks. The habitat rating applied in the EIAR to each of the three watercourses is provided in line with the guidance outlined in Department of Agriculture's (Northern Ireland) Fisheries Division Advisory Leaflet "The Evaluation of Habitat for Salmon and Trout". The three streams are stated to be not representative of optimal spawning or nursery habitat for salmonids. Reference is made to the 1st order nature of these streams along with their propensity for variable flow rates and the drying out of sections of river bed during periods of drier weather conditions which are identified as the principal factors reducing the potential to support salmonids. The Finisk River, downstream of the proposed wind farm site, is representative of a salmonid watercourse and provides suitable spawning, nursery and holding habitat for salmonids. Detailed fish

assessments of the Finisk River has been completed by the IFI in 2010 and 2017. The fish species recorded during the 2010 monitoring comprised Atlantic salmon, brown trout, eel and lamprey species. The river was classified as a “fast” growth rate river for brown trout. The 2010 fish ecological status of the Finisk River at the survey site was classified as Good. Three fish species were recorded at five sites surveyed on the Finisk River in 2017. Brown trout and salmon were the most abundant species captured. Brown trout density was higher in 2017, when compared with 2010 and 2014, however, the opposite was observed for salmon. A comparison of the 2010 and 2017 results for Site 3 (Modelligo Bridge) indicates that the fish ecological status at this site has decreased in the intervening years from Good to Moderate.

12.5.20. I note that figure 6.3 refers to ‘Biological Macroinvertebrate Sampling Locations’ and four survey locations are identified, along the Farnane River, Lisleagh Stream, Aughkilladoon Stream, and the Finisk River. The biological water quality survey was based on the Biotic Index or Q-value system as outlined by the EPA (McGarrigle, 2002), with Q4 and Q5 values applied. The results of Aquatic Surveys are indicated in table 6.7, where the WFD status for all four rivers if Good with salmonid suitable in the Farnane River and the Finisk River, with limited suitability in Lisleagh Stream and no suitability in the Aughkilladoon Stream due to low flows and drying out. No Margaritifera (freshwater pearl mussel) sensitive areas were identified.

Invasive Species

12.5.21. Two non-native invasive species were identified within or adjacent to the proposed development site. These include Cherry laural Prunus laurocerasus, stands of which are located outside the proposed wind farm site layout to the north of the proposed turbine T9 and Japanese Knotweed Fallopia japonica which is located along a section of the public road that is located within the proposed development site redline boundary and also at another location along the public road at a haul route widening location.

Ecological Receptors to be Assessed

12.5.22. Table 6.11, in Chapter 6 of the EIAR lists key ecological receptors identified for the assessment as being:

- the Blackwater River SAC & Blackwater River & Estuary pNHA (international importance),
- dry heath and wet heath (national importance),
- non calcareous spring (local importance higher value),
- rich flush (county importance),
- poor fen (county importance),
- acid grassland (local importance higher value),
- wet grassland (local importance higher value),
- broad leaved woodland and mixed broadleaved woodland (local importance higher value),
- scrub (local importance higher value),
- otters (international importance),
- bats (local importance higher value),
- badgers (local importance higher value), and
- red squirrel (local importance higher value),
- irish hare (local importance higher value),
- irish stoat (local importance higher value),
- hedgehog (local importance higher value),
- pygmy shrew (local importance higher value),
- herptofauna (local importance higher value),
- invertebrates (local importance higher value), and
- fisheries of the Finisk River (international importance). The Finisk River is an important salmonid spawning and nursery river and supports populations of lamprey species, which are species listed as Annex 2 qualifying species of the River Blackwater SAC.

EIAR - Potential Effects

Do Nothing Scenario

12.5.23. In a do nothing scenario the majority of the site would continue to be managed as commercial forestry and for agriculture. The general biodiversity would remain similar to that recorded, though it is noted that there is overgrazing to the west of the commonage area which is undermining the favourable status of acid grassland and the overall area of dry heath, therefore it is assumed that this would continue to deteriorate in a do nothing scenario.

Construction Phase, Likely Significant Effects (Direct and Indirect)

12.5.24. Construction phase impacts arise as a result of the following works:

- Clearance of existing vegetation during the construction activities, with excavation and removal of habitats for the construction of access tracks, hardstand areas and turbine foundations and substations, as well as temporary facilities of temporary construction compound, blade set-down areas and turbine hardstands.
- Electrical cable will result in excavations along the public road corridor between the proposed wind farm site and the substation at Dungarvan.
- Haul route from Belview Port to the proposed wind farm site will require temporary widening at three locations to allow a load bearing surface.

12.5.25. Estimates of habitat loss are provided within Table 6.12. The proposed development will result in the loss of:

- 4.87 Ha (11.44%) dry acid grassland,
- 3.4 Ha (10.23%) dry heath,
- 2.8 Ha (6.7%) conifer plantation,
- 12.06 Ha (6.26%) improved agricultural grassland,
- 0.55 Ha (5.13%) dense bracken,
- 1.51 Ha (4.5%) heath/grassland/bracken mosaic,
- 0.26 Ha (3.71%) scrub, and
- 0.58 Ha (1.14%) wet grassland.
- Additional works along the Turbine Delivery Route will result in the removal of trees as well as the trimming of branches along the corridor of the route.

12.5.26. I refer the Board to Section 13 hereunder for assessment of the potential effects on designated sites.

12.5.27. Turbines 9-13 are located in the area of Dry Heath identified in Figure 6.7. From figure 6.8, following site survey, T11-T13 are in areas identified as dry heath; T10 is in an area classified as dry acid grassland and wet grassland; T09 is in area of improved agricultural grassland and hedgerows; T01-T02 are on improved agricultural grassland; T03 and T04 are in areas of improved agricultural grassland; and T05, T06 and T08 are in an area of conifer plantation. The borrow pit is on dry acid grassland in the commonage area of Broemountain. The road infrastructure affects also affects habitat loss across the range of habitats identified.

12.5.28. The most significant loss is the direct loss of Annex I Dry Heath habitat. It is stated in the EIAR that the Dry heath habitat will be impacted upon by the access track between the proposed turbine T10 and T13 and the proposed turbine T10 to T13 inclusive and associated hardstands. The overall area of Article 17 dry heath habitat occurring at Broemountain (see Figure 6.7) measures approximately 100 Ha and the proposed wind farm site layout occurring within this polygon measures approximately 7 Ha. However, it is stated in the EIAR that following habitat and vegetation surveys at the site, an accurate area of dry heath habitat of 33 ha (as opposed to 100 ha) was identified, as per Figure 6.8. It is stated in the EIAR that the proposed development will result in the loss of approximately 3.5 ha of Annex 1 dry heath habitat at the local level, which represents c. 10% of the extent of this habitat occurring within the proposed wind farm site. This extent of loss of Annex 1 habitat is representative of a significant, permanent negative impact at the local scale and has the potential to result in impacts at the national/international scale. The proposed development will have the potential to contribute an additional loss of 0.003% of this habitat at the national level. Given the current inadequate status of the reference area for this habitat, any loss of dry heath habitat as a result of the proposed development will have the potential to result in a significant negative effect, at the national/international scale.

12.5.29. Other direct loss identified relates to Acid Grassland. Approximately 11% of the area of this habitat (4.8 ha) occurring within the proposed development site will be lost due to access traps and the proposed borrow pit. It is noted that this is an already disturbed habitat due to grazing pressure and scrub/bracken encroachment

and that this habitat is widespread in the wider area. The impact is rated as being a moderate negative effect at the local scale.

12.5.30. The loss of wet grassland (local importance, higher value) as a result of access track to T01/T02, access track to T04, and T10 hardstand area. It is noted that this habitat is widespread in the wider area. The impact is rated as being a slight negative effect at the local scale.

12.5.31. Scrub will be lost so as to provide for a bat buffer zone at T09, T06 and T05 and from access track to T09. The scrub loss is rated as not resulting in a significant effect to the conservation status of this habitat at the local scale.

12.5.32. Treeline loss of 132.5m is identified as being required for a bat buffer around T04. The loss of this small length of treeline will represent a slight negative impact.

12.5.33. Hedgerow loss of 1.38km (of total 25.6km hedgerow) is identified due to access tracks and additional loss of 930m of hedgerow due to removal of that occurring within the buffer zone of c 100m surrounding turbines to minimise interactions between bats and operating turbines. The loss of approximately 2.31km of this habitat will represent a significant negative effect at the local scale.

12.5.34. No significant impacts are identified along the widening of the haul route or along the Grid Connection Route. The installation of the Grid Connection cable ducting will not require any instream works as the cable cross watercourses using horizontal directional drilling. The launch pits and receptor pits will be positioned within the road corridor and as such will not result in the loss of any semi-natural habitats.

12.5.35. No other direct habitat loss during the construction and decommissioning phases, other than those listed above, have been identified.

12.5.36. In terms of impact on streams, no direct impacts are identified. A new crossing of the Aughkilladoon Stream is proposed along the access track. This is proposed to be a clear span bridge, requiring no instream works or modifications to the watercrouse, and will be constructed in line with standard Inland Fisheries Ireland requirements. However, the provision of the new crossing at the wind farm site will have potential indirect effects arising from a risk of the loss of contaminants, such as suspended solids, hydrocarbons or cementitious materials, to this

watercourse. No new watercourse crossings are required as part of the Grid Connection route or the Haul Route. However, there are potential indirect effects from works in the vicinity of watercourses and drains include potential perturbations to water quality.

12.5.37. In terms of bats, no direct loss of habitat or roost sites are identified. Potential indirect effects on bats relate to the loss of habitat that may be used bats for roosting, foraging or commuting.

12.5.38. With regard to otters, as no holts, couches or field signs indicating the presence of an otter breeding/resting site were recorded, no direct significant negative effects are identified.

12.5.39. No setts, breeding or resting places of badger or other protected non-volant mammals were recorded during field surveys.

12.5.40. The loss of vegetation ground cover could result in the loss of potential foraging and commuting/shelter habitat for badgers and other protected non-volant mammals, with this loss rated as a permanent negative impact of slight significance at the local scale. Potential will exist for indirect impacts to the conservation status of otters within the Blackwater River SAC, by way of reductions in the abundance of prey species should a pollution event occur.

12.5.41. In the absence of mitigation measures, there is potential for significant temporary impacts to herpetofauna at the local level.

12.5.42. Impacts on terrestrial invertebrates are considered temporary moderate negative where infrastructure is reinstated post construction e.g. proposed site compound, temporary construction areas. Impacts on terrestrial invertebrate habitat are assessed as permanent moderate negative where infrastructure remains post construction. Potential indirect effects on terrestrial invertebrates during the Construction and Decommissioning Phase are associated with disturbance. Given the limited likely effective disturbance distance for these species and the extensive area of suitable habitat for them in the wider area the potential indirect effects on terrestrial invertebrates during the construction phase are not considered to be significant.

12.5.43. There is potential for direct effects associated with the spread of a scheduled invasive alien species during the construction phase.

12.5.44. The potential for ground instability/slope failure has been identified. In the event of slope failure the potential will exist for the conveyance of significant quantities of sediment to the Farnanes, Aughkilladoon or Lisleagh Stream and on downstream to the Finisk River. Whilst the possibility of a slope failure at the wind farm site has been assessed (see Appendix 8.1) to be representative of a low risk, poorly managed construction activities (including traffic movement) can increase the risk. Any slope failure which occurs will be localised due to the topography of the site. However, given the hydrological pathway to European Sites and the important status of the Finisk River subcatchment downstream for sensitive aquatic fauna such as Atlantic salmon and otters, any slope failure will have the potential to result in significant long-term damage to freshwater habitats and the potential to result in significant negative impacts to invertebrates, plant life and on all life stages of salmonid fish, specifically Atlantic salmon and brown trout, from suspended solids, silt and increased turbidity.

Operational Phase, Likely Significant Effects (Direct and Indirect)

12.5.45. No significant operational effects are identified. Potential indirect effects in relation to European sites are discussed in detail in Section 13 of this report.

12.5.46. Consideration has been given to indirect pollution effects from sediments and hydrocarbons from increased hardstanding areas and increased rate of surface water run-off, and mineralogy of materials used, leading to deterioration of surface water and supporting habitat quality and exacerbation of erosion. Unmitigated, the potential for indirect effects on watercourses resulting from the operational phase is considered to be significant at the local scale.

12.5.47. The EIAR states that the operational phase has the potential to result in enhancement of the surrounding areas within the site and within the Habitat Management Plan area through habitat rehabilitation management (as described in the Habitat Management Plan, Appendix 6.4).

Decommissioning Phase

12.5.48. Impacts during the decommissioning phase are similar to those identified during the construction phase but of lesser scale and magnitude. There would be no additional or ancillary impacts.

Cumulative Impacts

12.5.49. Cumulative impacts are considered in terms of past land use management regimes. Dry heath and acid grassland habitats have been historically overgrazed which has led to damage and erosion to heath and grassland habitats to the west of the Site. The presence of extensive forestry to the east and north has also resulted in the conversion of heathland habitats and the loss of areas of heath habitat. In the absence of future habitat management measures, the EIAR indicates that the development will have the potential to combine with these historical land use activities to result in further loss of heath habitats. Proposed habitat enhancement measures such as the implementation of and commitment to appropriate grazing regimes and the rehabilitation of dry heath habitat will have the potential to reduce the cumulative impact.

12.5.50. The EIAR states there are no significant projects permitted in the vicinity of the site. Recently permitted projects are identified and considered to be minor in scale, with no significant cumulative impacts identified.

EIAR Mitigation Measures

Construction Phase – Mitigation Measures

12.5.51. A Construction Environmental Management Plan (CEMP) is to be prepared and implemented (see Appendix 4-4). Best practice construction methods are to be applied. An Ecological Clerk of works is to be retained to oversee all mitigation measures proposed and the implementation of a site-specific CEMP. The ECoW will be responsible for completing preconstruction surveys and supervising construction works and advising on the implementation of biodiversity enhancement measures that will be commenced during the construction phase.

12.5.52. An extensive list of construction mitigation measures is set out in section 6.7.1 of the EIAR.

12.5.53. A detailed surface water management plan has been drawn up which sets out the measures to protect **water quality** during construction and to avoid water-based

erosion and avoid/minimise the risk of a slope failure event. Specific mitigation is provided in Chapters 8 and 9 of the EIAR, relating to hydrology/hydrogeology and soils and geology respectively. I refer the Board to Section 12.7 and 12.8 of this report. In addition, a specified methodology has been prepared for the one proposed water crossing of the Aughkilladoon Stream and three crossings of the grid connection route. A 50m buffer during the construction phase is also provided for between the infrastructure and existing watercourses.

12.5.54. In relation **to Dry Heath Habitat** it is stated that mitigation by design has been utilised to minimise as much as possible the potential loss with mitigation measures for the construction phase set out to ensure no further losses through control of where machinery is used and outlining specific no go areas. A Habitat Management Plan is provided in Appendix 6.4 and comprises mitigation to off-set the proposed loss of Annex I habitat:

- Restoration of remaining areas of dry heath and unimproved acid grassland through control of grazing and enhancement of an area of approximately 12 ha of dry heath habitat and also through appropriate grazing management of approx. 8ha within the Lisleagh Mountain Wetland site (Site Code: 173) to enhance poor fen habitat at that location.

12.5.55. In relation to **hedgerow loss**, planting of native species of local Waterford/Irish provenance will be provided to offset the loss of approximately 1.38km of hedgerow. The corridors of proposed new hedgerow planting are outlined in Appendix 6.4 and amount to approximately 3.65km of new hedgerow. The planting of this hedgerow will result in an overall net increase of approximately 1.3km of hedgerow habitat.

12.5.56. Proposed biosecurity measures and best practice is proposed to prevent the introduction or spread of **invasive alien species**. A pre-construction survey will be undertaken during the optimal growing season and a report will be produced in relation to the best course of action to be implemented, in accordance with best practice management guidelines as set out in the TII guidelines “The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads” (2010). Control measures are listed in section 6.7.1.2.2 of the EIAR.

12.5.57. In relation to **mammals**, a pre-construction survey of the construction footprint in order to confirm the continued absence of mammal breeding and resting places within the construction footprint and within 50m of the construction footprint or identify the presence of newly established breeding/resting places. Based upon the results of these surveys, the ECoW will establish whether or not there is a need at that stage for the implementation of further mitigation measures and the requirement for protected species licences. An example of where such a need could arise is where a badger sett becomes established along or in the immediate vicinity of a hedgerow that will be intersected by the proposed access track.

12.5.58. To protect **bats**, retained trees should be protected from root damage by an exclusion zone of at least 7 metres or equivalent to canopy height. No structures will be demolished as part of the construction phase of the proposed development and there will be no disturbance to confirmed bat roost structures occurring within and adjacent to the proposed wind farm site boundary. A buffer zone has been calculated for each turbine on basis of bat surveys and existing woodlands. (see table 5.1 of Appendix 6.2). An ecologist/ECoW will supervise areas where vegetation, scrub and hedgerow removal will occur prior to and during construction as appropriate, to ensure that any site-specific issues in relation to wildlife not currently present (e.g., Bat roost locations) on site will be discovered prior to commencement of works to allow appropriate mitigation measures to be put in place. Hedgerow and treeline planting will be carried out to reinstate or replace linear habitat loss to ensure no net loss of these habitats occurs. Hedgerow maintenance will not be carried out between the 1st of March and 31st of August as this is the nesting period for birds and any maintenance at this time will disturb breeding; this is in keeping with the Wildlife Act 1976 (as amended). Construction operations within the wind farm site will take place during the hours of daylight where possible to minimise disturbances to faunal species at night. Where lighting is required, directional lighting (i.e. lighting which only shines on work areas and not nearby countryside) will be used to prevent overspill. If three years lapse from between planning-stage surveys in 2021 and installation of the wind turbines, it will be necessary to repeat one season of surveys during the activity period. Future survey work will be completed according to best practice guidelines available (SNH, 2019/ 2021; Hundt, 2012 & Collins, 2016). The old ruined stone cottage at roost site 3A was in a very dilapidated state.

Enhancement works will be carried out under the full supervision of an experience bat specialist and under the conditions of a derogation licence.

12.5.59. **Pre-construction surveys** of the construction footprint during spring (late February / March / early April) ahead of the proposed works to be undertaken in order to identify any key amphibian breeding areas. This will allow wildlife barriers to be installed where necessary to minimise impacts upon such features where these are likely to be indirectly affected by the works.

Operational Phase - Mitigation Measures

12.5.60. An extensive list of operational mitigation measures is set out in section 6.7.2 of the EIAR.

12.5.61. The following measures are listed to ensure the ongoing protection of watercourses:

- Re-seeding / re-vegetation of all areas of bare ground or the placement of Geo-jute (or similar) matting will take place as practically possible at the start of the operational phase to prevent run-off.

- Silt traps erected during the construction phase within roadside and artificial drainage will be replaced with stone check dams for the lifetime of the project. These stone check dams will only be placed within artificial drainage systems such as roadside drains and not natural streams or ditches.

- A full review of construction stage temporary drainage will be undertaken by the Developer (in conjunction with the Project Hydrologist/ Site Engineer and the Project Ecologist) following the completion of construction, and drainage removed or appropriately blocked where this will not interfere with infrastructure.

- The Temporary Construction Compound / office must house all chemicals within a secure bunded COSSH store for the operational phase of the project.

12.5.62. Mitigation in relation to bats is proposed in sections 6.7.2.1.2 and 6.7.2.2 and in Appendix 6.2 of the EIAR:

- Turbine blades spinning in low wind can kill bats, however bats cannot be killed by feathered blades which are not spinning (Horn et al., 2008). The feathering of turbine blades combined with increased cut-in speeds have been shown to reduce

bat fatalities by up to 50% (SNH 2021). As such, the feathering of blades to prevent 'idling' during low wind speeds is proposed for all turbines.

- A focused curtailment regime is proposed from the year two of operation. This will focus on times and dates, corresponding with periods when the highest level of bat activity occur within the Site. This includes the use of the SCADA (Supervisory Control and Data Acquisitions) operating system (or equivalent) to only pause/feather the blades below a specified wind speed and above a specified temperature within specified time periods. Monitoring of curtailment will occur in year 3 and depending on the results will continue in year 5, 10 and 15.

- Post-constructions surveys will be undertaken for the first three years of operation to confirm if blanket curtailment restrictions can be amended in line with post-construction activity levels. The post construction surveys will be used to update the current curtailment regime (blanket curtailment) designed around the values for the key weather parameters and other factors that are known to influence collision risk. This will include all of the following: • Wind speed in m/s (measured at nacelle height) • Time after sunset • Month of the year • Temperature (ºC) • Precipitation (mm/hr).

12.5.63. Measures are proposed in the Habitat Management Plan for restoration of habitats.

EIAR Residual Impacts

12.5.64. There will be an overall loss of approximately 31 Ha of habitat to the footprint of the proposed wind farm. Short term residual impacts are identified hereunder for specific habitats, with long term impacts stated to be offset through the full implementation of mitigation measures, and successful implementation of the proposed Habitat Management Plan. Table 6.15 of the EIAR sets out in full an 'Assessment of Residual Impacts'.

12.5.65. Dry Heath, Annex I Habitat - Residual impacts are identified in relation to Dry Heath (Annex I habitat), with permanent loss of this habitat. This is stated to be a significant, short to medium term impact on dry heath habitat of international importance at the international scale. The long-term residual impact will be dependent upon achieving the targets set out in the Habitat Management Plan, with a proposal for a net increase in the area of dry heath habitats occurring within the

proposed development boundary, which when achieved will contribute towards an increase of the favourable reference area of this habitat, with the potential for positive, long-term effects for this habitat at the international scale.

12.5.66. Hedgerows - Residual impacts in relation to loss of 1.38km of hedgerow are stated to significant, short to medium term impacts on hedgerow habitat of local importance at the local scale. The long-term residual impact will be dependent upon achieving the targets set out in the Habitat Management Plan through the provision of a net increase in the length of hedgerow habitats occurring within the proposed development boundary.

12.5.67. Wet Grassland - Residual impacts on wet grassland are predicted with a permanent loss of c.0.58 ha of species poor wet grassland, which post mitigation will result in a slight, short to medium term impact on wet grassland of local importance at the local scale. Implementation of the Habitat Management Plan has the potential to offset the loss of wet grassland habitat through the enhancement and management of wet grassland and poor flush habitats at the Lisleagh Mountains Wetland site over the lifetime of the operation phase of the proposed wind farm.

12.5.68. Acid Grassland - Residual impacts arise with the permanent loss of acid grassland which will result in a significant, moderate, short to medium term impact on acid grassland habitat of local importance at the local scale. Implementation of the Habitat Management Plan has the potential to offset the loss of acid grassland to the footprint of the proposed wind farm through the provision of a net increase the area of acid grassland habitats occurring, which will also have the potential to contribute towards an increase on the FRA of this habitat, with the potential for positive, long-term effects for this habitat at the international scale.

12.5.69. Overall, it is stated that the successful achievement of the targets set out in the Habitat Management Plan will have the potential to offset losses to dry heath, hedgerows, wet grassland, and acid grassland.

Assessment of Likely Significant Effects

12.5.70. I have examined, analysed and evaluated Chapter 6 of the EIAR, all of the associated documentation and submissions on file in respect of biodiversity. I am not satisfied that the key impacts in respect of likely effects on biodiversity, as a consequence of the development have been fully addressed.

Habitat Loss

12.5.71. The key direct effect and identified residual effect of the development will be loss of Annex I habitat, Dry Heath, which is of national and international importance. The EIAR highlights that the proposed development will result in the loss of approximately 3.5 ha of Annex 1 dry heath habitat at the local level and considers that the impact can be mitigated through the Habitat Management Plan. The main mitigation measure proposed is to improve/enhance an area of 12 ha of existing overgrazed and scrub area to restore it to a quality dry heath habitat, thereby resulting in a stated net increase of this habitat, with residual impacts rated as significant, short to medium term impact on dry heath habitat of international importance at the international scale. Through appropriate grazing management of approx. 8ha within the Lisleagh Mountain Wetland site (Site Code: 173), it is proposed to enhance poor fen habitat at that location as a separate mitigation measure.

12.5.72. I refer the Board to the submission from the DHLGH (summarised in Section 9.2 above). The Department submission raises particular concern in relation to impact of proposed turbines 8-13 and associated infrastructure on the habitat in the area. It highlights that the elevated open exposed nature of Broemountain supports a mosaic of upland habitats and species over this site and the wider area, which are nationally declining. The area forms a significant block of habitat on the eastern extent of the larger Knockmealdown area which is important for a range of open country species. Species referred to and of particular concern to the Department include the hen harrier and golden plover (I refer the Board to section 12.5 hereunder in relation to birds). The presence of supporting habitat of Nardus acid grassland, which has close links to Annex I habitats, is also stated to be indicative of an area of ecological value (loss of 4.8 ha of this habitat predicted; EIAR states that it is already disturbed and under pressure through grazing pressure and scrub/bracken encroachment). The Department submission states that in the Broemountain area suitable hen harrier and golden plover habitat occurs in a long band of c. 400m width and due to the proposed turbine layout, it is considered that this entire band of habitat will become unsuitable for these birds, or at best will be severely compromised. The Department predicts that it is likely this eastern portion of the Knockmealdown habitat complex will be lost, with such impacts likely to be

further increased if proposals for the Knocknanask area (Scart Mountain Wind Farm) also proceed.

12.5.73. The Department considers that while mitigation is proposed via restoration habitat, changes in land management could also achieve this without the permanent removal of existing quality habitat. It is noted that degradation of habitat through farming practices will likely change in the future with regulations and incentives and in that way the habitat will likely be restored anyway.

12.5.74. 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. 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 comment highlighting that scale is important in conserving these species and it is important that they can range over large undisturbed areas and alternate between species of habitat which for various reasons may become temporarily unsuitable but will at a later stage be used again.

12.5.75. While improvements to the existing habitat are being proposed, and it is noted there has been a continual deterioration in the quality of this dry heath habitat over recent years due to poor management and overgrazing etc, I do not consider the further removal of the habitat and its mitigation by improvements to existing degraded areas is a sufficient mitigation measure or can be considered a net gain for biodiversity. The consideration that these habitats are unsuitable for hen harriers and golden plover is disputed by the Department. I consider the assessment and implication of habitat removal in this case, when viewed in the context of the ecosystem of this area, and in the context of a national biodiversity crises, would be detrimental to the environment. Having regard to the quality of the habitat in 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 Department, 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. This issue will be discussed further in relation to the hen harrier and golden plover in Section 12.6 hereunder.

Survey Methodology

12.5.76. A number of observations raise concerns with regard to the assessment of biodiversity, querying the adequacy of the baseline survey works and consequent assessment, specifically in relation to bats. Observations submitted include detailed comments from the Department of Housing Local Government and Heritage (DHLGH) in relation to Dry Heath and bird species of conservation concern, with concerns also in relation to the methodology associated with birds (I refer the Board to Section 12.6 hereunder in relation to bird methodology).

12.5.77. I note the surveys relating to bats (Appendix 6.2 of the EIAR) were undertaken in accordance with SNH 2019 Guidance[2]. Bat surveys undertaken include roost survey, manual transect surveys and ground-level static surveys. The following limitations in terms of bat surveys are noted in the EIAR: Difficulties inherent in assigning all bat calls to species level; the sensitivity of bat detector equipment to the calls of different bat species, with calls of some species more easily detected (e.g Leisler's bat) that others (e.g. brown long-eared bat). I note observer concerns that limitations were also present in the level of access to internal farm buildings discussed in section 4.4 of Appendix 6.2. I note no works to the buildings in question are proposed and this limitation, as well as others identified, are unlikely to have been a significant impediment to the assessment of likely effects of the development on biodiversity. Section 4.4 of Appendix 6.2 states 'All of the confirmed roost buildings are outside of the direct footprint of the proposed turbines, and will be left intact during wind farm construction and operation'. It is further noted that it would provide long-term mitigation for the bat populations if portions of some of the

[2] Scottish Natural Heritage (2019) *Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation.* Note*:* document was undated in August 2021 with minor revisions.

stone ruins could be re-roofed for bats and mitigation measures are proposed in this regard.

12.5.78. The programme of monitoring is not proposed in response to any identified significant effect but rather as a best practice measure in accordance with SNH 2009. The monitoring programme is considered reasonable and will be reported to the planning authority following each monitoring year and may include recommendations that may inform additional mitigation of adaptation as required. I consider this reasonable.

12.5.79. Overall, I consider the mitigation measures, including habitat replacement and continuation of networks of hedgerows as proposed are reasonable.

Bats - Collison and Barotrauma Impacts

12.5.80. I note that wind farms present four potential risks to bats: loss or damage to commuting and foraging habitats (considered above); loss of or damage to roosts (considered above); displacement of individuals of populations (considered above) and the issue of collision risk and barotrauma and other injuries, considered hereunder.

12.5.81. Collision risk and barotrauma was identified in the EIAR.

12.5.82. It is proposed to mitigate impacts on bats through the maintenance of a vegetation free buffer zone of 50m around each turbine (see also Appendix 6.2 Bat Report). It is proposed that all wind turbines are subject to ‘feathering’ of turbine blades when wind speeds are below the cut-in speed of the proposed turbine. The turbine blades are pitched at 90 degrees or parallel to the wind to reduce their rotation speed to below two revolutions per minute while idling. This measure has been shown to significantly reduce bat fatalities (by up to 50%) in some studies (NIEA, 2021). Best practice mitigation measures are further identified for the construction phase in relation to noise and lighting, in addition to previously mentioned measures of blade feathering, and buffering with mitigations around associated felling, including pre-construction surveys and derogation licences where required.

12.5.83. I note that a comprehensive suite of monitoring proposals is proposed and monitoring of the effectiveness of the curtailment measures to address any inefficiencies.

12.5.84. I consider that the EIAR demonstrates an adequate understanding of the bat species and potential for roosts present within the site and its surrounds and has outlined a suitably comprehensive range of mitigation and monitoring measures to reduce the potential impacts on bats.

12.5.85. I am satisfied that the report in Appendix 6.2 of the EIAR provides the basis for robust assessment of bats. In terms of construction phase, mitigation measures are suitably detailed and I do not have any reservations regarding their implementation. I note with regard to pre-construction surveys, that this is industry best practice and does not constitute a lacuna in the assessment. I am satisfied that, subject to the implementation of the proposed mitigation measures and the monitoring programme, the proposed development will not have a significant residual effect on bat populations.

Marsh Fritillary

12.5.86. While the survey results for the marsh fritillary is questioned in a submission, I note the EIAR has addressed that fact that the commonage area of Broemountain contains the marsh fritillary larval foodplant, Succisa pratensis, however, notes the sward within which this plant is located is pre-dominantly greater than 25cm in height making this habitat less suitable for marsh fritillary colonies (Fowles, 2005). I consider the rationale provided as to why the plant may be present but not the butterfly species itself is reasonable. I have raised concerns elsewhere in relation to the overall value of the mosaic of habitat present on Broemountain, which includes the area of this foodplant.

Deer

12.5.87. According to submissions made, deer are present in the area, however it is highlighted that they are not referred to in the biodiversity assessment, which it is contended calls into question the validity of the biodiversity assessment undertaken. From the surveys submitted, no deer were observed. There is the possibility that species may be present on site which may not have been recorded during the

terrestrial surveys, however, I note deer are not listed as species of conservation concern.

12.5.88. The proposed development will undoubtedly displace deer from the site during construction, however, there is significant comparable habitat for deer in the immediate vicinity of the site and I have no concerns in this regard.

Haul Route and Biodiversity

12.5.89. I note that the works proposed at the 3 no. locations along the haul, including a habitat survey. A number of observers are critical of the fact that the transportation of abnormal loads along the haul route will require cutting back of trees and hedgerows which has not been assessed. I consider that an assessment of the measures required along the haul route are set out in Section 6.3.2.1.9. I do not consider that significant impacts would arise.

Aquatic Ecology

12.5.90. Observers raises concerns in relation to the lack of aquatic surveys and reliance instead on an assessment of the river habitat to determine the likelihood of species within it.

12.5.91. Regarding aquatic ecology, I am satisfied that the methodology adopted is in accordance with best practice and is acceptable. Following implementation of a surface water management plan and water quality mitigation measures as presented in the EIAR, there will be no significant impacts on aquatic species. I accept that the EIAR presents suitable measures to avoid adverse water quality effects.

Otter

12.5.92. Observers raise concern in relation to the lack of mitigation for otters. With respect to potential effects during construction on Otter, the species was recorded using the watercourses in the site, but no evidence of holts or resting places have been identified. There is an overlap here with water quality - water quality measures will ensure no deterioration of their habitat and it is noted that disturbance within the site and along the haul route, where limited works are proposed, is highly unlikely.

<u>Conclusion</u>

12.5.93. 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 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.

12.6. Ornithology

EIAR - Overview

12.6.1. Chapter 7 of the EIAR relates to Ornithology and is supported by the following appendices in Volume IV: Appendix 2.1 CEMP, Appendix 7.1 Dyrick Hill Ornithology Report, Appendix 7.2 Collison Risk Modelling Report, Appendix 7.3 Survey Details Dates and Weather Condition, Appendix 7.4 Figures, Appendix 7.5 Survey Results, Appendix 17.1 Schedule of Mitigation and Monitoring Measures. This chapter is also supported by figures within Volume III.

Methodology

12.6.2. The site is described, and the methodology set out. Assessment methodology includes desk top study, site surveys, and consultations (Appendix 1.3 Scoping Opinion).

12.6.3. Appendix 7.3 sets out Survey Details, Dates and Weather Condition. Consideration was given to species identified locally as being of conservation concern, regionally or those particularly susceptible to impact from wind farm development. It is noted that not all species would be categorised as target species, e.g. most passerine species and general lowland farmland birds are not considered to be particularly susceptible to impacts from wind farms (SNH, 2017). In the Irish context, target species are taken from species of conservation concern in Ireland (BOCCI List, Gilbert et al., 2021), those likely to occur within the vicinity of the proposed wind farm, and those most at risk from particular impacts such as disturbance and displacement (Nairn, R. and Partridge, K., 2013). A review of the bird species listed on Annex I of the EU Birds Directive (2009/147/EC) was undertaken.

12.6.4. Bird surveys of the study area following SNH (2017) guidance were carried out during the winters of 2020-2021 and 2021-2022, as well as the summers of 2020, 2021, and 2022. Over the entire survey period, three summer surveys and two winter surveys were completed. In addition, a round of autumn migration surveys were

conducted in September and October of 2021. The field surveys comprised two main elements; Vantage point (VP) watches and targeted distribution, and Abundance surveys which comprised:

- VP watches undertaken over 2.5 years at three VPs (winter (October-March) 20/21, winter 21/22, summer (April-September) 2020, summer 2021, and summer 2022).
- Transect surveys (winter 20/21, winter 21/22).
- Hinterland surveys (winter 20/21, winter 21/22, summer 2020, summer 2021, and summer 2022). A hinterland survey for raptors was conducted in accordance with Hardey et al. (2013) to assess hen harrier and other raptor activity over the winter and breeding periods in the greater surroundings of the site.
- Breeding wader transects (April, May, June and July 2020; April, May and June 2021; and April May and June 2022).

12.6.5. The flight activity survey area was taken to be that area encompassing 500m circular buffers drawn around the location of each proposed turbine, as required by SNH (2017) guidance. Distribution and abundance surveys were carried out to record numbers and distributions of breeding, wintering and migrant birds using the site that might be affected either directly or indirectly by the proposed development (e.g., collision risk, habitat loss, displacement effects).

12.6.6. Limitations listed in relation to VP surveys:

- In February 2022, VP2 had to be moved slightly to VP2b as a result of a minor restriction in terms of access.
- In July 2022, tall bracken growth had impeded the view from VP2b, resulting in an additional short move to VP2d. The viewshed remained the same at both VP locations given the minor shift in locations locally.
- It is stated that VP surveys fell slightly short of the required total (VP1 by 1 hour, VP2 by 15 minutes, and VP3 by 3 hours and 35 minutes). It is stated that supplementary round of autumn migration surveys covered this shortfall, with VP1 exceeding requirements by 5 hours, VP2 by 5 hours and 45 minutes, and VP3 by 3 hours and 35 minutes, meaning the combined survey effort required for all seasons exceeds that required by SNH guidance (SNH, 2017).

Baseline

12.6.7. In relation to European sites, I refer the Board to section 13 of this report for more detail.

12.6.8. Examination of NPWS and NBDC records indicates that there is a combined total of 39 species of bird, regardless of conservation status or date, recorded in the 10km grid square (S10) which overlaps the study area. These species are listed in Table 7-14 of the EIAR.

12.6.9. VP Surveys: Table 7-15 identifies the 'Target species and species of conservation concern recorded on Dyrick Hill vantage point surveys between May 2020 and September 2022, inclusive'.

12.6.10. Hinterland Surveys: The target species in the Hinterland Surveys are set out in Table 7-16. Golden plover and hen harrier were recorded in the winter 2021/2022 season, which are listed under Annex I of the EU Birds Directive. Hen harrier, merlin, and peregrine were recorded during the summer season 2022 and are listed under Annex I of the EU Birds Directive.

12.6.11. Winter and Breeding Walkover Surveys: Transect surveys for all species were recorded during monthly surveys of the proposed wind farm site over three summers and two winters. Over the entire survey period, a total of 50 bird species were recorded. Of the 50 species, one is Annex I listed (golden plover), six are red-listed (golden plover, kestrel, meadow pipit, redwing, snipe, and stock dove) and 12 are amber-listed (goldcrest, house martin, house sparrow, lesser black-backed gull, linnet, mallard, skylark, spotted flycatcher, starling, swallow, wheatear, and willow warbler). The remaining 32 species are green-listed. The recorded information is provided in Table 7-17.

12.6.12. Breeding Wader Surveys: No breeding waders were found on site over the combined survey periods.

12.6.13. Table 7-20 outlines the Key Receptors (KRs) selected for assessment and the rationale for same based on NRA guidance (NRA, 2009a); and the overall importance or sensitivity evaluation for each key receptor, as per Percival 2007. In terms of sensitivity, the birds are rated 'very high' (five species), 'high' (nine species), 'medium' (16 species) and 'low' (seven species).

12.6.14. The five ‘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);
- Red kite (red-listed, annex I);

12.6.15. Birds of ‘High Sensitivity’:

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

12.6.16. Medium’ sensitivity species recorded in the study area amounting to the following 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);
- Sand martin (amber-listed);
- Skylark (amber-listed);
- Spotted flycatcher (amber-listed);
- Starling (amber-listed);
- Swallow (amber-listed);
- Teal (amber-listed);
- Wheatear (amber-listed);
- Willow warbler (amber-listed).

12.6.17. Seven ‘Low’ sensitivity species are considered in this assessment:

- Buzzard (green-listed);
- Great Black-backed gull (green-listed);
- Great spotted woodpecker (green-listed);
- Osprey (green-listed);
- Sparrowhawk (green-listed).

12.6.18. No raptors were noted breeding or roosting on site, however, surveys conducted as part of the proposed development indicate that buzzard, kestrel, and sparrowhawk are probably breeding within the vicinity of the study area. Merlin and hen harrier were also noted, to a lesser extent, and although breeding was not proven, these too could be breeding in the immediate vicinity, but not on site.

12.6.19. In terms of gulls, herring gull, great black-backed gull, and lesser black-backed gull, these species do not breed on or in the vicinity of the site, however all three take advantage of feeding opportunities presented during periods of heavy rainfall when improved agricultural grassland fields have an abundance of earthworms and other invertebrates come to the surface. Spring and early summer slurrying events as well as ploughing events also have the same effect, in that they provide opportunistic feeding events and can temporarily attract large numbers of gulls. However, improved agricultural grassland is the dominant habitat in Ireland,

and thus such opportunistic even occur across on a large geographical scale from a local to national level, and as such no effect is anticipated for gulls.

12.6.20. Golden plover were noted on numerous occasions over the winter seasons and involved records of birds landed and in flight over the site. Snipe were noted as being present within and immediately adjacent to the site and potentially breeding. A single record of lapwing occurred, referring to a bird flying over the site, however, it did not land. No effects are anticipated for lapwing. In terms of wildfowl, mallard and teal were recorded. Habitats on site are not optimal for either species, although both can use smaller waterbodies including streams, drainage canals and even flooded fields. Red Grouse was not observed on site.

EIAR Potential Effects

Construction Phase, Likely Significant Effects (Direct and Indirect)

12.6.21. The potential risks to birds from wind farms are described as being associated with direct habitat loss, displacement (indirect habitat loss - birds avoid wind farm due to turbines), deaths by collision and barriers to movements. The main construction related risks are habitat loss (direct impact) and disturbance and / or displacement (indirect impact).

12.6.22. As noted under Section 12.4 above, the direct habitat loss as a result of the proposed development is:

- 4.87 Ha of dry acid grassland,
- 3.4 Ha of dry heath (Annex I habitat),
- 2.8 Ha of conifer plantation,
- 12.06 Ha of improved agricultural grassland,
- 0.55 Ha of dense bracken,
- 1.51 Ha of heath/grassland/bracken mosaic,
- 0.26 Ha of scrub, and
- 0.58 Ha of wet grassland.

Additional works along the TDR will result in the removal of trees as well as the trimming of branches along the corridor of the route.

12.6.23. Table 7-22 sets out the 'Effect of habitat loss to target species', ie the key receptor species of Buzzard, Golden Plover, Great Black-backed Gull, Hen Harrier, Herring Gull, Kestrel, Lapwing, Lesser Black-Backed Gull, Mallard, Merlin, Osprey, Peregrine, Red Grouse, Snipe, Sparrowhawk, Stock Dove, Swift, and Teal. The 'overall significance' of impacts without mitigation are rated as being between long term imperceptible, to slight, to moderate. I note of the 'very high' sensitivity rated birds, the golden plover is rated as moderate effect locally and slight effect at county level; hen harrier is long term slight to moderate; the merlin is not significant to slight; the peregrine is imperceptible to slight; and red kite is slight effect.

12.6.24. Table 7-23 further rates indirect effects of disturbance and / or displacement on the key bird receptors.

Operational Phase, Likely Significant Effects (Direct and Indirect)

12.6.25. The primary cause of direct effects on birds during the operational phase of a development is collision risk. Indirect displacement of birds by the presence of turbines is also a consideration, as is the barrier effect whereby the primary effect is increased energy expenditure when birds have to fly further to circumvent an obstacle.

12.6.26. With a proposed hub height of 104m and a blade radius of 81m, the lower tip height is 23 and the upper tip height is 185m. Theoretically birds flying within this height range (23m to 185m) would be at risk of collision without the consideration of avoidance.

12.6.27. A Collision Risk Assessment (CRA) of the KRs is included in Appendix 7.2 of the EIAR. The CRA is based on vantage point surveys undertaken in the winters of 2020/21, 2021/22, as well as the summers of 2020, 2021, and 2022. The modelling was carried out using the Scottish Natural Heritage Collision Risk Model (Scottish Natural Heritage, 2000; Band et al., 2007 and Band, 2012). The bird occupancy method (Scottish Natural Heritage, 2000) was used to calculate the number of bird transits through the rotors, and the spreadsheet accompanying the Scottish Natural Heritage report was used to calculate collision probabilities for birds transiting through the rotors.

12.6.28. 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 have been 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.

12.6.29. Table 7-24 identifies the effects on KRs during operation, with the significance of effects without mitigation rated. I note with regard to the high sensitivity birds, that the impact for golden plover is rated as slight; and for hen harrier, merlin, red kite and peregrine these are rated as imperceptible.

12.6.30. The EIAR states that displacement of birds by the presence of turbines is not considered to be a significant effect, however, the proposed placement of turbines in the commonage area poses a significant risk of displacing Annex-I protected golden plover. This species commonly winters in areas of upland heath, which is a habitat which is becoming increasingly at risk from both wind farm developments and afforestation.

12.6.31. With regard to barrier effects and potential disturbance, the impacts are outlined in Table 7-25. I note the following ratings for the very high sensitivity birds – golden plover, moderate; hen harrier, not significant to slight; merlin, slight; peregrine, slight to imperceptible.

Decommissioning

12.6.32. Effects during decommissioning are indicated to be the same as for the construction phase, with Section 7.5.3 of the EIAR elaborating on this further.

Cumulative Impacts

Cumulative impacts in terms of other projects are considered. The EIAR (table 7-26) identifies five operational, consented, or proposed wind farms within 20km of the proposed wind farm site, with an additional two instances of single turbines (3.5km northeast, and 14.5km southeast, respectively). I note that a proposed pre-planning

development at Scart Mountain has not been considered which is raised as a concern in a number of submissions and is also referenced in the submission by the DHLGH. However, this proposal has not yet been submitted as an application, therefore I see no issue in terms of its omission from the cumulative impact assessment given the lack of detail/certainty available in relation to it (I refer the Board to Section 11.8 of this report where I address this issue in more detail).

EIAR Mitigation Measures

Construction Phase Mitigation Measures

12.6.33. A Construction Environmental Management Plan (CEMP) is to be prepared (copy provided in Appendix 4-4). Best practice construction methods are to be applied. An Ecological Clerk of works is to be retained to oversee all mitigation measures proposed and the implementation of a site-specific CEMP.

12.6.34. Mitigation measures are stated to be incorporated within the overall design, having regard to the approach to minimise all proposed hardstanding areas, and location of GCR beneath existing public roads to avoid effects on roadside hedgerows and disturbance to nesting birds.

12.6.35. A list of construction mitigation measures is set out in section 7.6.1 of the EIAR.

- 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. This will help minimise disturbance.
- 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).

- No construction works shall be undertaken within the commonage area (Turbine 10, 11, 12 and 13) during the winter season. Pre-construction surveys for golden plover occupancy within the commonage area to re-confirm the findings of the EIAR, shall inform this restriction period typically between the months of October and March annually.

- 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.

Operation Phase Mitigation Measures

12.6.36. I note no specific mitigation is proposed for the operation phase.

12.6.37. A post construction monitoring programme is proposed to confirm the efficacy of the mitigation measures and submitted annually to the competent authority and the NPWS. It is indicated that surveys will be undertaken in years 1, 2, 3, 5, 10 and 15 and more detail in listed in section 7.6.3 of the EIAR.

EIAR Residual Effects

12.6.38. Following mitigation, the EIAR states that the proposed wind farm development will have an Imperceptible to Slight Reversible Residual Effect in the Local Context on birds. The residual effect for golden plover will be an Imperceptible to Slight effect in the Local context. In relation to habitat loss, a moderate residual effect at a local level is envisaged, reduced to a slight effect at a County level for the species.

Assessment of Likely Significant Effects

12.6.39. I have examined, analysed and evaluated Chapter 6 of the EIAR, all of the associated documentation and submissions on file in respect of biodiversity. I am not satisfied that the applicants understanding of the baseline environment, by way of desk and site surveys, is comprehensive and that the key impacts in respect of

likely effects on birds, as a consequence of the development, have not been fully addressed.

Habitat Loss, Hen Harrier and Other Bird Species

12.6.40. Observations of note include the submission of DHLGH, DAU unit. The matters raised include:

- Proposal will result in the loss of 3.5 ha of Dry Heath (4030) Annex I habitat with additional removal of linked habitats such as species rich Nardus acid grassland. Mitigation questionable.

- Bird species present include Annex I hen harrier, golden plover, and merlin. Other species on high (red list) conservation include meadow pipit, kestrel, snipe and bird of medium (amber list) concern of skylark. Previously extinct Annex I birds of white tailed eagle and red kite have been recorded in the area and it is likely that given the nature and location of this upland habitat that they would make periodic use of the area.

- Turbine layout will result in loss of or as best severely compromised habitat for hen harrier and golden plover.

- The proposed development would cause a net loss of biodiversity (habitat and birds), contrary to RPO1 of the Southern Region RSES.

- Hen harriers were repeatedly breeding on Broemountain up until 2019 and producing 4/5 chicks annually (Dr. Allen Mee, pers com). While small habitat change has occurred in the area, it still remains entirely suitable foraging and nesting habitat. Such changes are very minor compared to the proposed development and are likely temporary as agricultural regulation application and incentives change.

- 2015 National Hen Harrier survey noted that Broemountain makes up the eastern extent of a larger unit of important hen harrier habitat, where 5 breeding pairs nested. EIAR states no hen harrier birds were found nesting in the area. However, they were present up to 2019 and could nest here again. The Hinterland Surveys recorded two sightings of hen harriers carrying prey, which is indicative of an active nest as they do not generally carry prey other than to visit active sites. There is no follow up in the EIAR on these significant sightings to establish where these hinterland nests might be located. There is no discussion in the EIAR of the 2015

hen harrier survey, which recorded 5 breeding pairs of hen harrier, one of which was within the development site, one within 0.5km and one within 3km.

- The Department does not accept the EIAR assessment in table 7.22 that harrier habitat on the site is highly degraded and unlikely to be suitable for breeding or that it is sub-optimal for foraging, nor does it accept conclusions that only 11.17ha of habitat will be lost. The EIAR has not mentioned or included the importance of near-by young pre-thicket forestry plantation, which is also suitable breeding and foraging habitat, supporting the adjoining open habitat. Hen harrier nested in young forestry in Broemountain in 2016 and a nearby site (0.5km) in 2019 and both pairs regularly foraged over pre-thicket forestry as well as heather moorland and grass moorland at the site.

- The DHLGH submission raises issue with the methodology applied in relation to vantage point watches and details of breeding bird transects:

    - Appendix 7.1 on vantage point watches does not indicate start or end times, which is important information in evaluating potential breeding.

    - Table 2.5 details breeding bird transects using CBS methods, which indicates early visits to take place between 1st April and Mid-May and late visits between Mid-May and end of June. Table 2.5 indicated first visits in 2020 where on 31st May and late visits where not until 20th August 2020, which is well outside acceptable survey dates for passerines, raptors, or breeding waders, and not likely to reflect the breeding bird community. In addition only one of two transects was covered in the later visit. In 2021, early visits were not until 26th May 21 (with only one of two transects carried out) and late visits were on 29th June 21 (with only one of three transects carried out) and on 21st July, the latter date being outside the prescribed dates for surveying breeding birds and no acceptable under the CBS methodology. In 2022 all transects were covered within the prescribed period but this provides only one season of data which is not sufficient for a project of this scale.

    - Predicted impacts under Percival evaluations of direct loss, collision risk and indirect loss considered and rated separately with no one assessment reflecting the eventual overall combined impact of the development. Calculations also do not accept significant avoidance zones around turbines,

therefore in the opinion of the Department these significantly underestimate the zone of influences and the overall likely impact of the proposed Broemountain development.

- Previously extinct Annex I species reintroduced and recorded in this area include White-Tailed Eagle and Red Kite. It is likely that these birds would make future sporadic use of this upland habitat. The proposal would remove or degrade potential habitat for these species.

- Lack of consideration of cumulative impact with proposed Scart Mountain windfarm development to the east of the site, which was known about at the time of the application. Birds and habitats clearly overlap the sites which together form a larger ecological unit. An overall ecological assessment needs to be considered to avoid long-term very significant and cumulative impacts.

12.6.41. Concern is raised by the Department in relation to the methodology in terms of timing of some of the bird surveys as submitted in Appendix 7.1 of the Ornithology report, with an impact on how accurately the breeding bird community including passerines, raptors and breeding waders (lapwing and golden plover) are evaluated. While the survey work did not reveal the site was utilised by lapwing or golden plover for breeding, the survey methodology is questionable and Further Information would be required to enable a robust assessment. However, given the substantive reasons for refusal recommended elsewhere in this report in relation to policy, I do not consider that requesting Further Information in this instance would be warranted.

12.6.42. With regard to hen harrier, the EIAR notes none were detected within the application site and two were recorded in the study area carrying prey. The Department considers the context of the 2015 hen harrier survey and the quality of the existing habitat to continue to support hen harrier in the future has not been sufficiently recognised in the analysis submitted. Due to the detected presence of hen harrier and lack of interrogation of the significance of hen harrier in this area, notwithstanding the existence of surveys which demonstrate history in this area, I consider overall that the EIAR is deficient in its assessment of the impact of habitat loss and disturbance potential of the windfarm on the hen harrier in the area. I further note the recent publication by the NPWS of the national Hen Harrier Survey 2022 (www.npws.ie). The survey states that surveyors in 2022 identified three main

sectoral pressures across breeding hen harrier sites: forestry (NPWS, 2015), wind energy development (NPWS, 2021) and agriculture (NPWS, 2015). The negative effects of activities associated with these sectors typically manifest directly on the species (e.g. nest destruction, disturbance, or displacement) and also indirectly on the supporting breeding and/or foraging habitats via destruction, disturbance, or displacement i.e. loss of habitats. Conservation challenges include development of effective measures to address sizeable landscape-scale deterioration in hen harrier habitats, caused by the extensive land-use changes that have precipitated lower breeding success, poor juvenile over-winter survival, and lower recruitment into the breeding population. The survey notes in it conclusion that the population of hen harrier has declined substantially in the short-term 2015 to 2022 by one third and in the long-term 1998/2000 to 2022 by more than half. It is stated that a cohesive, collaborative approach is required to collectively reverse the decline of the species to ensure that the hen harrier does not become ecologically defunct, or extinct, within any region or nationally. A Hen Harrier Threat Response Plan is currently being prepared by the department.

12.6.43. I consider the overall impact on the hen harrier has been inadequately addressed and the overall biodiversity value of the Annex I dry heath habitat in the context of the wider Knockmealdown area cannot be adequately mitigated as proposed. In light of the context of the habitat of the Broemountain area and its associated species, and the loss to biodiversity as a result of the development, I do not consider the rating of Imperceptible to Slight Reversible Residual Effect in the Local Context can be justified by way of mitigation measures in light of the national and international decline of relevant habitat and birds species. I do not consider the mitigation measures proposed are sufficiently robust or effective.

Conclusion

12.6.44. I have considered all of the written submissions made in relation to birds and the relevant contents of the file including the EIAR. 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.

Land, Soil, Water, Air and Climate

12.7. Land, Soil and Geology

EIAR - Overview

12.7.1. Chapter 8 of the EIAR addresses soils and geology. This chapter is supported by figures listed in Volume III of the EIAR, including bedrock geology, soil susceptibility, previous recorded landslide events, landslide susceptibility classification, GSI heritage sites, GSI mapped mineral locations.

Methodology

12.7.2. The assessment methodology seeks to evaluate the impacts on soils, geology and ground stability. It consists of a desk top study using published maps, aerial photography and recognised data sets. Field surveys were undertaken and included walkover surveys (17th June 2021; 3rd and 4th August 2022; and 24th August 2022) and geotechnical investigations.

12.7.3. 347 peat probes were undertaken within the EIAR boundary. 15 trial pits were excavated on 1st and 2nd July 2022 in order to verify the underlying soils and geology profile at, or close to, the proposed turbines and substation. 4 gouge cores were attempted at the proposed locations of 4 of the turbines in order to verify that no peat or soft soils were present at these locations. Due to the absence of peat or soft soils, these gouge cores did not penetrate deeper than the topsoil (c. 0.2m below ground level).

Baseline

12.7.4. The site is located beyond the south-eastern extent of the Knockmealdown Mountains mountain range. The western, northern and southern extents of the site are typically more elevated than the central and eastern extents of the site. The site is broadly surrounded by the three main peaks of Knocknasheega (428m) west of the site boundary, Broemountain (429m) in the northern extent of the site and Dyrick Hill (286m) within the southern central portion of the site. The eastern and central extents of the site are generally relatively flat with elevations typically ranging from between 130m to 190m. Structurally, there stated to be no known faults or folds affecting the site.

12.7.5. Based on the bedrock GSI mapping, the site is mainly underlain by sandstone rock and brown podzolic or podzol soils of coarse loamy drift with siliceous stones of the Knockmealdown, Knockboy and Ballycondon series. The EIAR states that according to the Soil Information System National Soils Map, pockets of peat may exist at the north-western extent of the site although no peat was identified at the site during the geotechnical surveys of the site. Shallow peaty topsoils were noted during probes, with the depth of topsoil being 0.0-0.4m. No peat or soft soils were observed beneath the topsoil within any trial pits or gouge cores. There areas of shallow bedrock in the west and northwest and minor areas of alluvium along the rivers between T03 and T05 and west of T09.

12.7.6. The National Soils Hydrology Map classifies the majority of the site as being poorly drained, particularly in the western and northern areas. The remainder of the site is classified as being well drained with the majority of these areas being located in the eastern and southern areas of the Site.

12.7.7. As per GSI landslide susceptibility mapping, the site is within an area of susceptibility categorise as predominantly Low but with Medium to High classifications in the northwest of the site and around Dyrick Hill in the centre of the site based on the steep slopes at this location.

EIAR – Potential Effects

Do Nothing Scenario

12.7.8. In a do-nothing scenario, coniferous plantation and agriculture would continue and no substantial changes are predicted.

Construction Phase, Likely Significant Effects

12.7.9. The following works are identified as having a potential impact on soils and geology during construction:

- Soil, subsoil, and bedrock excavation for construction of turbine hardstanding areas, access tracks, grid connection, temporary construction compound etc. Some imported granular fill material will be required to upfill the excavation to the levels required for construction.

- The potential effect of extracting material from external quarries include the extra pressure on transport routes and increased fuel consumption.

- Construction of a Borrow Pit, located between turbines T09 and T10 (see Figure 8.7). The area of the borrow pit will be approximately 127m x 127m with a depth of approximately 2m. Material sourced from the borrow pit will be used to provide fill for the roads, hardstanding areas, upfill to foundations and temporary compounds. Rock will be extracted from the Borrow Pit using two main methods, rock breaking and rock blasting. The primary method will be rock breaking. When the borrow pit is no longer required, it will be reinstated using any surplus inert material from the site and made secure using permanent stock proof fencing.
- Spoil/stockpiles and potential to impact ground stability.
- Contamination of soil by leakages and spillages from construction vehicles and plant. Contamination of soils / peat by hydrocarbons is considered a localised impact, however if hydrocarbon contamination is intercepted by surface water features the impact is potentially regional.
- Erosion and degradation of exposed subsoils during construction of the windfarm with potential to give rise to pollution of watercourses.
- Erosion of exposed subsoils during construction of the grid connection could give rise to pollution of watercourses**.**

Operational Phase, Likely Significant Effects

12.7.10. The following works are identified as having a potential impact on soils and geology during operation:

- Compaction of soils will occur during construction and to a limited extent during operation and decommissioning.
- Some construction traffic may be necessary for maintenance of turbines which could result in minor accidental leaks or spills of fuel/oil.

Decommissioning

12.7.11. Impacts associated with decommissioning will be similar to those associated with construction but of reduced magnitude because extensive excavation will not be required. The potential environmental effect of soil storage and stockpiling and contamination by fuel leaks will remain during decommissioning.

Cumulative Impacts

12.7.12. No direct effects are predicted, however indirect effects may arise due to the use of public roads as hauls routes to bring construction materials to site and the cumulative effect on the use of natural resources. I refer the Board to Section 12.12 of this report which addresses traffic.

EIAR Mitigation Measures

12.7.13. Mitigation measures are set out in section 8.5 of the EIAR and include, inter alia the following measures.

Construction Phase Mitigation Measures

12.7.14. Measures include inter alia:

- Embedded mitigation measures, where the layout of the development has been arranged to minimise potential environmental effects, e.g. positioning of infrastructure sites to avoid areas of shallow bedrock and avoid instability issues arising.
- Adherence to the CEMP and IWEA/Scottish Best Practice Guidelines to ensure that the amount of earth materials excavated is kept to a minimum in order to limit the effect on the geological aspects of the site.
- Soil and rock will be re-used for construction of Site Access Tracks wherever possible.
- Topsoil will be reused on Site for landscaping purposes around infrastructure and adjacent to access tracks. These measures will prevent the erosion of exposed areas of overburden in the short and long term.
- The calculated surplus (approximately 55,000m3 of subsoil/rock and 3,500m3 of topsoil will be used for reinstatement of the borrow pit (approximate dimensions 127m x 127m x 2m deep).
- Drainage will be reinstated at Borrow Pit and temporary construction compound in order to minimise future erosion of the soils and restore the pre-development state of the environment.
- All works will be managed and carried out in accordance with the Construction and Environmental Management Plan (CEMP in Appendix 2.1), which includes a fuel management plan, provision for spill kits, and good site practice measures.

- Emergency response provisions - The Construction Environmental Management Plan (CEMP in Appendix 2.1) will include an emergency response to be applied in the event of a landslide or ground instability. In particular, catch fences and other physical barriers (i.e. concrete blocks) will be on Site and available in sufficient quantities to be used in the event of ground instability. A plan will be made to prevent or divert any landslide away from protected areas (NHA, SPA and/or SAC).

Operational Phase Mitigation

12.7.15. Mitigation will be via good site practice as described in the IWEA and Scottish Best Practice Guidelines as detailed in the CEMP (Appendix 2.1); vehicular movements, hydrocarbon controls etc. as discussed previously. Overall, the residual effects from vehicular movements, hydrocarbon controls etc will have an insignificant, permanent, negative effect on the Site.

EIAR Residual Impacts

12.7.16. Table 8.15 of the EIAR sets out a summary of residual impacts. Subsoil and bedrock removal is related as moderate, with all other impacts rated as slight.

Assessment of Likely Significant Effects

12.7.17. The main issues raised in the submissions relate to the accuracy of the data provided, land stability and the underestimation of the presence of peat/peat depths. Irish Peatland Conservation Group (IPCG) disputes that there is no peatland in the area. There is Dry Heath present and the peat depth probes show there is 0-40cm deep peat in places. 30cm is the standard definition for classifying peatland which was used in terms of economy in the past, however, a better method is that at least 30% is of organic matter content (IUCN Peatland Programme, June 2023). Details of location of the trial pits and gauge cores missing and documentation does not include an Appendix 8.1 which is where it is stated that details of trial pits are located. Observers also raise concerns in relation to landslide susceptibility with Turbines 08, 12 and 13 located in areas of Moderately High and High Susceptibility to Landslides as shown in the applicant's map.

12.7.18. The EIAR states that extensive soil probing at the site confirmed that the depth to the top rock did not exceed 0.5m across 347 probe locations. The EIAR states that in accordance with the Scottish Executive Guidelines, a Peat Stability Risk Assessment

(PSRA) is not required for sites where peat depths do not exceed 0.5m. In these cases, the risk of a peat slide occurring is considered to be negligible.

12.7.19. I note observers comments that a map showing the location of the trial pits and gouge cores has not been submitted and there is reference to a table 8.7 which does not exist. Nonetheless, I am satisfied that sufficient investigations have been undertaken across the site to determine the soil characteristics and I have no reason to believe that the findings of the surveys as summarised in table 8.7 have not be adequately described or have been misrepresented, albeit they should have been submitted with the documentation.

12.7.20. I note the concerns in relation to the classification of peat as expressed by the Irish Peatland Conservation Group. I note that the Department in their submission raises no issue with the classification of the habitat as dry heath (4030) Annex I habitat, as per the surveyed habitat mapping submitted, therefore while there are other possible ways to classify peat in terms of quantifying organic content, I am satisfied that the classification of the habitat is correct.

12.7.21. I am satisfied that there is nothing in the findings of the above geotechnical investigations, which have been prepared in accordance with best practice guidelines, which would suggest that the site is not suitable for a wind farm development and I find no reason to question the veracity of the findings.

12.7.22. The Construction Environmental Management Plan (CEMP in Appendix 2.1) will include an emergency response to be applied in the event of a landslide or ground instability. In particular, catch fences and other physical barriers (i.e. concrete blocks) will be on site and available in sufficient quantities to be used in the event of ground instability. A plan will be made to prevent or divert any landslide away from protected areas (NHA, SPA and/or SAC). This is a best practice measure and I note there is nothing in the site investigations which would suggest a landslide will occur.

12.7.23. With regard to tree felling, I note that 8.1 ha of commercial forestry is to be removed to facilitate the development. Tree felling has negligible effects on land, soils and geology as no significant excavations are required during tree felling and therefore the surrounding commercial forestry will not contribute to cumulative effects associated with wind farm or cable route construction. Felling will occur under licence and mitigation measures as set out will be applied.

Conclusion

12.7.24. I have considered all of the written submissions made in relation to land, soil, and geology. I am satisfied that any 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 am therefore satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative effects in terms of land and soil.

12.8. Water - Hydrology and Hydrogeology

EIAR - Overview

12.8.1. Chapter 9 of the EIAR addresses water and associated appendices 9.1 Photographic Plates, Appendix 9.2 Lab Certificates, Appendix 9.3 Water Framework Directive Assessment. Volume III of the EIAR comprises figures relevant to chapter 9. Appendix 2.1 comprises a CEMP, which contains within it a Water Quality Management Plan, Watercourse Crossing Plan, and a Surface Water Management Plan.

Methodology

12.8.2. The assessment was undertaken using a combination of a desk top study (review of relevant datasets, on-line mapping, data bases and documentation sources) and walk over surveys/field work. Field investigations were undertaken on 12th/13th July 2021, 1st/2nd July 2022 and 2nd/3rd December 2022. The assessment methodology, guidance used in the assessment and relevant legislation is described in the EIAR.

12.8.3. A detailed drainage basin delineation of the site and the associated interaction with groundwater has been undertaken utilising LIDAR data and GIS software. This methodology allows for runoff flow paths and drainage patterns at the site to be identified (see Appendix 9.3, Water Framework Directive Compliance Assessment).

Baseline

12.8.4. The topography of the site is varied. It is elevated in the north / north-west and generally topographically low lying in the south and east with the exception of Dyrick Hill (286) near the southern extent of the site. The steepest incline across the site occurs at the northern extent near the proposed T8 position.

12.8.5. On a regional scale, the wind farm and grid connection route are located within the Blackwater (Munster) and Colligan Mahon catchment areas in Hydrometric Areas 18 and 17 respectively. The proposed wind farm and grid connection to Dungarvan are located within three WFD sub-catchments: the Blackwater (Munster) (SC_140), Finisk (SC_010) and Colligan (SC_010) sub catchments. None of these three sub-catchments are listed as a Margaritifera Sensitive Area in accordance with Annex II and Annex V of the EU Habitats Directive. The catchments are indicated in Figure 9.10 of Volume III.

12.8.6. On a local scale, the three main streams which drain the site are the Farnane River, the Lisleagh Stream and the Aughkilladoon Stream, as well as a number of artificial drainage features. The Finisk River, into which these three streams drain further downstream, is a large tributary of the Blackwater River which is part of a designated Special Area of Conservation (SAC), namely as the Blackwater River (Cork/Waterford) SAC. As one of the larger tributaries of the Blackwater River, the Finisk River is therefore also designated as a part of the Blackwater River (Cork/Waterford) SAC. There is therefore indirect hydrological connectivity between the site and the Blackwater River (Cork/Waterford) SAC. The Blackwater River Estuary and pNHA (Site Code 000072) also form part of the Blackwater River. The grid connection route traverses over the Finisk River at Mountaincastle Bridge along the existing L-1034 Local Road. The grid connection route will terminate at Dungarvan Substation at Killadangan. Approximately 600m south-east of the existing Dungarvan Substation, is the Dungarvan Harbour pNHA and the Dungarvan Harbour SPA.

12.8.7. The Farnane River and the Lisleagh Stream which are the primary receiving waters of the forestry drainage network at the Site. The Aughkilladoon Stream receives runoff from the open fields and associated drainage networks at the south-eastern extent of the site. There are also a number of natural and artificial drainage ditches located within the site. There is a wetland area to the east of the site (northwest of proposed turbine T4), which is near to where the Lisleagh Stream rises.

12.8.8. The Finisk River immediately upstream and downstream of the site is assigned a WFD status of “Moderate”. All of the surface waters which drain the proposed site have a WFD status of “Moderate” with the exception of the Farnane River which is assigned as “High” status under the WFD. The target for surface waters with

moderate status is to restore the status to at least “Good” status by 2027 under the third cycle of the WFD and for those with good status to retain that status. The Farnane River which rises at Broemountain and drains the western extent of the site is classified as “Not at Risk” of achieving at least “Good” status by 2027. The Lisleagh Stream and the Aughkilladoon Stream which drain the central and eastern extents of the site are currently assigned “Review” status in terms of risk of achieving at least “Good” status by 2027.

12.8.9. The baseline hydrology of the site is overall characterised in the EIAR as having a moderately flashy network of streams/rivers and by low-moderate surface water runoff rates.

12.8.10. The EIAR undertook water quality monitoring surrounding the site, with 11 different water quality monitoring locations analysed throughout the monitoring programme (see Figure 9.4 in Volume III for mapped area). Table 9.16, Table 9.17 and Table 9.18 set out field hydrochemistry results.

12.8.11. One watercourse crossing is proposed at the main site. The EIAR states the design layout has adhered to the principle of mitigation by avoidance wherever possible, thus reducing the need for more than one watercourse crossing at the site. The grid connection route will traverse three existing bridge crossings. Horizontal direction drilling (HDD) is required at two of these bridge crossings and at a cattle underpass, with the existing infrastructure to be utilised to facilitate the grid connection crossing at one bridge.

12.8.12. Overall, in terms of surface water, the receiving environment is considered as being of Very High Importance and Highly Sensitive, and therefore classification of any potential impacts will be limited to Magnitudes associated with Very High Importance

12.8.13. A Surface Water Management Plan is attached as part of Appendix 2.1, CEMP. The proposal provides for increased attenuation of rainwater during heavy rainfall events. Surface water runoff from the site will be directed to a stormwater drainage system designed in accordance with the principles of Sustainable Drainage Systems (SuDS). The management of surface water runoff will limit discharge to near greenfield runoff rates. The potential risk of exacerbating theoretical

downstream high end future scenario fluvial flood events is therefore expected to be negligible.

12.8.14. The EIAR states that all proposed design elements such as access roads, turbine locations, construction compound, substation, borrow pits and met mast etc. will all be positioned a minimum distance of 50m away from the site's rivers and streams wherever possible.

Flood Risk

12.8.15. The Geological Survey of Ireland (GSI) groundwater flooding probability maps were also reviewed at https://www.floodinfo.ie/map/floodmaps/. There are no low, medium or high probability instances of groundwater flooding predicted to occur at the site or along the proposed grid connection route.

12.8.16. In terms of flood risk, a Stage I Flood Risk Assessment did not identify any low, medium or high end significant flood risk at any of the main site features such as turbine locations, hardstand areas, met mast, substation or borrow pits etc. A theoretical 0.1% and a 1% AEP fluvial flood event could potentially occur at the south-eastern EIAR boundary where the site access road will merge with the pre-existing R-671 road (at the main site access point). The R-671 intersects the floodplain of the Finisk River in the townland of Woodhouse. The site access road is the only feature of the project to be constructed in this area and it would be positioned at the outermost extremity of the Finisk River flood plain, approximately 1.8km south-east of the nearest turbine position (T02). This site access road will be temporary and only used for construction, then it will be reverted back to the existing substrate. Potential temporary fluvial flooding of the pre-existing R-671 road, and by extension of a small section of the site entry road is expected to have a negligible impact on the development and on downstream receptors.

12.8.17. In terms of the grid connection route, at Mountain Castle Bridge, the Finisk River is predicted to flood in a possible present day 1% AEP fluvial flood event on the L-1034 Local Road where a pre-existing bridge crosses the Finisk River and which the grid connection route will traverse. No additional 1% or 0.1% AEP present day scenario fluvial flood events are predicted to occur along the grid connection route. The grid connection trenching works will be temporary, and surfaces will be

replaced with like for like surfaces. The potential for exacerbating existing recurring flood events along the grid connection route is rated as negligible.

Groundwater

12.8.18. The Knockmealdown groundwater body underlying the Site is currently assigned “Review” status in terms of risk of achieving at least “Good” status by 2027. The Kilrion, Ballyknock and Dungarvan groundwater bodies which underlie sections of the grid connection route are categorised as “Not at Risk” of failing to meet their WFD objectives by 2027.

12.8.19. GSI mapping indicates the bedrock is Knockmealdown Sandstone Formation. Bedrock aquifer is rated as Locally Important (LI) Aquifer, bedrock which is moderately productive only in local zones. The EIAR states that these underlying Knockmealdown groundwater body (GWB) rocks have no intergranular permeability, groundwater flow occurs in faults and joints. Most groundwater flow probably occurs in an upper shallow weathered zone. Below this, in the deeper zones, water-bearing fractures and fissures are less frequent and less well connected. GSI mapping indicates groundwater vulnerability on Figure 9.14. T1-T5 and T9-T12 are located in areas that are identified as being highly vulnerable. T6, T8 and T13 are in areas identified as being extremely vulnerable and where rock is at or near surface.

12.8.20. The water table is generally within 10m of the surface with an average annual fluctuation of up to 6 metres occurring across the GWB. Groundwater in this GWB is generally unconfined. Local groundwater flow is towards the rivers and streams, and the flow path will not usually exceed a few hundred metres in length. Owing to the generally poor productivity of the aquifers in this body, it is unlikely that any major groundwater surface water interactions occur. The poorly permeable aquifer can support only local scale flow systems. Baseflow to rivers and streams is likely to be relatively low. There are no known karst features recorded in close proximity to the Site nor along the grid connection route. The closest evidence of karstification to the Site is recorded within a series of swallow holes and springs located east of Cappoquin, approximately 5km south of the site.

12.8.21. Field investigations included excavation of trial pits, extensive peat probing and the use of gouge cores to characterise the underlying soils, subsoils and bedrock characteristics of the site. The presence of groundwater at or very near the

surface was not observed when gouge cores were advanced at each of the turbine locations. The underlying groundwater body is composed mainly of poorly permeable sandstones, where only moderate recharge rates occur.

12.8.22. In terms of potential to impact on groundwater, given low permeability ground conditions, if contaminants were to be accidentally released it is expected that their mobility within the groundwater would be limited and would remain relatively localised to the source of contamination. It is more likely that contaminants released on the steep slopes near turbine or hardstand areas would flow to nearby watercourses within surface runoff rather than to groundwater. As a result, surface waters such as rivers, lakes, streams and drains are likely to have a higher vulnerability to potential contamination at the site than groundwater. An exception to this scenario would be if spills were to occur in low lying areas of the site with well drained soils that are not located in close proximity to any drains or watercourses. The GSI mapped groundwater vulnerability is shown in Figure 9.14 in Volume III.

12.8.23. The EIAR states the potential for wells associated with rural dwellings in the area to be impacted to be low as excavations will occur in a moderate to low permeability environment which will have a containment effect on the localised groundwater. As noted above, the potential for any possible contaminants to leach or migrate across long distances or to alter the localised groundwater chemistry will, it is stated, therefore be limited.

12.8.24. Consideration of groundwater along the grid connection route has been considered in section 9.3.13.

12.8.25. Overall, in terms of groundwater, the receiving environment is considered as being of Medium Importance and Medium Sensitivity.

Do Nothing Scenario

12.8.26. Under the do-nothing scenario there would be no alteration to the hydrological environment and current land use practices would continue. Effects on groundwater are considered to be negligible, with surface water the main sensitive receptor.

Construction Phase, Likely Significant Effects

12.8.27. There are a range of construction activities associated with the development of the wind farm with the potential to impact on hydrology and water quality during the construction phase. These include:

- Construction phase activities relating to earthworks could result in the mobilisation of sediment to water courses.
- Three crossings of existing water courses will be required along the grid connection route with potential for contamination of surface water.
- The development will result in an increase in hard stand areas resulting in an increase in run-off rates with the potential to cause flooding downstream (removal of vegetation, increase in hard surface areas, cable trenches acting as conduits for surface water flow, blockages in drainage systems etc).
- The construction of new infrastructure has also the potential to alter overland flow and drainage networks.
- The use of machinery during construction could result in spillages of fuels, oils, lubricants, other hydrocarbons and concrete.
- Dewatering of borrow pit and excavation for the turbine foundations has the potential to impact on local groundwater levels and surface water run off quality.
- To facilitate the construction of access tracks, civil works and turbine hardstands, approximately 8.1 hectares of forestry will need to be clear-felled, with potential release of suspended sediments becoming entrained in surface water runoff and discharging to the downstream surface water network and potential release of nutrients due to tree felling and soil disturbance, especially phosphates and nitrates leading to potential increased eutrophication in the downstream surface water network.
- Potential for release of wastewater sanitation and livestock contaminants.
- Potential to impact on hydrologically connected designated sites (this is discussed separately in section 13 of this report).

Operational Phase, Likely Significant Impacts

12.8.28. During the operational phase, the main impact on the water regime relates to the increase in hardstanding areas which will increase surface water runoff and potential for pollution reaching the surface water drainage network.

12.8.29. During prolonged heavy rainfall events, additional surface water runoff at increased flow velocity could increase hydraulic loading.

12.8.30. Due to the elevated location and sloping nature of the majority of the lands no significant flooding issues are anticipated.

Decommissioning Phase

12.8.31. In the event of decommissioning the turbines would be removed off site and the hard stand areas would be remediated to match the surrounding land cover. The impacts would be similar to the construction stage, but of reduced magnitude.

12.8.32. During the decommissioning phase, no impact on the qualitative status of the receiving waters is anticipated.

Cumulative Impacts

12.8.33. Section 9.5.6 of the EIAR addresses cumulative impacts, which addresses all planning applications (granted and awaiting decisions) within a combined river sub-basin zone within the vicinity of the wind farm site. The Coumnagauppul Wind Farm was examined and it is noted that it is predominantly located within and underlain by different catchment areas / groundwater bodies, and given the significant distance between the two proposed Developments, no cumulative effects in relation to hydrology or hydrogeology are anticipated.

12.8.34. Consideration has been given to the “Moderate” and “High” WFD status of the surface waters surrounding the proposed Development. Given the generally high quality baseline water quality results, the potential for the Development to have adverse cumulative impacts on hydrology is limited to the construction phase.

12.8.35. Notwithstanding mitigation measures set out in the EIAR, it is noted that the scale of water within the rivers in the catchment would have a large assimilative capacity. Any adverse effects arising would also be localised due to the nature of the soil and the environment, therefore no significant cumulative impacts are considered likely.

EIAR Mitigation Measures

Construction Phase – Mitigation Measures

12.8.36. A Construction Environmental Management Plan will be prepared in advance of the works. A Preliminary CEMP has been prepared for the project and is included as an Appendix of the EIAR, which contains within it a Water Quality Management Plan, Watercourse Crossing Plan, and a Surface Water Management Plan.

12.8.37. Directed discharges to groundwater or surface waters will not occur during the construction, operational or decommissioning phases of the development. The proposed development will not require the abstraction of groundwater. Stream diversion works or the alteration of pre-existing natural or artificial drainage patters will not occur. The increase in hydraulic loading as a consequence of the development will be negligible. As a result, the quantitative status to the receiving waters will not change during the construction, operational and decommissioning phases of the proposed development.

12.8.38. The EIAR sets out detailed measures, which include, inter alia, mitigation by design in relation to each of the potential effects identified above. Figure 9.8 of the EIAR illustrates the site drainage map, indicating proposed buffers of 50m from watercourses and 10m from drains. It is stated that exceptions to this rule will be where:

- Three horizontal direction drilling locations along the grid connection route;
- Shallow cable trenching along the grid connection route where the existing road network is already located within the 50m buffer zone of multiple rivers and streams.
- Small unmapped artificial and natural channels and field drains the grid connection route traverses existing bridges, that are already located within the 50m buffer zone, where horizontal directional drilling is required, and where one crossing will be constructed at the eastern extent of the site.

12.8.39. While not stated, I note T04 appears to be within a buffer zone and T09 adjoins a buffer zone.

12.8.40. The Surface Water Management Plan attached as Appendix 2.1 to the EIAR details mitigation measures for works proposed within the 50m buffer zone.

12.8.41. Additional mitigation measures include inter alia:

- Mitigation relating to excavation works - Section 3.4.3 of the EIAR and includes:
    - No permanent or semi-permanent stockpiles will remain on the site during the construction or operational phase of the Development. Excess spoil is to be taken to the designated borrow pit at the site.
    - Suitable locations for temporary stockpiles will be identified on an individual basis.
    - All mitigation measures related to surface water quality will be implemented before excavation works commence.
    - Areas of subsoils to be excavated will be drained ahead of excavation works. This will reduce the volumes of water encountered during excavation works and will therefore reduce the volume of water that is required to be dewatered whilst excavations are being carried out;
    - Engineered drainage and attenuation features outlined in the Surface Water Management Plan will be established ahead of excavation works;
- Mitigation measures to reduce the potential for adverse impacts arising from dewatering activities – Section 3.4.3.1 of the EIAR.
- Mitigation measures in relation to Release and Transport of Suspended Solids – Section 3.4.3.2 of the EIAR, including inter alia:
    - Collector drains and soil berms will be implemented to direct and divert surface water runoff from construction areas such as temporary stockpiles into established settlement ponds, buffered discharge points and other surface water runoff control infrastructure. This planning and placement of these control measures will be of fundamental importance, especially for the areas where works within the 50m buffer zone will be unavoidable.
    - Sediment control fences.
    - Multiple silt fences will be used in drains discharging to the surface water network. This will be especially important for the areas where works within the 50m buffer zone will be unavoidable.

- Surface water runoff will be discharged to land via buffered drainage outfalls that will contain hardcore material of similar composition to the geology of the bedrock at the site.

- Mitigation measures to reduce potential impacts posed from the use of concrete and the associated effects on surface water in the receiving environment – Section 3.4.4 of the EIAR.

- Mitigation measures relating to Potential Release of Hydrocarbons during Construction and Storage – Section 3.4.5 of the EIAR.

Operational Phase - Mitigation Measures

12.8.42. In terms of the operational phase, a water balance calculation indicates that the net increase in surface water run-off from the site will be imperceptible. As a consequence, mitigation measures are limited to ensuring drainage infrastructure is sufficiently maintained for the discharge rates associated with all areas of the site. Once identified, any and all blockages which may adversely impact upon the drainage regime will be immediately removed during the operational phase of the proposed development. No other additional impacts are anticipated during the operational phase of the development.

12.8.43. It is concluded that overall the proposed development presents no likelihood for significant effects on surface or groundwater following the implementation of the proposed mitigation measures, furthermore there is no likelihood for significant cumulative effects arising from the construction operation or decommissioning phases.

EIAR Residual Impacts

12.8.44. Subject to the implementation of the mitigation measures no significant residual effects on the water environment are predicted.

Assessment of Likely Significant Effects

12.8.45. I refer the Board to Section 13 hereunder in relation to the potential for impact on designated sites, which should be read in tandem with this section.

12.8.46. Issues raised in observer submissions relate to potential pollutants entering local streams, affecting water quality and biodiversity, and lack of appropriate

mitigation. Concerns are also raised in the IPCG submission in relation to assessment of nitrogen impact in combination with other developments, increased vehicular use, surrounding agricultural activities industrial extraction and how these will impact the dry heath habitat.

12.8.47. A Surface Water Management Plan (see Appendix 2.1, CEMP Management Plan 3, May 2023) has been prepared for the proposed development and incorporates best practice measures to 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 and the following are the main elements of the SUDS design:

- Open Constructed drains for development run-off collection and treatment;
- Collection Drains for upslope “clean” water collection and dispersion;
- Filtration Check Dams to reduce velocities along sections of road which run perpendicular to contours;
- Settlement Ponds and Buffered Outfalls to control and store development runoff to encourage settlement prior to discharge at Greenfield runoff rates.

12.8.48. Concerns are raised in relation to the lack of submitted detail in the area of mitigation, eg no drawings have been submitted of the proposed silt fences, and concern raised in relation to the effectiveness of these due to poor installation and maintenance. 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. I consider the level of detail being sought for in some submissions is not material and the lack of detailed specification, which would not normally be required at this stage, will not prejudice the effectiveness of standards in place governing the various design details. Should the Board be minded to grant permission, this issue can be addressed by way of condition, whereby exact details in terms of make and model of all mitigation measures proposed in the CEMP and SWMP be submitted for the written agreement of the planning authority prior to the commencement of development. I note under

the CEMP an Ecological Clerk of Works who will be responsible for coordination, compliance monitoring and continued development of the CEMP and any other surveys, reports or method statements required. The Ecological Clerk of Works will also review the Contractors' method statements and environmental plans as required by the CEMP, carry out compliance auditing during the construction phase and coordinate the Environmental Management Group and required liaisons between EMPower the Contractors, the Planning Authority and other statutory authorities.

12.8.49. Total nitrogen, nitrite as NO2 and Nitrate as NO3 have been considered and form part of the water quality monitoring programme (see Section 9.3.10 of the EIAR) and possible pathways for nutrient enrichment is addressed. The same parameters would continue to be monitored during the operational phase of the water quality monitoring programmes as discussed in Section 9.5.2.11. I consider the level of assessment in this regard is appropriate in relation to the potential for impacts on the water network and the consequential effects on habitats and species. I note the issues of traffic increase and potential impact on air was considered in the EIAR in the chapter related to traffic and transport (Section 12.12 of this report). Other new developments will in of themselves be assessed with regard to their environmental impacts and any cumulative impacts relevant.

12.8.50. The EIAR outlines significant measures to protect surface water. There will no direct discharges to any watercourse during any phase of the development. Mitigation will be achieved by avoidance and design. A 50m buffer zone will be maintained from the main watercourses and 10m from drainage channels during construction and proven best practice methodologies will be employed to mitigate impacts on water quality. Where some works are required within the 50m buffer, specific mitigation measures are identified. New settlement ponds and buffered outfalls are proposed which will provide an increased level of treatment and attenuation. Subject to the implementation of these measures, I do not consider that the proposed development will impact on water quality in existing water courses.

Conclusion

12.8.51. I am satisfied that the impacts identified can be avoided, managed or mitigated by these measures 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.

12.9. Air and Climate

EIAR - Overview

12.9.1. Air and climate are addressed in chapter 16 of the EIAR and Appendix 16.1 Carbon Calculator. The chapter sets out the background to the proposal and the relevant legislation and guidance on air quality.

12.9.2. Current land-use on the wind farm site comprises coniferous forestry, and agriculture. Current land-use along the Grid Connection comprises of public road corridor, public open space, discontinuous urban fabric and agriculture.

12.9.3. Air quality sampling was deemed to be unnecessary for this EIAR given the non-industrial rural nature of the area. I consider this an acceptable approach.

Do Nothing Scenario

12.9.4. In the do-nothing scenario, no changes would be made to the current land-use practice of agriculture and coniferous forestry. The opportunity to significantly reduce emissions of greenhouse gas emissions, including carbon dioxide (CO2), oxides of nitrogen (NOx), and sulphur dioxide (SO2) from fossil fuels to the atmosphere would be lost, resulting in a long-term slight negative effect.

Construction Phase, Likely Significant Effects

12.9.5. The primary sources of potential impacts during construction phase would arise from exhaust emissions from vehicles and dust emissions associated with construction vehicles and plant at the wind farm site. There is also the potential for the generation of dust from excavations and from construction of access tracks and hardstands and the trench for the cable ducting for the grid connection. Dust nuisance is most likely to occur at sensitive receptors within approximately 100 m of the source of the dust. All turbines are situated > 500 m away from dwelling houses and therefore these principal sites of dust generation are greater than 100 m distant from these sensitive receptors. The 112 Dwellings are generally situated along existing public roads within 1.8km from the site.

12.9.6. In terms of emissions, the construction phase is likely to lead to small, localised increases in PM10 levels, which is likely to lead to a temporary imperceptible effect.

Operational Phase, Likely Significant Effects

12.9.7. During the operational phase, the main air quality considerations relate to exhaust emissions from machinery and vehicles that are intermittently required onsite for maintenance, therefore operational phase impacts are limited.

12.9.8. Traffic movements and resultant air quality issues associated with decommissioning will be less than those identified at the construction phase.

12.9.9. In terms of climate, an overall significant positive impact is anticipated, as the proposal, by providing an alternative to electricity derived from coal, oil or gas-fired power stations, will result in emission savings of carbon dioxide (CO2), oxides of nitrogen (NOx), and sulphur dioxide SO2. No significant health effects are recorded. An online carbon calculator has been utilised to compare the carbon costs of wind farm developments with the carbon savings attributable to the wind farm. Appendix 16.1 of this EIAR sets out the calculations utilised. The EIAR states that the development will give rise to total losses of 122,328 tonnes (lower range) or 167,744 (higher range) tonnes of carbon dioxide.

Decommissioning Phase

12.9.10. Decommissioning Phase Impacts are anticipated to be similar to those arising during the construction phase depending on the scenario chosen. The turbines will be dismantled and removed from site, and it is assumed that the reinforced concrete bases and hardstands will be left in situ, covered in topsoil and revegetated. This option is stated to have less environmental impacts than the complete removal of the bases and hardstands. It is also intended that the site access tracks will be left in-situ, however they will not be covered in topsoil and remain in use for local residents. The air quality impacts would be predicted to be slightly negative in the short-term.

Cumulative Impacts

12.9.11. There will be no significant cumulative impacts from the construction phase on either air or climate which are temporary in duration. There will be no measurable negative cumulative effect with other developments on air quality and climate.

EIAR Mitigation Measures

Construction Phase Mitigation Measures

12.9.12. Construction mitigation measures addressed in relation to air and dust are summarised as follows:

- Approach roads and construction areas will be cleaned on a regular basis to prevent build-up of mud and prevent it from migrating around the site and off-site onto the public road network;
- Wheel wash facilities will be provided near the site entrances to prevent mud/dirt being transferred from the site to the public road network;
- 'Damping down' will be used if dust becomes an issue on any part of the site. For example, weather will be monitored, to predict the need for damping down activities during periods of dry weather when dust is likely to become airborne;
- Vehicles delivering materials to the site will be covered appropriately when transporting materials that could result in dust, e.g. crushed rock or sand;
- Ready-mix concrete will be delivered to site and it is envisaged that no batching of concrete will take place on site.
- Only washing out of chutes will take place on site and this will be undertaken at a designated concrete washout facility at the site compounds;
- Speed restrictions on access tracks will be implemented to reduce the likelihood of dust becoming airborne;
- Public roads along the construction haul route will be inspected regularly and if dirt/mud is identified that could result in dust generation, then the road will be cleaned as necessary;
- Stockpiling of materials will be carried out in such a way as to minimise their exposure to wind where possible and damping down or covering of the stockpiles will be carried out where needed; and
- A complaints procedure will be implemented on site where complaints will be reported to the site manager, logged and appropriate action taken.

12.9.13. The applicant has submitted a Construction Environmental Management Plan under Appendix 2.1 which includes these mitigation measures. Should permission by

granted by the Board, a revised and updated CEMP should be submitted to the PA for their written agreement.

Operational Phase Mitigation Measures

12.9.14. During the operational phase, there will be limited site visits for maintenance, therefore no mitigation in terms of air and climate is proposed.

EIAR Residual Impacts

12.9.15. The impact of plant and machinery in terms of dust generation and exhaust emissions is assessed as slight/imperceptible, negative, direct and temporary/short-term in nature. Best practice procedures will be following during construction and implemented as per the CEMP.

12.9.16. During the operational phase of the proposed development the effects are assessed as being slight, positive and long-term in nature. The overall proposal is in compliance with Strategic Environmental Objective ENV 04 of the development plan.

Assessment of Likely Significant Effects

12.9.17. I consider the methodology applied in relation to carbon savings to be reasonable and acceptable. I am satisfied that significant carbon savings will be achieved compared to power derived from more conventional forms of power generation and will have a positive impact in terms of climate.

12.9.18. I am satisfied that the mitigation measures proposed in relation to air quality are sufficiently detailed and robust.

<u>Air and Climate - Conclusion</u>

12.9.19. I have considered all of the written submissions made in relation to air quality and climate. I am satisfied that the identified impacts would be avoided, managed and mitigated by the measures which form part of proposed scheme, the proposed mitigation measures and through suitable conditions. I am therefore satisfied that the proposed development would not have any unacceptable direct or indirect impacts in terms of air quality and climate.

12.10. Noise

EIAR Overview

12.10.1. Noise is addressed in Chapter 10 of the EIAR, and is supported by the following appendices - Appendix 10.1: Photos of noise monitors in-situ; Appendix 10.2: Methodology for calculating wind shear, different hub heights and standardising hub height wind speed; Appendix 10.3: SoundPlan noise outputs; Appendix 10.4: Calibration certificates of noise instruments; and Appendix 10.5: Candidate turbine manufacturer's noise emission data.

12.10.2. The existing noise baseline is measured and methodology outlined. The potential effects during construction, operation and decommissioning are stated, with mitigation and residual effects identified, and statement of significance given. The assessment has been undertaken with reference to:

- A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise, including Supplementary Guidance Note 4: Wind Shear'2013 (IoA GPG).
- ISO 1996 Acoustics-Description and Measurement of Environmental Noise - Part 1: Basic Quantities and Procedures (ISO 1996).
- ETSU-R-978 : The Assessment & Rating of Noise from Wind Farms (ETSU-R-97).
- National Roads Authority (NRA) Guidelines for the Treatment of Noise and Vibration in National Road Schemes, 2004.
- Wind Energy Development Guidelines 2006.
- Draft Revised Wind Energy Development Guidelines (WEDG) 2019 – While these guidelines are referenced, it is noted that they have not yet been finalised and the noise limits from the WEDG 2006 are therefore used.
- World Health Organisation (WHO) 2018 'Environmental Noise Guidelines for the European Region', whereby two conditional recommendations are set out in the guidance and limitations highlighted in relation to using Lden levels as a measurement of wind turbine noise.
- BS 5228+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites Part 1 Noise; UK Institute of Acoustics'

12.10.3. Background noise levels were carried out at seven residential locations in the vicinity of the site between 3rd and 27th June 2022, with the properties referred to as H19, H46, H93 (financially involved property), H63, H15, H86, and H58. The next nearest inhabited building to the Wind Farm, which is considered a sensitive receptor, is H92 which is located approximately 710m from the nearest turbine T09. This property is owned by a financially involved party. The closest non-financially involved property is located 750m from T02, which is in excess of the recommendations of the 2019 Draft Wind Energy Development Guidelines which recommends a setback distance to residential housing of four times overall turbine tip height (this equates to a required setback for this project of 740m). There are 116 properties within 2km of the proposed turbines.

12.10.4. The predicted noise levels at each dwelling in closest proximity to the proposed wind farm site were calculated in accordance with ISO9613-2:1996 under a range of operating wind speeds, standardised to 10m AGL (above ground level) and the 1996 Wind Energy Development Guidelines (WEDG) were applied in terms of noise limits. On the basis of the baseline noise surveys, the area is not defined as a low noise environment as the background is above 30dB LA90 for most locations at all wind speeds, with the exception of some levels below 30dB at low wind speeds (see table 10.12 of EIAR for baseline results). The applicant states a lower fixed limit of 45dBA for daytime could be applied, as per the 2006 WEDG, however a more stringent limit is applied with the lowest background noise levels obtained at location H63 used as the basis for the assessment at all receptors with a limit of 43dBA being applied for day and night. Where receptors are financially involved, a 45dBA limit can be applied.

Construction Phase, Likely Significant Effects

12.10.5. Under BS 5228, noise levels generated by construction activities are considered significant if:

- The LAeq, period level of construction noise exceeds lower threshold values of 65dB during daytime, 55dB during evenings and weekends or 45dB at night.
- The total noise level (pre-construction ambient noise plus construction noise) exceeds the pre-construction noise level by 5dB or more for a period of one month or more.

12.10.6. The NRA guidelines are also referenced in the EIAR.

12.10.7. Identified sources of construction phase noise include:

- the construction of the turbine foundations and turbine hardstands and grid connection (main construction noise sources),
- construction of site access tracks,
- temporary construction compound,
- turbine erection and
- the construction of a 110kV electrical substation
- construction traffic to and from the site and along associated delivery routes.

12.10.8. The predicted noise levels for all construction scenarios are set out in Section 10.3.5, table 10.15. Levels are below the weekday and Saturday daytime Category A threshold level of 65 dBA and are also below the evening and weekend Category A threshold level of 55 dBA. Some generation plant or similar may operate during night-time hours within the construction compounds, however, predicted noise levels are below the night-time Category A threshold levels of 45 dBA.

12.10.9. In terms of traffic, the main construction traffic to the site will be during a very short period where ready-mix trucks deliver concrete for the turbine bases. It is estimated in the EIAR that 81 loads of concrete and 162 truck movements will be required for each turbine. For delivery of concrete the timeframe envisaged for each turbine concrete pour is taken as 10 hrs, which equates to an average of 16.2 movements per hour. Delivery trucks will access the site from a different route than leaving the site, thereby reducing traffic noise at receptors along the local road network. The delivery of turbines by large trucks travelling at very low speed will generate very low levels of noise at receptors along the Turbine Delivery Route. Chapter 13 of the EIAR also addresses road traffic noise. Cable laying and trenching will occur along the Grid Connection route from the On-site 110kV Substation to the Dungarvan 110kV Substation which means maximum levels will pertain no more than 0.5 days equivalent (4 hours) at any single receptor.

12.10.10. All predicted noise levels associated with construction are within NRA guidelines given as acceptable and are considered slight for the grid connection

works and not significant for construction traffic. The effects of noise and vibration from onsite construction activities are considered not significant.

Operational Phase, Likely Significant Effects

12.10.11. Identified sources of operation noise include:

- aerodynamic noise from the blades rotating - broadband in nature, with a 'swish sound', which if modulating under certain circumstances can potentially give rise to increased annoyance.
- mechanical noise from the machinery (e.g. gearbox and generator).

12.10.12. In terms of development design mitigation, it is stated in the EIAR that the preferred turbine model, the V162 will be fitted with STE as standard, which is best practice. A serrated extension of the trailing edge to the rotor blades mitigates noise emissions by effectively breaking up the turbulence on the tooth flanks into smaller eddies. The intensity of the pressure fluctuations is reduced which mitigates the noise emissions. Since the intensity of the noise emissions is largely dependent on the flow speed, STE are only installed on the outer rotor blade area where the rotary speed is the highest. Typically, STE reduces the noise levels by 2 to 3dBA depending on specific turbine used.

12.10.13. Infrasound and low frequency noise and vibration is referred to in the EIAR and studies are referred from south Australia, MIT, Technical Research Centre of Finland, with the conclusion that levels of infrasound are below accepted thresholds of perception and reference is made to a document prepared for the World Health Organisation, states that "there is no reliable evidence that infrasound below the hearing threshold produce physiological or psychological effects".

12.10.14. A noise contour map of the twelve turbines at maximum sound power output at a wind speed of 9ms-1 at 10m height is presented in Appendix 10.3. The contour map assumes that all turbines are simultaneously downwind to each location all of the time (continuously) which results in an overprediction of the noise levels.

12.10.15. The EIAR states that a lower fixed limit of 45dBA for daytime could be applied, however a more stringent limit is applied with the lowest background noise levels obtained at location H63 used as the basis for the assessment at all receptors

with a limit of 43dBA being applied for day and night. Where receptors are financially involved, a 45dBA limit can be applied.

12.10.16. Table 10.17 in the EIAR indicates the predicted noise levels at all receptors are lower than the noise limits in all cases, at all wind speeds, and are therefore compliant with the noise limits and are considered not significant.

12.10.17. Cumulative impacts considered in addition to the proposed, relate to the operation of an existing single turbine to the northeast of the development. The predicted noise levels are within the lower fixed 43dBA limit (45dBA for financially involved properties), which means the levels are within the day and night limits.

Decommissioning

12.10.18. In relation to decommissioning, noise effects are likely to be of a similar nature to that during construction but of shorter duration.

Cumulative Impacts

12.10.19. No significant cumulative impacts are identified.

EIAR Mitigation Measures

12.10.20. No significant construction noise effects are identified, therefore no specific mitigation measures are proposed, although good practice measures as identified in BS 5228 will be applied. During delivery of materials, trucks will access the site from a different route than leaving the site, thereby reducing traffic noise at receptors along the local road network. The delivery of turbines by large trucks travelling at very low speed will generate very low levels of noise at receptors along the Turbine Delivery Route.

12.10.21. The operational noise emissions are predicted to be compliant and well within 2006 guidelines with no special mitigation required, apart from fitting rotors with STE which, as stated previously, is now considered best practice. Mitigation beyond this is not considered necessary.

EIAR Residual Impacts

12.10.22. No residual effects identified.

Assessment of Likely Significant Effects

12.10.23. Concerns are raised by observers in relation to the operational noise impacts of the proposal to local residents. Concerns are also raised by observers in relation to impacts on health due to noise and in particular the potential for impacts on children with autism. Reference is made to dwelling H58.

12.10.24. I note that the 2006 Wind Energy guidelines continue to apply, and I have also had regard to the 2019 Draft WEGs and the WHO guidelines. The applicant applies the following noise level limits:

- 43 dB(A) L90, 10 min for day and night wind speeds of 5m/s or greater, and
- 40 dB(A) L90, 10 min at all other wind speeds.

where wind speeds are measured at 10 metres above ground level.

12.10.25. Having reviewed the information submitted by the applicant in the EIAR and associated appendices, I consider that a robust noise assessment, informed by adequate background noise monitoring at existing properties in the area, was undertaken. Table 10.6 sets out the Predicted Noise Levels at LA90 at varying wind speeds from the development and I note that at 5m/s, the levels are in all instances at/below 43 dB(A) and at 7m/3, the levels are at/below 40dB(A), except in the case of H10, H92 and H93, which are financially involved properties, where the limit is indicated to be 42.1 dB(A), 42.2dB(A) and 42.1dB(A) at wind speeds of 7m/s respectively. I note H51 is indicated to be 40.5dB(A) at wind speeds of 7m/s, however I consider the increase of 0.5dB(A) above the limit of 40dB(A) is not significant and note the high-level assumption that all turbines are directly down-wind to nearest receptors. Overall, the assessment demonstrates that the proposed development complies with the daytime and nighttime noise limit criteria at noise sensitive receptors as per the WEDG 2006 and no significant cumulative impacts will arise.

12.10.26. I acknowledge the concerns expressed, however, the limits and setbacks that are applicable and in place in relation to noise are designed to protect humans. The Position Paper on Wind Turbines and Public Health issued by the HSE in February 2017 determines that current scientific evidence on adverse impacts of wind farms on health is weak or absent with the need for further research and investigative process at a larger scale. The WHO Environmental Noise Guidelines for the European Union issued in 2018 whilst recognising the potential for increased

annoyance risk at levels below 45 dB $_{Lden}$ said it cannot be determined whether this increased risk can impact health. Neither paper references exclusion of persons to whom the limits would be applicable. I am satisfied that should any effects relating to noise, including in relation to low frequency noise, occur that the mitigation measures set out in the application documents will ensure that there will be no adverse impacts on the local population.

12.10.27. While some observers critique the assessment submitted given the turbines are higher than what guidelines anticipated, the applicant's assessment measures relevant effects and presents a robust assessment and demonstrates adherence to adopted criteria. I consider that the likelihood of significant health effects related to the scale of the structure have not been demonstrated.

12.10.28. In terms of construction noise, I am satisfied that the applicant has set out appropriate site management measures and protocols in the EIAR and associated CEMP which generally comprise good practice construction methods. I am satisfied that the implementation of these measures would be sufficient to ensure noise nuisance and disturbance during the construction phase is maintained at an acceptable level. Overall, I do not consider that construction phase noise impacts would be significant and I furthermore note that any impacts are temporary in nature.

12.10.29. The decommissioning phase works will be similar to the construction phase, but of less magnitude given that various elements will be left in situ. I therefore consider it reasonable to draw similar conclusions for the decommissioning phase as those drawn for the construction phase, i.e. that the impacts would be short-term and would not be significant.

12.10.30. With regard to WHO Environmental Noise Guidelines for the European Region, published in 2018, these noise guidelines contain two conditional recommendations in relation to wind turbine noise, whereby recommendations are based on noise exposure levels characterised using the Lden parameter, which is a weighted annual average, more typically used for road noise. For average noise exposure, the GDG conditionally recommends reducing noise levels produced by wind turbines below 45 dB Lden, as wind turbine noise above this level is associated with adverse health effects. To reduce health effects, the GDG conditionally recommends that policy-makers implement suitable measures to reduce noise

exposure from wind turbines in the population exposed to levels above the guideline values for average noise exposure. No evidence is available, however, to facilitate the recommendation of one particular type of intervention over another. The Guidelines state that the acoustical description of wind turbine noise by means of Lden or Lnight may be a poor characterisation of wind turbine noise and may limit the ability to observe associations between wind turbine noise and health outcomes. The guidelines state that the 'conditional' recommendations indicated require "a policy-making process with substantial debate and involvement of various stakeholders. There is less certainty of its efficacy owing to lower quality of evidence of a net benefit, opposing values and preferences of individuals and populations affected or the high resource implications of the recommendation, meaning there may be circumstances or settings in which it will not apply". Conversely, with regard to 'strong' recommendations, which have not been utilised with regard to wind turbine noise, the Guidelines state that these "can be adopted as policy in most situations".

12.10.31. I note that the evidence for health outcomes associated with wind turbine noise, as summarised in Table 36 of the WHO Guidelines, is either stated to be low quality or that no studies were available. The Guidelines also state that "further work is required to assess fully the benefits and harms of exposure to environmental noise from wind turbines and to clarify whether the potential benefits associated with reducing exposure to environmental noise for individuals living in the vicinity of wind turbines outweigh the impact on the development of renewable energy policies in the WHO European Region".

12.10.32. Having regard to the foregoing, I conclude that the WHO Guidelines, while useful in understanding the possible relationship between noise and health issues, are primarily of benefit in terms of informing a policy-making process at a strategic and land use planning policy level, rather than in the case of specific wind energy projects. I note, in this regard, the reported low quality of evidence, the 'conditional' nature of the recommendations and the stated uncertainty with regard to the appropriate noise measurement parameters.

12.10.33. With regard to infrasound noise, I note the commentary in the draft 2019 WEDG, that 'some early wind turbine designs had turbine blades which were downwind of the tower (see Section 2.2). As the blades passed on the downwind

side of the tower significant turbulence caused loud low frequency and infrasonic noise on a consistent basis. Modern wind turbines have the blades upwind of the tower. This has effectively eliminated continuous infrasound elements from wind turbine noise during normal operation'. It is noted however that under some running conditions wind turbines can generate special audible characteristics in the form of amplitude modulation, tonal and low frequency noise at distances of hundreds of metres from the turbine. This amplitude modulation is caused by changes in the amplitude (dB) level of the noise and is related to the rotational speed of the turbine. This is addressed in the EIAR, which notes that normal amplitude modulation can occur, but references two studies which indicates that normal amplitude modulation disappears at around 3 to 4 rotor lengths from the turbines, except in crosswind conditions. With regard to other amplitude modulation, its occurrence is relatively infrequent.

12.10.34. Should the Board be minded to grant permission, I recommend that a suitable condition be included to limit daytime and night-time noise at noise sensitive receptors in line with the WEDG 2006 and that the applicant be required to submit and agree a noise compliance monitoring programme for the proposed development with the planning authority, to include the mitigation measures required to achieve compliance with the noise limits, such as the curtailing of particular turbines. The condition should also require that the results of the initial noise compliance monitoring be submitted to, and agreed in writing with, the planning authority within six months of commissioning of the wind farm.

12.10.35. Subject to compliance with the identified mitigation measures and noise limits and noting the significant separation distances between the proposed turbines and the nearest residential receptors, I do not consider that the proposed development would be likely to have a significant negative impact on sensitive receptors by way of noise disturbance.

Conclusion

12.10.36. I 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.

Material Assets, Cultural Heritage and Landscape

12.11. Material Assets - Other Issues

12.11.1. Chapter 14 of the EIAR addresses 'Material Assets and Other Issues', which covers the following areas:

- Land use – agriculture; forestry
- Telecommunications
- Electricity Networks
- Air Navigation
- Quarries
- Utilities (gas; water; waste)

12.11.2. Traffic is dealt with separately in Section 12.12 hereunder and I refer the Board to that section in relation to material assets associated with traffic and transport.

12.11.3. Land use: The proposed development will result in the change of use of 16.1ha of agricultural land and 7.89ha of forestry will be lost, with impacts rated as slight negative. With regard to mitigation, in its design the construction and operational footprint of the Development has been kept to the minimum necessary to avoid impact on existing land uses and existing roads and tracks serving agricultural and forestry use have been used where possible. The construction and decommissioning works will be planned and managed by a Construction and Environmental Management Plan (CEMP) Appendix 2.1. No adverse residual impacts predicted, with respect to land use, arising from the operational phase of the development. All existing access points (i.e., to domestic premises, business, farms) are accessible during temporary road closures and diversions. This is to maintain local access and avoid impacts on other various land uses. There is no potential for significant cumulative effects in-combination with other local developments. The

construction and decommissioning works will be planned and managed by a Construction and Environmental Management Plan (CEMP) Appendix 2.1.

12.11.4. Telecommunications: Telecommunications providers were consulted about the Development. Three and Eir indicated links in the vicinity. Given advancement in technology, potential effects on television and radio signals from the Development will be negligible and are not considered further. All electrical elements of the Development are designed to ensure compliance with electro-magnetic fields (EMF) standards for human safety. Compliance with the EMC Directive 2014/30/EU will mean that the electromagnetic emissions from devices used will not cause interference to other equipment. In line with the Wind Energy Guidelines 2019, each Developer is responsible for engaging with all relevant telecommunications operators to ensure their proposals will not interfere with television or radio signals by acting as a physical barrier. Therefore, as each project is designed and built to avoid impacts arising, a cumulative impact cannot arise. As raised in an observer submission, the applicant has not engaged with / it is not clear if the applicant has engaged with the six rural wireless broadband service operators in the area. This issue would need to be addressed either by way of a Further Information request or by condition, should the Board be minded to grant permission.

12.11.5. Electricity Networks: All on-site internal cabling will be underground as will the grid connection from the onsite substation to Dungarvan, therefore there will be no impact on the overhead electricity network. The Development will contribute directly and in the long term to the electricity network by strengthening it through additional renewable energy generation. At the existing Dungarvan 110kV substation, the cable will connect into existing infrastructure within the confines of the substation and its compound and thus will have a slight, short term effect. Mitigation by design and avoidance will minimise impacts on existing electricity networks. No significant cumulative impacts are identified.

12.11.6. Air Navigation: The physical height of turbines can cause obstruction to aviation and the overall performance of communications, navigation and surveillance equipment. The IAA standards require aeronautical obstacle warning lights on structures over 150m high scheme and as-constructed maps of the turbines to be submitted to them. In addition the IAA require notification of crane operation 30 days prior to erection of turbines is requested. No significant impacts are predicted in

terms of air navigation. Potential negative cumulative effects on aviation are unlikely during the operational and decommissioning phases.

12.11.7. Quarries: In addition to the borrow pit on site, 20,000m3 of crushed stone will be required and will be obtained from 5 listed licensed quarries in the locality. The use of imported material will have a slight, permanent negative impact on non-renewable resources of the area. This impact is considered to be imperceptible in the long-term. The footprint has been limited through design and mitigation measures in relation to traffic and transport and soil and geology have been addressed in the relevant chapters. No significant residual or cumulative impacts have been identified.

12.11.8. Utilities: Section 12.10 addresses built services of gas, water and waste. There are no gas mains located within the site boundary and there are no existing services along the Grid Connection Route (see, Appendix 12.1) or Turbine Delivery Route. Along the Grid Connection Route, the locations of watermains, fire hydrants, metres and sluice valves were recorded. Potential impacts and mitigation in relation to water and waste are addressed in the chapter on hydrology and hydrogeology and in population and human health. The residual effects of waste produced as a result of the construction, operational and decommissioning phases of the Development are considered to be not significant.

12.11.9. A decommissioning plan be prepared for agreement with the local authority prior to decommissioning.

Overall Conclusion on Material Assets

12.11.10. I have considered all of the written submissions made in relation to material assets and the relevant contents of the file including the EIAR. I am satisfied that the potential for significant adverse 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 impacts on material assets.

12.12. Material Assets – Traffic and Transport

EIAR Overview

12.12.1. Chapter 14 of the EIAR addresses Traffic and Transport and is supported by Appendix 14.1: Pell Frishmann Survey Reports of December 2021 and October 2022 (includes details required to facilitate turbine component deliveries such as verge widening / strengthening, alterations to roundabouts, bridges and junctions, temporary removal of street furniture and signage), and Appendix 14.2: Swept Path Analysis Drawings. The EIAR sets out the methodology, utilising desktop studies, baseline data, and swept path analysis of the Haul Route. Traffic count data from the TII traffic counter on the N72 near the R671 junction was used to inform the location and duration of classified traffic counts carried out on the road network. Classified traffic counts were carried out by Jennings O'Donovan on 18th October 2022 at three locations in the vicinity of the wind farm site to determine baseline traffic volumes for junction capacity analysis.

12.12.2. Table 14.9 of the EIAR indicates results of traffic analysis carried out at the R671 / R672 junction, R671 /N72 and the R672 / N72 junction, which show that the junctions are operating within capacity and can accommodate additional traffic growth in the future.

12.12.3. A 20 month construction programme is envisage. It is stated that the majority of HGV deliveries to site will take place during the first 14 months of the project and will be associated with site road and turbine hardstand construction, construction of turbine foundation bases and substation building.

12.12.4. Access to the wind farm site will be from a new priority T-junction constructed on the R671. The R671 runs in a north-south direction from the N25 to its junction with the R672 and will be used by all construction traffic to access the site. The R672 runs in a north-south direction from Dungarvan to Cappaquin.

12.12.5. Haul Route: It is proposed that the turbine nacelles, tower hubs and rotor blades will be landed in Belview Port (Port of Waterford). From there, they will be transported to the site via the N29, N25, N72, and R672, L5071 and R671, using specialised abnormal load vehicles. Detailed analysis of the proposed turbine haul route between the R761 and the site entrance have been carried out. The delivery of the turbines to the site will require co-ordination with a number of statutory bodies including Transport Infrastructure Ireland (TII) Waterford City and County Council, and An Garda Síochána. All details will be set out in the Traffic Management Plan.

12.12.6. Grid Connection: The overall length of the grid connection between the on-site substation and the existing Dungarvan 110kV substation is 16.8km, of which 16,432m is located along the public road corridor. 368m of the route is within the site lands.

EIAR Potential Effects

Construction Phase, Likely Significant Effects

12.12.7. The main sources of traffic during construction will include HGV's delivering construction materials to and from site, abnormal load vehicles transporting turbine components from Waterford Port to site, HGV's removing unsuitable material from site, HGV's and plant involved with grid connection works on the public road and construction operatives visiting the site in cars and light goods vehicles. The main impact of works will be increase in journey times for existing road users and increased noise and vibration due to construction works.

12.12.8. Table 14.11 contains details of the estimated HGV deliveries to the site during the construction period. It is estimated that approximately 5,944 loads will be delivered to site. This breaks down to approximately 297 loads per month or an average of 83 per day ranging between 3 to 141 loads (per day) excluding Sundays and bank holidays. The peak number of deliveries per day will occur during the concrete pour for Turbine Foundation construction. An estimated 102, depending on the capacity of the concrete truck (6 or 7m3), concrete truck deliveries will be required per turbine foundation. Some other materials will also be delivered on such days, so a realistic estimation of peak deliveries is approximately 141 deliveries per day (for at least 20 separate days in the construction programme when the Turbine Foundations will be poured).

12.12.9. The construction of the 110kV grid connection will be carried out under a number of phased operations which will involve traffic management. The phased works will require traffic management to be removed and reinstalled a number of times over the course of the project. The gird connection and haul route works (described in appendix 14.1) will be carried out under a road opening licence and traffic management plan approved by Waterford City and County Council. The EIAR rates these works as having a slight, negative, temporary effect on residents, businesses and road users due to increased noise and vibration resulting from

construction activities and increased journey times and delays due to temporary traffic management. However, these effects will be confined to a very short period during the construction phase, prior to the delivery of turbine components, and hence are not predicted to have a significant effect. Once works have been completed, the works will be reinstated to their pre-existing condition in accordance with the "Guidelines for Managing Openings in Public Roads" and the requirements of Waterford City and County Council.

12.12.10. Traffic increase and air quality: The increase in traffic movements on the regional and national road network will average approximately 160 (two way) trips per day over a short-term period and therefore the effect of the Development on air quality will be imperceptible. Construction HGV's, LGV's and private vehicles are subject to government HCV, LCV, ADR and NCT emissions tests. Similarly, effects from noise and vibration of HGV are not predicted to be significant based on traffic volumes and short-term nature of the construction work.

12.12.11. Road Traffic delays: Traffic analysis carried out for the development shows that delays of approximately 40 to 50 seconds can be expected at temporary traffic lights on the N72 and the R672 during 110kV grid connection works. Traffic analysis for the R671 / R672 junction near the wind farm site entrance shows that the junctions will operate within capacity and will not cause significant delays for motorists during the construction period. Abnormal load deliveries will be carried out with an abnormal load permit and timed to take place outside of peak times, possibly at night, and therefore the potential effects are not considered to be significant.

Operational Phase, Likely Significant Effects

12.12.12. It is assumed that the wind farm will be unmanned once operational and will be remotely monitored. The operation of the windfarm would require 1-2 visits to the site per week by trained personnel and/or accompanied visitors. Parking will be provided outside the existing substation and at turbine entrances. It is estimated that the traffic volumes that will be generated by the development once it is operational will be minimal.

Decommissioning Stage

12.12.13. The total volume of HGV traffic will be relatively small compared to the construction period assuming Turbine Bases, Site Access Tracks and Turbine

Hardstands will remain insitu, landscaped and allowed to revegetate with only the turbines, sub station building materials and electrical equipment being removed from site for recycling/reconditioning. This phase could be expected to last approximately 16 weeks. If Site Access Tracks and Turbine Hardstands are left in place and revegetated, the effect is predicted to be an imperceptible effect on traffic.

Cumulative Impacts

12.12.14. Cumulative impacts are considered to be slight, negative, short-term and low probability in nature. There was also a slight positive residual effect identified in terms of the works on the Haul Route resulting from road and junction improvements at works locations along the route with improved surfacing and increased visibility resulting from removal of vegetation for abnormal loads.

EIAR Mitigation Measures

Construction Phase Mitigation Measures

12.12.15. The construction phase will be carried out in accordance with the CEMP, included as Appendix 2.1 of this EIAR, which shall be agreed with the relevant Local Authority. Impacts on roads and traffic will be further mitigated by a Traffic Management Plan which shall be agreed with the relevant Local Authority.

Operational Phase Mitigation Measures

12.12.16. No mitigation measures are required for the operation phase given the low level of traffic generation involved.

EIAR Residual Impacts

12.12.17. Subject to the implementation of the mitigation measures during the construction and decommissioning phases no residual impacts are anticipated.

12.12.18. The Development has generally been assessed as having the potential to result in effects of a negative, slight/moderate, direct, short-term, high probability effect or lower during the construction and Decommissioning phase only. After mitigation, the residual effects have been assessed as imperceptible/slight, negative and short-term in nature. There will be a slight positive residual effect from verges having been widened at locations along the Haul Route. This effect could be temporary or permanent depending on the preference of Waterford City and County Council.

Assessment of Likely Significant Effects

12.12.19. A number of observers have raised issues relating to traffic and transportation, including road safety, capacity to accommodate HGV traffic, and impacts on other road users, as well as the source of stone from quarries, amount required and excessive distance to be travelled.

12.12.20. The submission from Waterford County Council raises concerns in relation to impact on local roads during construction.

12.12.21. Having regard to the nature and scale of the proposed development, it is clear that the greatest potential for negative impacts on traffic and transportation arises during the construction phase, since there will be minimal traffic generated during the operational phase.

12.12.22. 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 site and the low level of traffic currently utilising the roads. While I accept that there are likely to be short-term temporary negative impacts on the receiving environment due to construction traffic, they are of a type that lend themselves to effective mitigation through a comprehensive CTMP and suitable planning conditions.

12.12.23. There may be times, such as during the pouring of the turbine foundations, where HGV movements are concentrated, due to the need to complete sizable concrete pours in a timely manner. However, noting that only 12 no. turbines are proposed, such occurrences would be limited in number and duration and would be capable of being mitigated to an acceptable level by means of agreement and implementation of a TMP.

12.12.24. With regard to turbine component deliveries, the total number of such movements will be limited given that only 12 no. turbines are proposed, and the specialised nature of such deliveries means that it will be done under highly controlled circumstances, with a convoy, escort vehicles, garda escort etc. I consider the temporary works and mitigation measures required to move components will not have a significant negative impact on residential amenity of dwellings in proximity and the land will be restored when finished. I am satisfied that the suitably controlled

delivery of turbine components can be achieved without impacting on public safety by reason of a traffic hazard or otherwise impacting on traffic and transportation.

12.12.25. The TII raise a number of issues with the proposed grid connection route and potential impact on safety and strategic function of the national road network; traffic management issues, load bearing etc. 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, flag men 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 the TII, planning authority, and observers.

12.12.26. I note the concern from Tipperary County Council that consideration of use of quarries within their administration on their local road network has not been considered in the EIAR. The EIAR sets out four possible sources for aggregate and the distance between these quarries and the site (ranging from 10-59km). I consider the exact suitability of stone and supply availability cannot be predetermined at this stage, however, the applicant has considered a number of quarry sources in terms of distances involved. There are existing road networks serving these quarries. I have no reason to believe that there is such limited capacity in the existing road network serving these businesses as would warrant a refusal on traffic grounds. I further note that impacts arising during the construction phase will be limited in duration.

Road Condition

12.12.27. I note that such surveys and reinstatement requirements, including the imposition of bonds for the satisfactory completion of such works, have been imposed by the Board on other wind farm developments, by way of condition, which I consider appropriate given the temporary nature of construction works and the negligible level of operational traffic. This matter can be adequately addressed by way of condition, should the Board be minded to grant permission.

12.12.28. Should the Board be minded to grant permission, I recommend that conditions be included requiring that the Construction Traffic Management Plan be submitted for the agreement of the planning authority prior to the commencement of development.

12.12.29. Subject to the mitigation outlined in the EIAR and the above mentioned recommended conditions, I consider that there would be a negative impact on the locality due to the construction traffic, but that this can be mitigated such that the impacts would not be significant. 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

12.12.30. In the operational phase I concur with the applicant's assessment that the impacts will not be significant, due to the nature of the proposed development and the minimal traffic it will generate. With regard to the decommissioning phase, the nature of works will be similar to the construction phase, but the extent of works will be substantially less. 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.

Conclusion

12.12.31. 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.

12.13. Cultural Heritage

EIAR Overview

12.13.1. Cultural Heritage is addressed within Chapter 13 of the EIAR.

12.13.2. The assessment includes desktops studies and field surveys of the site and grid and haul routes. The principal sources reviewed for the assessment of the recorded archaeological resource were the Sites and Monuments Record and the Record of Monuments and Places. The Record of Protected Structures and the National Inventory of Architectural Heritage were consulted for assessing the

designated architectural heritage resource. Other sources consulted include Archaeological Inventory of County Waterford, Heritage Council of Ireland Map Viewer, Topographical Files of the National Museum of Ireland, Database of Irish Excavation Reports, Literary Sources, Cartographic Sources, Aerial and Satellite imagery, Irish National Folklore Collection, and UNESCO designated World Heritage Sites and Tentative List.

12.13.3. The assessment of impacts on visual setting was undertaken using both the Zone of Theoretical Visibility (ZTV) map in the Landscape and Visual Impact Assessment (LVIA), as presented in Chapter 11 of the EIAR, and also photomontage / wireline technology.

12.13.4. A study area of 1km from the site boundary was adopted to compile a baseline of known cultural heritage resources and a 100m wide area centred on the grid connection and haul routes was adopted to establish baseline along those routes. A wider 10km study area was also adopted to determine the presence of any nationally significant cultural heritage assets with heightened visual sensitivities. A review of the assessment of the significance of visual impacts on publicly accessible cultural heritage receptors within 20km of the proposed development as presented in the Landscape and Visual Amenity Assessment chapter of the EIAR was also carried out and this does not predict any significant visual impacts on any cultural heritage receptors within this area.

12.13.5. There are 18 recorded archaeological monuments within a 1km area of the proposed wind farm site, as detailed in Table 13.5 of the EIAR, 4 of which are within the site boundary and referenced in Table 13.9 in addition to other features. There are 9 recorded archaeological monuments located within 10km with potential visual alignments and these are detailed in Table 13.6 of the EIAR. As noted in the EIAR, cultural heritage also includes various undesignated assets such as demesne landscapes, vernacular structures as well as intangible assets such as folklore, placenames and historical events and associations. Table 13.9 considers derelict farm buildings, a 19th century roadway, townland boundaries and one upland cairn feature. The 12 identified constraints within the 100m area of the grid connection route, including their published inventory entries, are presented in Table 13.8. The turbine delivery route was also investigated where works are proposed to the route.

EIAR – Potential Effects

Construction Phase, Likely Significant Effects

12.13.6. The construction phase will not result in any predicted direct impacts on the known archaeological resource. Unrecorded, sub-surface archaeological remains are indeterminable and the potential exists for direct, negative impacts on any examples that may exist within proposed development areas, and this will require mitigation.

12.13.7. The development will result in localised direct impacts on two field boundary banks that form sections of townland boundaries between Lisleaghmountain and Lickoranmountain and between Lisleaghmountain and Dyrick. It is stated in the EIAR that an inspection of these features revealed that they are similar in form to other field boundaries in surrounding fields and do not contain any notable attributes. The construction phase will result in direct, permanent, low magnitude, slight, negative impacts on these elements of the undesignated local (low value) cultural heritage resource.

12.13.8. One masonry stone bridge is listed as a protected structure along the grid connection route.

Operational Phase, Likely Significant Effects

12.13.9. Operational phase impacts relate to the visual impact of turbines on the setting of cultural heritage sites. As noted previously, there are four recorded archaeological sites within the Site and an additional fifteen examples located within 1km of its Redline Boundary (Figure 13.1). In addition, a small upland stone cairn of unknown date identified c.60m from the Turbine 13 hardstand during field surveying is tentatively interpreted as a feature of archaeological potential. The impacts are rated as comprising a range of long term, indirect negative impacts of a visual nature on the wider setting of archaeological sites within the environs of the site which will range from imperceptible to moderate in significance.

12.13.10. Within an area of 10km from the site, one identified example has a potential direct alignment towards the Site, and this comprises a standing stone pair (TS091-005----) located 3.1km to the northeast. The EIAR states that given its distance from the Site and its inaccessibility, the potential indirect, negative impact on its wider

setting is appraised as being low in magnitude and slight in significance. Given the distances of the other monuments with visual alignment attributes from the site in combination with the absence of recorded direct visual alignments towards its location, no predicted moderate or significant indirect negative impacts on their settings are predicted and likely slight indirect impacts on their wider settings will be reversed following the decommissioning phase.

Decommissioning

12.13.11. The decommissioning of the development will result in the reversal of the long term, indirect, negative visual impacts on archaeological monuments located within the surrounding landscape.

Cumulative Impacts

12.13.12. No significant cumulative impacts have been identified.

EIAR Mitigation Measures

12.13.13. Mitigation by design has influenced the layout to avoid known locations of archaeological monuments.

12.13.14. The following mitigation measures are proposed for recorded monuments within the site:

- Minimum 25m radius concentric buffer zones around the external-most elements of Standing Stone (WA013-021----), Standing Stone (WA013-020002-), Hut Site (WA013-020001-), Ringfort (WA013-022----) and the location of a cairn feature located c.60m to the southwest of Turbine 13, which is tentatively identified as being of archaeological potential.

- Buffer zones will be securely fenced off and their locations will be clearly signed as ‘No Entry’ for the duration of the construction phase.

- No ground excavation works of any kind (including but not limited to advance geotechnical site investigation) and no machinery, storage of materials or any other activity related to construction will occur within these buffer zones.

- The location of the derelict farm buildings within the Site will also be clearly signed as “No Entry” during the construction phase. The locations of these onsite

archaeological monuments and farm buildings will also be identified as ‘no-entry’ areas during the construction phase site inductions.

- Ground works during the construction phase will be subject to archaeological monitoring.
- A programme of archaeological field-walking surveys will be carried out within construction areas in forestry plantations following tree felling to confirm the conditions predicted in this assessment, i.e., that they contain no visible surface traces of potential unrecorded archaeological or architectural heritage sites.
- Proposed felling methodology at Turbine 6 will incorporate specific measures and equipment to avoid impacts on a levelled hut site and a standing stone in proximity. This work will be subject to licensed archaeological monitoring.

12.13.15. With regard to the grid connection route (GCR), a specific methodology for HDD at a masonry bridge will be employed to avoid impacts. Along the GCR, mitigation measures include inter alia as set out above, archaeological monitoring.

EIAR Residual Impacts

12.13.16. There is a potential slight/moderate range of significance of effect in the context of residual impacts on the unrecorded archaeological resource.

12.13.17. Development will result in a range of long term, indirect negative impacts of a visual nature on the wider setting of archaeological sites within the environs of the Site which will range from imperceptible to moderate in significance. Given the nature of the wind farm turbines there are no mitigation measures that can address these indirect setting impacts.

Assessment of Likely Significant Effects

12.13.18. Observers raise issue with the extent of the cultural heritage assessment of the site, considering there to be deficiencies in relation to cultural heritage, lack of understanding of non-tangible heritage of the area, lack of reference to Slibh gCua, and proximity of the proposed turbines and haulage route to monuments to be protected is of concern. I note a detailed paper on cultural heritage has been submitted by an observer.

12.13.19. I have reviewed the methodology and resources referenced in the EIAR. There is additional knowledge presented in observer submissions in terms of the immediate local heritage which would have been useful for the applicant to include and I have reviewed these as part of my assessment. Overall, I consider the EIAR has sufficiently captured the main cultural elements of importance in the immediate vicinity and I have sufficient information before me to undertake a robust assessment.

12.13.20. A submission from the Department of Housing Local Government and Heritage (2nd August 2023) states that the department is broadly in agreement with the findings of the Archaeological Impact Assessment (AIA) submitted, however, concerns are raised in relation to the application of the methodology of the assessment to the site. While all national monuments within 10km of the site were proposed to be assessed for indirect impacts, the Department notes that two sites with preservation orders on them were omitted from the assessment, namely Church and Graveyard at Clashganny East, Co. Tipperary and Archaeological Complex at Coumaraglinmountain, Co. Waterford. It is stated that review of the ZTV mapping in relation to the church at Clashganny suggests the potential impact would be extremely low, nonetheless the potential impacts on this receptor should have been assessed. In relation to the archaeological complex referenced it is noted that this is a complex of 116 individual and inter-related monuments which are individually vulnerable to impacts on settings/visual impacts as well as being collectively vulnerable in terms of the overall complex, 40% of which lies within 10km of the site. The AIA assessed three individual components of the complex but there were not assessed as part of the archaeological landscape and while a viewpoint, VP22, is relevant to the complex and was rated as high sensitivity in terms of its vulnerability. While all 12 turbines would be visible, the significance of the impact as moderate-slight negative was incorrectly assessed given the entire complex was not a factor in selecting the viewpoint or in the evaluation. If FI is being requested the Department request that this issue be addressed.

12.13.21. I note the visual impact of the turbines is the main element of the development which could give rise to impacts on the setting of a monument or group of monuments and dominance in the wider landscape. For purposes of assessing the visual impact on settings, the EIAR considers a 10km study area, however, as noted

above two archaeological features where not considered and one of these could have significant effects. In light of the importance of the Archaeological Complex at Coumaraglinmountain, Co. Waterford, Further Information would be warranted to enable a complete assessment of the impact of the proposed development on the wider archaeological complex. Any further information requested could also resolve and address issues raised in the observer submission on the specific cultural heritage of this area. However, given the substantive issues raised elsewhere in this report in relation to material contravention of the development plan policy, I do not consider further information in this instance would be warranted or is necessary.

12.13.22. Observers raise concerns in relation to potential for damage during construction of existing recorded monuments and for unrecorded monuments, particularly given the rich history of the area. I note the Department has not raised any concerns in relation to the mitigation measures proposed and I am satisfied that subject to implementation of the CEMP, the cultural heritage of the area will not be negatively impacted upon.

Conclusion

12.13.23. I have considered all of the written submissions made in relation to cultural heritage and the relevant contents of the file including the EIAR. I am not satisfied that an adequate baseline assessment has been undertaken in light of the submission from the Department and therefore I cannot conclude that the proposed development would not have any unacceptable direct, indirect or cumulative impacts on cultural heritage.

12.14. Landscape

EIAR - Overview

12.14.1. Chapter 11 addresses Landscape and Visual Amenity and is supported by a portfolio of photomontages (figure 11.2 to 11.2) provided as a separate booklet and by Appendix 11.1 of the EIAR, Visual Impact Assessments at VPs. The methodology and guidance documents followed are set out.

12.14.2. The assessment included a desktop study and site visits with the tools used to assist in the assessment of visual effects including ZTV maps and photomontages. The EIAR generally considers landscape and visual impacts within a 20km radius

study area, in accordance with the recommendations of the WEDG 2006 for blade tips greater than 100m. In order to focus on receptors and effects within the central study area where there is higher potential for significant impacts to occur, the EIAR also defines a 'central study area' within 5km of the site.

12.14.3. The assessment utilises visibility mapping, establishing a Zone of Theoretical Visibility, representative viewpoints, and photomontages. 30 viewpoints from representative / sensitive visual receptor locations are included. Photomontages have been prepared for the viewpoints and the figures also include a wireline of the development on its own and a wireline with all other cumulative developments.

12.14.4. The site is located in an area of agricultural farmland, forestry, and upland heath, with sporadic rural housing. The site is located at the south-eastern extent of the Knockmealdown mountain range. The western, northern and southern extents of the site are typically more elevated than the central and eastern extents of the site. The site is broadly surrounded by the three main peaks of Knocknasheega (428m) west of the site boundary, Broemountain (430m) in the northern extent of the site, and Dyrick Hill (286m) within the southern central portion of the site. The site is generally topographically elevated in the north / north-west and generally topographically low lying in the south and east with elevations ranging from 130m to 190m, with the exception of Dyrick Hill (286m) near the southern extent of the site.

12.14.5. As per the Waterford City and County Development Plan 2022-2028 (Appendix 8, Landscape and Seascape Character Assessment), the site straddles the uplands and foothills landscape character types. The site also straddles the landscape sensitivity classifications ranging from most sensitive, to high, to low (Map A8.3 of the operative development plan).

12.14.6. As per my reading of Figure 11.5 of the EIAR, the majority of the site which comprises Turbines T4, T6, T8, T13, T12, T11, T10, and T9 is within a landscape designated as **most sensitive**, where:

> '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.

12.14.7. Turbines T3 and T5 are in an area designated as high sensitivity and T1 and T2 are in an area of low sensitivity (note: from figure 11.5 two of the turbines appears to straddle sensitivity areas, however, as the EIAR does not categorically state which they fall within and the maps are in figure form, I have erred on the side of caution in my reading of figure 11.5).

12.14.8. The proposed turbines are located in an area which the development plan categorises as an Exclusion Area for wind energy development (with the other categories being Preferred and Open for Consideration). The applicant states in the submitted chapter of this EIAR that the previous designation was open to consideration and preferred and states it is ambiguous as to how this area is now classified as an exclusion area. I note that the development plan as adopted was prepared with due regard to current national and regional climate action and planning policy, and was subject to public consultation and evaluation by the Office of the Planning Regulator for compliance with said policy.

12.14.9. The EIAR considers the adjoining landscape designations of the Tipperary County Development Plan 2022-2028. A 'Primary Amenity Area' and a 'Secondary Amenity Area' designation occurs along the Waterford – Tipperary boundary and the landscape designations of the development are set out and the sensitivity of the landscape is rated as 'vulnerable', with a 'very low' capacity, and is described as 'areas to be avoided on account of a very significant potential for change of appearance or character due to the presence of development or use'. The guideline suggested for this sensitivity designation is to 'Control unavoidable new developments or uses, or the intensification or expansion of established patterns of use and settlement – unless they can demonstrate capacity to sustain existing appearance and character'. The adjoining area is designated as being an 'Area Unsuitable for New Energy Development'.

12.14.10. A Zone of Theoretical Visibility is established as per Figure 11.8. The potential visual receptors were identified based on category type: key views from national or international monuments, designated scenic routes and scenic views, local

community views, centres of population, major routes and amenity and heritage features.

12.14.11. The following scenic views from the Waterford City and County development plan are relevant to the site and considered in the EIAR assessment of the ZTV: SR2 – SR8; SR10; SR11; SR16; SR22. The Tipperary County Development Plan scenic views relevant are referenced as View 17, View 37, and View 38.

12.14.12. In the context of the central 5km study area, the landscape sensitivity is deemed to be Medium due to its robust working transitional character, with some stated localised parts much more susceptible to change, such as Mount Mellary Abbey (VP18) and the more elevated lands on the western periphery of the central Study Area.

12.14.13. With regard to the wider study area of 20km, it is stated that the area is richly diverse in terms of its landscape values and sensitivities. Whilst the predominance of the landscape is a typical rural landscape and is cloaked in a 'Low sensitivity' classification in the Waterford CDP, the highly prominent landscape features, such as the Knockmealdown Mountains, Comeragh and Monavullagh Mountains and the broad sweeping river valleys, have a considerable visual influence over the wider landscape context. It is stated in the EIAR that it is considered that the wider landscape has an overriding Medium landscape sensitivity, albeit some parts of the Study Area, such as the uplands, river valleys and the coastline, have a landscape sensitivity of High and in some cases Very High.

EIAR – Potential Effects

Do-Nothing Scenario

12.14.14. If the Development does not proceed, lands within the redline boundary of the site will continue to be operate as per existing purposes. This would have a neutral effect.

Construction Stage, Likely Significant Effects

12.14.15. The EIAR states there will be some construction stage effects on landscape character generated by the intensity of construction activities (workers and heavy machinery) as well as areas of bare-ground and stockpiling of materials as identified in the Construction and Environmental Management Plan (CEMP). Such effects will

be temporary/short term in duration and are not considered to be significant. Overall, construction stage landscape effects are considered to be of a High-medium magnitude. 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.

Operational Stage, Likely Significant Effects

12.14.16. The operational phase visual effects of the turbines have been assessed using the ZTV, the route screening analysis and the photomontages.

12.14.17. The EIAR states that the effect therefore, is one of intensification and extension of an established land use in this landscape and not the introduction of a new and unfamiliar feature, given the presence of turbines within 20km of the site. It is stated that due to the broad scale of the landform, landscape elements and land use patterns, that the proposed windfarm will be well assimilated within the 5km central study area. It is stated that the broad hills and ridges in the immediate surrounds of the wind farm site comprise a notable utilitarian character due to the presence of working rural land uses such as agriculture and commercial scale forestry and it will not detract significantly from the production rural character of this foothill landscape.

12.14.18. The magnitude of the landscape impact is rated as 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.

12.14.19. 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.

Decommissioning Phase

12.14.20. The decommissioning phase will see a similar nature of effects to the construction stage due to the movement of heavy machinery within the site and to and from the site removing turbine components. However, such effects will be temporary in duration and decreasing in scale as turbines are removed from view and the landscape is substantially reinstated to former uses. As with construction stage impacts, decommissioning stage effects are not considered to be significant.

Cumulative Impacts

12.14.21. The magnitude of cumulative effect in relation wind farms within the 20km Study Area is deemed Low, however, considering the future development of Coumnagappul wind farm, it is deemed to be medium. Overall there is a limited number of existing/permitted developments within the central Study Area (1 single turbine development) in addition to the considerable offset distance between all other existing and permitted development within the wider study area.

EIAR Mitigation Measures

12.14.22. Mitigation during the operational stage is stated to be achieved through careful siting and design in accordance with the Wind Energy Guidelines, which minimises landscape and visual effects.

EIAR Residual Impacts

12.14.23. Table 11.9 comprises a Summary of Visual Impact Assessment at Representative Viewpoint Locations. Of the 30 viewpoints, the impact significance is rated as Substantial-Moderate for 5 locations (VP11, VP12, VP14, VP16, VP17), with these related to local community views; Moderate for 5 locations (VP8, VP13, VP19, VP20, VP21) with these related to local community views, with VP8 located to the north of Broemountain; Moderate-slight for 5 locations (VP7, VP15, VP22, VP23, VP24); and Slight-imperceptible and Slight for the remaining 15 locations.

12.14.24. In terms of scenic routes and scenic view designations, the EIAR states that the significance of visual impact at such locations ranges from Moderate to Slight imperceptible, thus, impacts at scenic designations within the study area are not considered to be significant. The scenic locations identified are VP7, VP19 and VP20, which is associated with Scenic Route 2 (SR2) and Glenshelane Valley. SR8

is associated with VP7, VP13 and VP25. In terms of the upland areas, the clearest and most elevated view is stated to be from VP22, which is linked with SR10.

12.14.25. With regard to local community receptors, the EIAR states that whilst the turbines will present at a considerable scale from some of the nearest local community receptors, they do not generate any notable sense of over-bearing, nor do they appear out of place in this relatively robust transitional foothill landscape that is influenced by typical foothill land uses such as commercial forestry and agricultural farmland. Thus, it is not considered that the proposed development will generate significant visual impacts at local community receptors and a rationale is set out in section 11.4.3.2 and 11.4.3.3 of the EIAR.

12.14.26. In respect of Centres of Population within the study area, Touraneena (c.3km east) is represented from VP13, where all the turbines will be visible, however, given the highly legible nature of the view, with generous spacing, and no interference with the view of the Knockmealdown Mountains foothills and wider uplands to the west. It is considered in the EIAR that the proposed development will not result in significant visual impacts on a centre of population.

12.14.27. In respect of major route receptors, views from the N25, N72, R671 and R672 are considered and it is stated in the EIAR that no significant visual impacts will occur and a rationale is given in section 11.4.3.4 of the EIAR.

12.14.28. In respect of heritage and amenity features within the Study Area, there are represented in VP3, VP4, VP5, VP6, VP7, VP10, VP18, VP22, VP25 and VP28, and as is the case with other viewpoints there is overlap with scenic views, major routes and other visual receptors. The EIAR states that the proposed development will not result in significant visual impacts and a rationale is given in section 11.4.3.5 of the EIAR.

Assessment of Likely Significant Effects

12.14.29. A number of observers raise concerns in relation to visual impacts on their residential properties and reject the conclusion of the EIAR in terms of significance of effects on views and landscapes. Observers also raise a number of issues in relation to landscape and visual impact, in particular the visual impact on Dyrick Hill and to the accuracy of the photomontages and the representative viewpoints chosen. The planning authority in their submission strongly rejects the findings and conclusions of

the EIAR in a number of areas, including 'as they relate to the visual impacts of the proposed development on this sensitive upland area', however the submission does not elaborate on which viewpoints in particular raise concern. I also note the submission from Tipperary County Council which indicates that it is concerned that the proposed development by reason of the nature of the proposal and its proximity to sensitive landscapes will affect the setting and character of sensitive landscapes in Tipperary.

12.14.30. I have inspected the site and the surrounding area and have examined the photomontages submitted, and I have reviewed all submissions made. I consider the photomontages submitted are sufficiently representative of views in the area and adequate for the purposes of the assessment and I note wireline presentations of each photomontage have been submitted where no vegetation is considered.

12.14.31. I consider that construction phase effects would not be significant from a landscape and visual perspective, and it is the operational phase effects which require further consideration.

Potential Landscape Impacts

12.14.32. It is stated in the EIAR that 'whilst the turbines will be often viewed in the context of some of the sensitive and susceptible upland parts of the Knockmealdown Mountains, there is a strong sense that the turbines are located within the more robust foothill landscape as opposed to the more scenic and naturalistic uplands'.

12.14.33. I note the sensitivity designation of the landscape relating to the application site, as per the Waterford City and County Development Plan 2022-2028 and that to the north of the site within the administrative area of Tipperary County Council. I note the site is, as per stated in the EIAR, located between the Knockmealdowns Uplands and the Tooannena Foothills, with the 'least sensitive' designation where turbines T1 and T2 are located. Where the land rises up at T3 and T5, these are located in a 'high sensitivity' area. I agree that these locations appear to be in a buffer area where the landscape character is influenced by forestry and farming and is different to the character of the landscape to the east of the site, which is in the 'most sensitive' designated area and where proposed turbines T04, T06, T08, T13, T12, T11, T10, and T09 are located. I note in this 'most sensitive' area the development plan states:

‘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.

12.14.34. While the site does comprise a number of working farms including dairy farms in the lowlands part of the landscape to the southeast and is robust in this regard, the turbines would represent a material intervention on the skyline and there are significant views of the site from the east from higher ground and scenic areas, as well as from the west and from north from within the uplands. Overall, I consider that the impact of the turbines on the landscape character when viewed from surroundings would be significant in terms of the character, integrity and uniformity of the landscape and therefore the proposal would be contrary to policy objective LO2: Protecting our Landscape and Seascape, ‘We will 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’.

Potential Visual Impacts

12.14.35. Due to the scale of the turbines, I acknowledge their visual impacts cannot be effectively mitigated (such as by screening vegetation). The careful location, design and layout of the turbines is therefore the only effective means of reducing the impacts.

12.14.36. In terms of the visual impacts from the closest residential receptors, there is no question that their visual amenities will, in many instances, be materially altered. Certainly the turbines are significant in height and scale, however, I note that the nearest sensitive receptor that is not directly involved in the project, property no. H93, is 754 metres away from the nearest turbine (T9). This materially exceeds the 500m requirement of the current 2006 wind energy guidelines. I accept that the said guidelines were prepared at a time when turbines were generally of a smaller scale

and height, however, having regard to the 2019 draft wind energy guidelines a setback distance for visual amenity purposes of 4 times the tip height of the relevant wind turbine is recommended which, in this case, equates to 740 metres. The setback distances proposed by the applicant exceeds this. I do not consider that there would significant negative visual effects on existing residential dwellings.

Conclusion

12.14.37. I acknowledge that there is a balance to be achieved in assessing impacts on landscape character and visual impact against the benefits of a wind farm proposal which will in time become part of the existing working landscape of a rural area and which goes to tackling climate change and reductions in greenhouse gas emissions. However, based on the location of the site and the relevant development plan designations in relation to the landscape associated with the site, I consider development plan objective LO2 would be undermined by the proposed wind farm development.

12.14.38. I have considered all of the written submissions made in relation to landscape and the relevant contents of the file including the EIAR. I am not satisfied that potential impacts would be avoided, managed and mitigated by the measures which form part of the proposed scheme, therefore I have concerns that the proposed development would have unacceptable direct, indirect or cumulative effects in terms of landscape.

12.15. Interactions

12.15.1. Chapter 17 of the EIAR addresses interaction of impacts with a matrix provided in Table 17.1. I would concur that the most dynamic interactions pertain to human beings with other interactions between biodiversity, soils, hydrology, air quality and noise and between land and soil, water and air and climate.

12.15.2. I have considered the interrelationships between factors and whether these might, as a whole, effect the environment, even though the effects may be acceptable when considered on an individual basis. In my assessment of each environmental topic, I have considered the likelihood of significant effects arising as a consequence of interrelationship between factors. Most interactions e.g. the impact of noise and air quality on the population and human health are addressed under individual topic

headings. Given the generally modest impacts which are predicted to occur having regard to the nature of the proposed development, mitigation measures, or as a consequence of proposed conditions, I do not foresee any likelihood of any of these interrelationships giving rise to significant effects on the environment.

12.15.3. In conclusion, I am satisfied that there are no such effects and, therefore, nothing to prevent the approval for the development on the grounds of interaction between factors.

12.16. Reasoned Conclusions on Significant Effects

12.16.1. Having regard to the examination of environmental information contained above, and in particular to the EIAR, and the submissions from the planning authority, prescribed bodies and observers, the contents of which I have noted, it is considered that the main significant direct and indirect effects of the proposed development on the environment are as follows:

Biodiversity and Ornithology: Habitat loss associated with construction will impact on dry heath habitat, which is an Annex I habitat of national and international importance under the Habitats Directive, and the loss of dry acid grassland of local value. This habitat loss will affect the foraging and breeding area of hen harrier, an Annex I species under the Birds Directive, as well as other birds 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. Furthermore, on the basis of methodology and timing of surveys in relation to breeding birds, insufficient information has been submitted to allow for a complete assessment.

Landscape and Visual: Landscape Impacts on sensitive uplands areas will not be avoided, mitigated, or otherwise addressed by means of condition.

Cultural Heritage: Significant adverse impacts cannot be ruled out in relation to archaeology due to an incomplete consideration in the EIAR of all sites of archaeological importance in the wider area.

Material Assets: Impacts on roads and traffic will arise from construction activities. These impacts can be mitigated during construction by the measures set out in the Environmental Impact Assessment Report and by a Traffic Management Plan and

Construction Environmental Management Plan. The main impacts will occur during the construction stage which will be short-term and temporary. Impacts during the operational stage would be negligible.

Population and Human Health: Shadow flicker during the operational phase could impact negatively on sensitive receptors in the vicinity of the site. These impacts are to be mitigated by a curtailment strategy for all turbines that have the potential to cause an exceedance in the existing daily and annual shadow flicker limits.

Water: Potential indirect effects could be caused by the increase in run-off, soil erosion and sediment release into the receiving watercourses. Impacts to surface water and ground water would be mitigated by the implementation of the measures set out in the Environmental Impact Assessment Report, the Construction Environmental Management Plan, Surface Water Management Plan and the Hydrological and Hydrogeological Assessment.

Noise impact: Effects will arise from construction activities such as site preparation and construction of the turbine foundations and roads. A suite of mitigation measures to manage noise during the construction phase are set out in the Environmental Impact Assessment Report. Predicted operational noise levels will be within the relevant best practice noise criteria for wind farms. Post commissioning monitoring will be necessary to ensure the operational noise levels comply with the relevant day and night-time criteria.

Air and Climate: Positive environmental impacts will arise during the operational phase from the generation of renewable energy with the displacement of CO_2 from the atmosphere arising from fossil fuel energy production.

12.16.2. The EIAR considered the main significant direct and indirect effects of the proposed development on the environment. It has not been demonstrated that the effects on biodiversity, ornithology, landscape and visual effects and archaeology/cultural heritage, which are described in the EIAR, can be mitigated by the measures described.

12.16.3. Thus, having regard to the foregoing assessment, I am not satisfied that the proposed development would not have any unacceptable direct or indirect effects on the environment.

13.0 Appropriate Assessment

13.1. Introduction

13.1.1. 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

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

13.2.1. 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.

13.2.2. The proposed development at Dyrick Hill, Co. Waterford, comprises a windfarm development of 12 turbines and associated infrastructure, grid connection route, and a haul route. The proposed development is not directly connected to or necessary to the management of any European site and therefore is subject to the provisions of Article 6(3).

13.2.3. The application is accompanied by a Screening Report and a Natura Impact Statement (NIS) prepared by Doherty Environmental Consultants Ltd. It contains a description of the proposed development, the project site and the surrounding area.

13.2.4. The AA Screening Report concludes that the potential for likely significant effects on the following six European Sites cannot be excluded in the absence of mitigation: Blackwater River SAC, Dungarvan Harbour SPA, Ballymacoda Bay SPA, Ballycotton Bay SPA, Cork Harbour SPA, and Saltee Island SPA, and that it is necessary to proceed to a Stage 2 Appropriate Assessment.

13.2.5. Having reviewed the documents and submissions I am satisfied that the information allows for a complete examination and identification of any potential significant effects of the development alone, or in combination with other plans and projects on European sites.

13.3. Need for Stage 1 AA Screening

13.3.1. The main part of the project site is not directly connected with or necessary to the management of a European Site and, therefore, it needs to be determined if the development is likely to have significant effects on a European site(s). The proposed grid connection route and haul route intersect with the Blackwater River (Cork/Waterford SAC) which is also connected to Dungarvan Harbour SPA.

13.3.2. I note, as highlighted in a submission from the Department of Housing Local Government and Heritage (dated 2nd August 2023) that while the Knockmealdown area is home to more than 1% of an all-Ireland population of an Annex I species (Hen Harrier in this instance), which is a criteria under which an area is considered for SPA designation, the Knockmealdown area is not a designated SPA. Nonetheless, an area where 1% or more of a population of an Annex I species exists continues to fall under Article 4(4) of the Birds Directive and I consider the issue of the hen harrier and its associated habitat in detail in the section 12 of this report above. I consider hereunder only those sites which are designated European sites and determine if the development is likely to have significant effects upon them.

13.3.3. The proposed development is examined in relation to any possible interaction with European sites designated Special Conservation Areas (SAC) and Special

Protection Areas (SPA) to assess whether it may give rise to significant effects on any European Site in view of the conservation objectives of those sites.

Brief Description of the Development

13.3.4. The applicant provides a description of the project in Section 2 of the NIS. The development is also summarised in Section 3 of this report. In summary the proposed development entails the construction of 12 No. wind turbines with an overall ground-to-blade tip height of 185 metres; a rotor blade diameter of 162 metres; and hub height of 104 metres, and associated foundations and hard-standing areas; construction of new internal site access roads and upgrade of existing site roads; construction of a new wind farm site entrance with access onto the R671 regional road in the townlands of Lickoran; improvement of existing site entrance with access onto local roads in the townlands of Broemountain; modifications to existing public road infrastructure to facilitate delivery of abnormal loads and turbine delivery; temporary construction compound with associated temporary site offices, parking area and security fencing; borrow pit; meteorological mast up to a height of 110m; site drainage network; one permanent 110 kV substation and associated underground electrical and communications cabling connecting the wind turbines to the wind farm substation; works associated with the connection of the wind farm to the national electricity grid, which will be via 110 kV underground cable connection approximately 16.8km in length to the existing Dungarvan 110 kV Substation; upgrade works on the turbine delivery route from Waterford Port; and ancillary forestry felling to facilitate construction and operation of the development and any onsite forestry replanting.

13.3.5. The site to the centre and east comprises enclosed improved agricultural grassland with hedgerow field boundaries. The west of the site is dominated by unenclosed land cover used as commonage. The habitats occurring here include acid grassland, wet grassland and dry heath. To the northwestern limit there is also improved agricultural grassland. Conifer plantation occurs along the northern boundary of the site. Smaller areas of poor fen and flush and non-calcareous spring habitat also occur within the project site to the east. The entire extent of the proposed grid connection route will be situated within existing road formations between the proposed wind farm site and the existing substation at Dungarvan. The habitats occurring at the three no. haul route widening locations comprise improved

agricultural grassland and hedgerows. Annex I habitats, or habitats of conservation significance, were identified during site survey, namely Dry Heath. The following Annex I species were recorded during surveys of the study area: golden plover, lapwing, and hen harrier. Of the 72 species of bird identified ten are Red-list status under the BoCCI (Gilbert et al., 2021): unidentified eagle, golden plover, grey wagtail, kestrel, lapwing, meadow pipit, redwing, snipe, stock dove and swift. During hen harrier surveys, a roost was not observed but suitable habitat exists on and near the site. During breeding wader surveys, no waders were observed breeding on site.

13.3.6. Using the Source-Pathway-Receptor (SPR) model, table 5.1 of the AA provides an evaluation as to whether the European Sites identified occur within the proposed development's zone of influence by virtue of pathways that could establish a connection between them.

13.3.7. With regard to the Blackwater River SAC, the proposed grid connection route and the haul route both intersect this river at its crossing of the Finisk River along the L5068 local road. Given that this European site overlaps with/adjoins the proposed development it is considered to occur within its zone of influence.

13.3.8. With regard to Dungarvan Harbour SPA (site Code: 4032), there is a hydrological pathway between the proposed grid connection route and this SPA. The proposed grid connection route crosses the Colligan River via the existing N25. The Colligan River drains to this SPA circa 1km downstream of the crossing point. There is also potential for a light emission pathway, given the zone of sensitivity for the populations of golden plover and lapwing supported by this SPA overlaps with the proposed wind farm site. Lighting will be provided on turbines at the proposed wind farm site. As such there is a potential light emission pathway connecting the proposed wind farm site to the golden plover and lapwing populations of this SPA.

13.3.9. With regard to Ballymacoda Bay SPA (Site Code: 4023), Ballycotton Bay SPA (Site Code: 4022), Cork Harbour SPA (Site Code: 4030), and Saltee Islands SPA (Site Code: 004002), the zone of sensitivity for the lesser-black backed gull populations, which occur in each of these SPAs, overlaps with the proposed wind farm site. Lighting will be provided on turbines at the proposed wind farm site. As such there is a potential light emission pathway connecting the proposed wind farm site to the lesser-black backed gull populations of this SPA. The zone of sensitivity for Lesser-

black backed gull overlap with the proposed development and as such there is potential for a mobile species pathway (this is where impacts to mobile qualifying species of European Sites can occur in the event that such species rely on habitats occurring within the proposed development site) between the proposed development and these special conservation interest bird species.

13.3.10. With regard to Ballycotton Bay SPA (Site Code: 4022), the zone of sensitivity for the lesser-black backed gull populations of this SPA overlaps with the proposed wind farm site. Lighting will be provided on turbines at the proposed wind farm site. As such there is a potential light emission pathway connecting the proposed wind farm site to the lesser-black backed gull populations of this SPA. The zone of sensitivity for Lesser-black backed gull overlap with the proposed development and as such there is potential for a mobile species pathway between the proposed development and these special conservation interest bird species.

13.3.11. Section 5.4 of the submitted AA examines each of the qualifying interests of the Blackwater River SAC to determine whether pathways are within the ZoI of the specific qualifying interests. I note observers raise objections as to the validity of the AA and NIS given section 5.4 in the heading of table 5.4 refers to Connemara Bog Complex SAC. I note that this is a typographical error and the content of the table relates to the Blackwater River SAC and is valid. This typographical error has not impeded my assessment of this application. The features of interest within the zone of influence identified are as follows:

- Floating River Vegetation [3260] - known to occur along the Finisk River at and downstream of the project site.
- Austropotamobius pallipes (White-clawed Crayfish) [1092] - known to occur along the Finisk River at and downstream of the project site.
- Petromyzon marinus (Sea Lamprey) [1095] - known to occur along the Finisk River at and downstream of the project site.
- Salmo salar (Salmon) [1106] - known to occur along the Finisk River at and downstream of the project site.
- Lutra lutra (Otter) [1355] - known to occur along the Finisk River at and downstream of the project site.

13.3.12. A surface water management strategy has been set out for the development and all measures to protect watercourses will be overseen by an Ecological Clerk of Works.

13.3.13. Taking account of the characteristics of the proposed development in terms of its location and the scale of works, the following issues are considered for examination in terms of implications for likely significant effects on European sites:

- Hydrological Pathway and potential for pollution and deterioration of water quality: 3260 Floating River Vegetation; Wetland habitats of the Dungarvan Harbour SPA; Annex 2 freshwater species in the form of Atlantic salmon, sea lamprey and brook lamprey; otters, white-clawed crayfish; and Annex 1 bird species of the Dungarvan Harbour SPA.

- Mobile species pathway and potential for disturbance, displacement and collision risk: golden plover, lapwing, and lesser-black backed gull have been identified as key ornithological receptors of the proposed wind farm site. Given the potential for interactions between the proposed development and these species the potential for associated impacts such as disturbance, displacement and collision cannot be ruled out at the screening stage.

- In-combination effects

Submissions and Observations

13.3.14. I have summarised observations made in relation to this application under Sections 8, 9 and 10 above. I note in particular the submission made by the Department of Housing Local Government and Heritage (DHLGH). I have reviewed all submissions made and issues where relevant are addressed within my assessment hereunder.

European Sites

13.3.15. The site of the windfarm itself is not located in or immediately adjacent to a European site therefore there are no direct impacts on European sites from the windfarm itself. The grid connection route (GCR) and the proposed haul route intersect the Blackwater River SAC and pNHA and the Dungarvan Harbour SPA is 600m to the south of the GCR and 500m to the south of the N25 section of the haul route.

13.3.16. A potential zone of influence has been established having regard to the location of European sites, the Qualifying Interests (QIs) of those sites and their potential mobility outside that European site, the source-pathway-receptor model and potential environment effects of the proposed development.

13.3.17. The following sites listed in table 1 are deemed to be within the zone of influence of the development. I note the Seas off Wexford SPA was designated post this application being submitted, therefore, it was not included within the submitted AA Screening. I consider I have sufficient information before me in relation to the site and this SPA to consider potential impacts within the AA Screening of the development.

Table 1: Screening Summary Matrix and possibility of significant effects:

European Site	**Qualifying Interests (QIs)**	**Distance**	**Potential Connections (Source-Pathway-Receptor)**	**Further Consideration Yes/No**
Blackwater River (Cork/Waterford) SAC (Site Code: 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-	0km – Intersected by the proposed grid connection route and the proposed haul route	The proposed development haul route and grid connection route intersect the boundary of this SAC. As such this SAC is considered to occur within the zone of influence of the project.	Yes

	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] *Taxus baccata woods of the British Isles [91J0] 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 (Twaite Shad) [1103] Salmo salar (Salmon) [1106] Lutra (Otter) [1355] Trichomanes speciosum (Killarney Fern) [1421]			
Dungarvan Harbour SPA (site code: 4032)	Great Crested Grebe (Podiceps cristatus) [A005] Light-bellied Brent Goose (Branta bernicla hrota) [A046] Shelduck (Tadorna tadorna) [A048] Red-breasted	11.5km to the southeast of the proposed wind farm site. 600m to the south of the grid	The majority of the species listed are connected with coastal sites rather than an upland site such as the appeal site that is characterised by forestry and dry heath habitat.	Yes

	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]	connection route. 500m to the south of the N25 section of the haul route.	However, there is a Mobile species pathway between lesser-black backed gull and the proposed wind farm site given the foraging range of this gull and given observations of this bird in the area of the site. There is also therefore a Light emission pathway from turbines should this gull utilise the wider area.	
Ballymacoda Bay SPA (Site Code: 4023)	Wigeon (Anas penelope) [A050] Teal (Anas crecca) [A052] Ringed Plover (Charadrius hiaticula) [A137] Golden Plover (Pluvialis apricaria) [A140] Grey Plover (Pluvialis squatarola) [A141] Lapwing (Vanellus	25km southwest	The majority of the species listed are connected with coastal sites rather than an upland site, such as the appeal site which is characterised primarily by forestry, improved	Yes

	vanellus) [A142] Sanderling (Calidris alba) [A144] 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] Black-headed Gull (Chroicocephalus ridibundus) [A179] Common Gull (Larus canus) [A182] Lesser Black-backed Gull (Larus fuscus) [A183] Wetland and Waterbirds [A999]		agricultural grassland, and dry heath habitat. However, there is a Mobile species pathway between lesser-black backed gull and the proposed wind farm site given the foraging range of this gull and given observations of this bird in the area of the site. There is also therefore a Light emission pathway from turbines should this gull utilise the wider area.	
Ballycotton Bay SPA (Site Code: 4022)	Teal (Anas crecca) [A052] Ringed Plover (Charadrius hiaticula) [A137] Golden Plover (Pluvialis apricaria)	35km southwest	The majority of the species listed are connected with coastal sites rather than an upland site such	Yes

	[A140] Grey Plover (Pluvialis squatarola) [A141] Lapwing (Vanellus vanellus) [A142] Black-tailed Godwit (Limosa limosa) [A156] Bar-tailed Godwit (Limosa lapponica) [A157] Curlew (Numenius arquata) [A160] Turnstone (Arenaria interpres) [A169] Common Gull (Larus canus) [A182] Lesser Black-backed Gull (Larus fuscus) [A183] Wetland and Waterbirds [A999]		as the appeal site which is characterised primarily by forestry, improved agricultural grassland, and dry heath habitat. However, there is a Mobile species pathway between lesser-black backed gull and the proposed wind farm site given the foraging range of this gull and given observations of this bird in the area of the site. There is also therefore a Light emission pathway from turbines should this gull utilise the wider area.	
Cork Harbour SPA (Site Code: 4030)	Little Grebe (Tachybaptus ruficollis) [A004] Great Crested	41km southwest	The majority of the species listed are connected with coastal sites	Yes

	Grebe (Podiceps cristatus) [A005] Cormorant (Phalacrocorax carbo) [A017] Grey Heron (Ardea cinerea) [A028] Shelduck (Tadorna tadorna) [A048] Wigeon (Anas penelope) [A050] Teal (Anas crecca) [A052] Pintail (Anas acuta) [A054] Shoveler (Anas clypeata) [A056] Red-breasted Merganser (Mergus serrator) [A069] Oystercatcher (Haematopus ostralegus) [A130] Golden Plover (Pluvialis apricaria) [A140] Grey Plover (Pluvialis squatarola) [A141] Lapwing (Vanellus vanellus) [A142] Dunlin (Calidris alpina) [A149] Black-tailed Godwit (Limosa limosa) [A156] Bar-tailed		rather than an upland site such as the appeal site which is characterised primarily by forestry, improved agricultural grassland, and dry heath habitat. However, there is a Mobile species pathway between lesser-black backed gull and the proposed wind farm site given the foraging range of this gull and given observations of this bird in the area of the site. There is also therefore a Light emission pathway from turbines should this gull utilise the wider area.	

	Godwit (Limosa lapponica) [A157] Curlew (Numenius arquata) [A160] Redshank (Tringa totanus) [A162] Black-headed Gull (Chroicocephalus ridibundus) [A179] Common Gull (Larus canus) [A182] Lesser Black-backed Gull (Larus fuscus) [A183] Common Tern (Sterna hirundo) [A193] Wetland and Waterbirds [A999]			
Saltee Islands SPA (Site Code: 004002)	Fulmar (Fulmarus glacialis) [A009] Gannet (Morus bassanus) [A016] Cormorant (Phalacrocorax carbo) [A017] Shag (Phalacrocorax aristotelis) [A018] Lesser Black-backed Gull (Larus fuscus) [A183] Herring Gull (Larus argentatus) [A184] Kittiwake (Rissa	70km southeast	The majority of the species listed are connected with coastal sites rather than an upland site which is characterised primarily by forestry, improved agricultural grassland, and dry heath habitat. However, there is a Mobile species pathway between	Yes

	tridactyla) [A188] Guillemot (Uria aalge) [A199] Razorbill (Alca torda) [A200] Puffin (Fratercula arctica) [A204]		lesser-black backed gull and the proposed wind farm site given the foraging range of this gull and given observations of this bird in the area of the site. There is also therefore a Light emission pathway from turbines should this gull utilise the wider area.	
Seas off Wexford SPA [004237] Conservation Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA (see NPWS for list of	Red-throated Diver (Gavia stellata) [A001] Fulmar (Fulmarus glacialis) [A009] Manx Shearwater (Puffinus puffinus) [A013] Gannet (Morus bassanus) [A016] Cormorant (Phalacrocorax carbo) [A017] Shag (Phalacrocorax aristotelis) [A018] Common Scoter (Melanitta nigra) [A065]	c.70km southeast	The majority of the species listed are connected with coastal sites rather than an upland site such as the appeal site which is characterised primarily by forestry, improved agricultural grassland, and dry heath habitat. However, there is	Yes

attributes and targets).	Mediterranean Gull (Larus melanocephalus) [A176] Black-headed Gull (Chroicocephalus ridibundus) [A179] Lesser Black-backed Gull (Larus fuscus) [A183] Herring Gull (Larus argentatus) [A184] Kittiwake (Rissa tridactyla) [A188] Sandwich Tern (Sterna sandvicensis) [A191] Roseate Tern (Sterna dougallii) [A192] Common Tern (Sterna hirundo) [A193] Arctic Tern (Sterna paradisaea) [A194] Little Tern (Sterna albifrons) [A195] Guillemot (Uria aalge) [A199] Razorbill (Alca torda) [A200] Puffin (Fratercula arctica) [A204]		a Mobile species pathway between lesser-black backed gull and the proposed wind farm site given the foraging range of this gull and given observations of this bird in the area of the site. I have ruled out impacts on the other species based on their conservation objectives and lack of a source-pathway-receptor. There is also therefore a Light emission pathway from turbines should this gull utilise the wider area.	

Mitigation Measures

13.3.18. No measures designed or intended to avoid or reduce any harmful effects of the project on a European Site have been relied upon in this screening exercise.

Screening Determination

13.3.19. Having regard to the information presented in the revised Screening Report, the submissions and observations, the nature, size, scale and location of the various elements of the proposed development and its likely direct, indirect and cumulative effects, the source pathway receptor principle and sensitivities of the ecological receptors, I consider that the applicant has identified all European sites that could be significantly impacted, with the exception of the Seas off Wexford SPA which was designated posted this application being submitted and which I have included int eh screening assessment.

13.3.20. The proposed development was considered in light of the requirements of Section 177U of the Planning and Development Act 2000 as amended. Having carried out Screening for Appropriate Assessment of the project, it has been concluded that the project individually (or in combination with other plans or projects) could have a significant effect on European site no. 2170 (Blackwater River SAC), 4032 (Dungarvan Harbour SPA), 4023 (Ballymacoda Bay SPA), 4022 (Ballycotton Bay SPA), 4030 (Cork Harbour SPA), 004002 (Saltee Islands SPA), and 004237 (Seas off Wexford Coast SPA), in view of the sites' Conservation Objectives and therefore Appropriate Assessment (and submission of a NIS) is required.

13.4. The Natura Impact Statement

13.4.1. The NIS examines and assesses potential adverse effects of the proposed development on six designated European Sites, comprising 1 SAC and 5 SPAs namely:

- Blackwater River SAC
- Dungarvan Harbour SPA
- Ballymacoda Bay SPA
- Ballycotton Bay SPA
- Cork Harbour SPA
- Saltee Island SPA
- Seas off Wexford SPA – I note this SPA was designated post this application being submitted, therefore, it was not included within the submitted NIS. I consider I

have sufficient information before me in relation to the site and this SPA to consider potential impacts within the NIS.

13.4.2. A description of these sites and their Conservation Objectives and Qualifying Interests are set out in the NIS and are summarised above in table 1. I have also examined the Natura 2000 data forms as relevant and relevant Conservation Objectives Supporting Documents for these sites available through the NPWS and European websites (www.npws.ie and https://natura2000.eea.europa.eu).

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

- Habitats and Vegetation Surveys
- Ornithology Surveys (2020 and 2021/2022)
- Bat Surveys (Spring, Summer and Autumn of 2020, 2021, and 2022
- Aquatic Surveys, including habitat assessment, fish habitat suitability assessment surveys, biological water quality surveys, and physio-chemical water sampling.
- Hydrological and Geotechnical Surveys (between 2020 and 2022)
- Decommissioning/Construction Environmental Management Plan
- Habitat Management Plan
- Surface Water Management Plan

13.4.4. Section 5 of the NIS contains an assessment of the potential impacts of the proposed development on the identified European sites and Section 6 identifies a series of mitigation measures and best practice measures which have been integrated into the design and into the Construction and Environmental Management Plan, which has a focus on water quality and management of potentially polluting substances.

13.4.5. The NIS concludes that taking into account the project design and implementation of mitigation measures, there would be no potential to undermine the conservation objectives of four SPAs, namely Ballymacoda Bay SPA, Ballycotton Bay SPA, Cork Harbour SPA and Saltee Island SPA. However, the project has the potential to result in adverse effects on the Blackwater River SPA and Dungarvan SPA. A range of mitigation measures have been prescribed. The NIS concludes that the development

will not result in adverse effects to the integrity and conservation status of European sites in view of their Conservation Objectives and on the basis of scientific evidence and there is no reasonable scientific doubt to that conclusion.

13.4.6. Having reviewed the NIS, all supporting documentation and submissions, I am satisfied that the information allows for a complete assessment of any adverse effects of the proposed development on the conservation objectives of the above-mentioned European sites alone, or in combination with other plans and projects.

13.5. Appropriate Assessment of Implications of the Proposed Development

13.5.1. The following is an assessment of the implications of the project on the relevant conservation objectives of the European site using the best available 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 examined 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.

13.5.2. The following sites and identified QIs in table 2 are subject to Appropriate Assessment. I note that a new SPA has been designated off the south-coast since the submission of this application, I therefore also consider hereunder Seas off Wexford SPA. I am satisfied I have sufficient information to consider potential impacts on this new SPA [004237].

13.5.3. The Qualifying Interests (QIs)/Special Conservation Interests (SCIs) below have been selected on the basis of, inter alia, identified source-pathway-receptors and knowledge in relation to the roosting and foraging preferences of the bird species in

question, including consideration of ex-situ habitats, in addition to the ornithological survey results accompanying the application.

Table 2: Assessment of relevant QIs of European sites based on source-pathway-receptor connections.

European Site	**Distance**	**Selected QIs for assessment on basis of identified source-pathway-receptor [hydrological pathway and/or foraging distance of birds]**	**Identified Connection to the QI being assessed**
Blackwater River SAC [002170] Conservation Objective: To restore/maintain the favourable conservation condition of the identified habitats (see NPWS for list of attributes and targets)	0km – Intersected by the proposed grid connection route and the proposed haul route	Floating River Vegetation [3260] Austropotamobius pallipes (White-clawed Crayfish) [1092] Petromyzon marinus (Sea Lamprey) [1095] Lampetra planeri (Brook Lamprey) [1096] Lampetra fluviatilis (River Lamprey) [1099] Salmo salar (Salmon) [1106] Lutra lutra (Otter) [1355]	Hydrological pathway via wind farm site, grid connection route, and haul route.
Dungarvan Harbour SPA [004032]	11.5km to the southeast of the proposed wind farm site. 600m to the south of the	Great Crested Grebe (Podiceps cristatus) [A005] Light-bellied Brent Goose (Branta bernicla hrota) [A046] Shelduck	Hydrological pathway - via proposed grid connection route.

	grid connection route. 500m to the south of the N25 section of the haul route.	(Tadorna tadorna) [A048] Red-breasted Merganser (Mergus serrator) [A069] Oystercatcher (Haematopus ostralegus) [A130] Grey Plover (Pluvialis squatarola) [A141] 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]	
		Golden Plover (Pluvialis apricaria) [A140] Lapwing (Vanellus vanellus) [A142]	Mobile Species Pathway, Light Emission Pathway (from lights on turbines), Hydrological Pathway

			– via proposed windfarm, and grid connection route. Winter foraging distance of golden plover is circa 12km and they are extremely mobile within the winter non-breeding season. Golden Plover observed during vantage point surveys. No golden plover noted breeding at or in the vicinity of the proposed wind farm site during bird surveys. Golden plover observed foraging and roosting in a core area at Broemountain within the site boundary (see figure 5.1) and also observed in and over improved agricultural grassland.
Ballymacoda Bay SPA [004023]	25km southwest	Lesser Black-backed Gull (Larus fuscus) [A183]	Mobile Species pathway and Light Emission Pathway

Conservation Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA (see NPWS for list of attributes and targets)			(lights on turbines) – via proposed windfarm.
Ballycotton Bay SPA [004022] Conservation Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA (see NPWS for list of attributes and targets)	35km southwest	Lesser Black-backed Gull (Larus fuscus) [A183]	Mobile species pathway and Light Emission Pathway – via proposed windfarm
Cork Harbour SPA [004030] Conservation Objective:	41km southwest	Lesser Black-backed Gull (Larus fuscus) [A183]	Mobile species pathway and Light Emission pathway –

To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA (see NPWS for list of attributes and targets)			via proposed windfarm
Saltee Island SPA [000707] Conservation Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA (see NPWS for list of attributes and targets)	70km southeast	Lesser Black-backed Gull (Larus fuscus) [A183]	Mobile species pathway and Light Emission pathway – via proposed windfarm
Seas off Wexford SPA [004237] Conservation Objective: To maintain or restore the	c.70km southeast	Lesser Black-backed Gull (Larus fuscus) [A183]	Mobile species pathway and Light Emission pathway – via proposed windfarm site

favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA (see NPWS for list of attributes and targets)			

13.5.4. A description of the sites, their Conservation Objectives and Qualifying Interests (QIs)/Special Conservation Interests (SCIs), including any relevant attributes and targets for the site, are set out in the NIS and summarised in Tables 1 and 2 of this report as part of my assessment. Table 5.3 of the NIS assesses each attribute and target of the above European sites, identifying potential impacts on specific SCIs/QIs and where mitigation is required. The table above (table 2) identifies those SCIs/QIs which have the potential to be affected and which require further examination. I have examined and evaluated the scientific analysis submitted. I have also examined the Natura 2000 data forms as relevant and the conservation objectives supporting documents for these sites, available through the NPWS website (www.npws.ie).

13.5.5. I am satisfied that in-combination effects have been considered and assessed in the NIS. I note the Department's concern in relation to potential for impacts from a neighbouring proposed windfarm, however, there is no current application or permission on the adjoining site and therefore no public information available in terms of the detail of what may be proposed in the future by a separate developer. I consider it unreasonable that the applicant be expected to take a potential application into account in their assessment or to be in a position to obtain information controlled by a third party. Any future application on a neighbouring property will be subject to its own assessment in relation to AA.

13.5.6. Having reviewed the documents, submissions and consultations undertaken, I am satisfied that the information allows for a complete assessment of any adverse

effects of the development, on the conservation objectives of the above European sites alone, or in combination with other plans or projects.

Aspects of the Proposed Development

13.5.7. 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) being released 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.
- Risk of collision, disturbance and displacement associated with the operation of the turbines for SCIs.
- Potential loss or fragmentation of foraging habitat of importance to European sites.

13.5.8. It is reasonable to conclude on the basis of the information before the Board that all of the above, in the absence of mitigation, may comprise a risk of adverse effects on the integrity of the sites.

13.5.9. The key ornithological receptors that are listed as special conservation interest (SCI) bird species of SPAs that occur within the zone of influence of the project are:

- golden plover,
- lapwing, and
- lesser-black backed gull.

13.5.10. An additional Annex I species was recorded during hinterland surveys, the hen harrier, and I refer the Board to the EIA where the hen harrier is discussed in more detail. The hen harrier is not protected within any of the identified SPAs within the zone of influence of the site.

13.5.11. A submission from the DHLGH (2nd August 2023) raises issue with the loss of the Dry Heath habitat, given it supports Golden Plover and Hen Harrier, Annex I

species. I note Golden Plover is a SCI of Dungarvan Harbour SPA. The width of the habitat is stated to be narrow at 400m, therefore in conjunction with the layout of the turbines and the displacement range of golden plover (200m-500m), the entire habitat which occurs in a narrow 400m width will become unusable and this eastern portion of the Knockmealdown habitat will be lost. The Department states it is important for this and other species that use the area that they can range over large undisturbed areas and that scale of habitat is important. This block of land on the east relating to Broemountain is considered to of importance given it is part of the larger upland habitat of the wider Knockmealdown mountain range. While I note the concern of the Department in relation to this loss of habitat, I note that the loss of habitat does not cause a significant effect to the integrity of designated European sites in the area. The concern rather relates to overall biodiversity, the quality of the habitat, the related impact on species of high conservation concern and of Annex I status, and its role in the wider landscape. These issues are of serious concern and I address them separately in the EIA section of this report above, however, for the purposes of this NIS I note the loss of habitat, which is not the preferential habitat of the golden plover, will not, given the scale of alternative habitats for this species between this site and Dungarvan Harbour SPA, affect the integrity of the SCI of that site.

13.5.12. The following are the details related to the four sites brought forward for Appropriate Assessment in the submitted NIS including the QIs / SCIs that could potentially be impacted upon based on identified source-pathway-receptors, and which are also discussed in table 2 above and in table 5.3 of the submitted NIS.

Blackwater River (Cork/Waterford) SAC

13.5.13. This SAC bounds part of the grid connection route (GCR) and haul route. The River Blackwater is one of the largest rivers in Ireland, draining a major part of Co. Cork and five ranges of mountains. The site consists of the freshwater stretches of the River Blackwater as far upstream as Ballydesmond, the tidal stretches as far as Youghal Harbour and many tributaries, the larger of which include the Licky, Bride, Flesk, Chimneyfield, Finisk, Araglin, Awbeg (Buttevant), Clyda, Glen, Allow, Dalua, Brogeen, Rathcool, Finnow, Owentaraglin and Awnaskirtaun. The portions of the Blackwater and its tributaries that fall within this SAC flow through the counties of Kerry, Cork, Limerick, Tipperary and Waterford. 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, for example Rhododendron and Cherry Laurel. Overall, the River Blackwater is of considerable conservation significance for the occurrence of good examples of habitats and populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive. Furthermore it is of high conservation value for the populations of bird species that use it.

13.5.14. Hydrological connectivity has been identified between the proposed development and this SAC via watercourses within the site boundary which connect downstream to the Finisk River and ultimately the Blackwater River SAC, with the GCR also crossing the Blackwater River. The relevant attributes and targets include floating river vegetation, impact on otter in the Finisk River, Atlantic salmon downstream of the site, white-clayed crayfish downstream of the site, all of which are relevant in terms of the hydrological regime and could be impacted by a deterioration in water quality.

13.5.15. Mitigation measures in the form of separation of turbines from watercourses, best practice sediment and water control measures, and surface water management plan, are set out in Section 6 of the submitted NIS.

13.5.16. Taking into account the measures set out relating to prevention of water pollution and surface water management as described in the EIAR, CEMP, and Surface Water Management Plan, it may be concluded that following the implementation of mitigation, the construction and operation of this proposed development will not adversely affect the integrity of this European site and no reasonable doubt remains as to the absence of such effects.

Dungarvan Harbour SPA

13.5.17. The Dungarvan Harbour SPA includes Dungarvan Harbour as far east as Ballynacourty Point and west to include the tidal sections of the River Brickey. Three rivers flow into Dungarvan Harbour - the Colligan River, the River Brickey, and the Glendine River. The absence of a large river entering the site means that the bay is essentially a marine habitat, although it dries out at low tide to give extensive mud and sand flats. The inner bay is extremely sheltered, being almost closed off by the

linear Cunnigar spit to the east. 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. Golden Plover occurs here in nationally important numbers (4,980).

13.5.18. The Colligan River is crossed by the proposed grid connection route and this crossing establishes a pathway along the river between the proposed grid connection route and this SPA, therefore all SCIs of the SPA occur within the zone of influence of this element of the project. In addition, given the location of the proposed wind farm within the foraging range of golden plover and lapwing, both of which have been identified as key ornithological receptors for the wind farm, a mobile species pathway and a light emission pathway (from operational turbines) is also triggered.

13.5.19. As set out in table 2 above, specific species are identified as potentially at risk due to potential sediment/pollutants released to surface waters and resultant impact on wetlands, the quality of which the SCIs of this SPA depend on. Mitigation measures in the form of best practice sediment and water control measures, and surface water management plan, are out in Section 6 of the submitted NIS.

13.5.20. No golden plover were noted breeding at or in the vicinity of the proposed wind farm site during bird surveys. Bird surveys did show golden plover foraging and roosting in a core area at Breomountain, as well as in and over improved agricultural grassland. The area at Broemountain equates to 17.63 hectares of dry acid grassland and dry heath habitat with intermittent stands of dense bracken. Dense bracken does not provide suitable roosting or foraging habitat for the species. Removing monoculture stands dominated with bracken (total area 1.18 hectares) from the total area provides a conservative estimate of 16.45 hectares of potential habitat for the species at Broemountain. The zone of sensitivity for golden plover, which is underpinned by this species' wintering foraging distance, is circa 12km, which overlaps with Dungarvan Harbour SPA. The NIS states that given Dungarvan

Harbour represents the closest area of suitable coastal intertidal foraging habitat to the proposed wind farm site, it is considered likely that the flocks recorded at Broemountain may also rely on the intertidal habitats at Dungarvan Harbour during the winter season, as supported by direct observations made during vantage point surveys.

13.5.21. In terms of habitat loss, adopting a worst-case scenario, it is calculated (on basis of recorded area where birds observed) there will be a direct and indirect loss of 16.45 Ha of suitable habitat for golden plover. The NIS refers to studies that have identified arable land in the form of cereal stubble and harrowed tillage and grassland pasture as the preferred terrestrial habitat of golden plover during the non-breeding season and large open fields are also preferred. GIS analysis was completed to estimate the area of potentially suitable habitat occurring within the wider area surrounding the Dungarvan Harbour SPA. A total area of c. 72,000 Ha of terrestrial land occurs within a 15km buffer zone of the Dungarvan Harbour SPA. Of this approximately 42,000 Ha has been mapped as unsuitable habitat for golden plover. A conservative estimate is applied (parameters set out in the NIS) which indicates 50% (15,000 Ha) of the area of pasture, arable and upland moorland within the 15km buffer zone of the SPA is potentially suitable habitat for golden plover. The loss of 16.45 Ha will equate to a loss of c. 0.1% of potentially suitable golden plover habitat, which is rated as a negligible impact and an effect of slight significance over the long-term for golden plover.

13.5.22. In terms of collision risk, the NIS identifies the operation of the turbines as being low risk for golden plover, due to low flight path of golden plover and their high manoeuvrability, and studies in this regard are referenced. The collision risk model shows a loss of 0.29% (or 0.31% in combination with Coumagappul Wind Farm) which will not have an impact on the population trend of golden plover supported by Dungarvan Harbour SPA. The predicted 0.12% increase in annual mortality for the golden plover population of the SPA indicates that collision mortality will not have a significant impact at the SPA level for golden plover. Given that the potential collision risk posed by the project is classified as slight effect, it is not representative of an adverse effect to the population trends of golden plover supported by the Dungarvan Harbour SPA, as per EPA guidance (2022).

13.5.23. Possible operation phase disturbance during winter months from feeding or roosting locations will represent a long-term imperceptible effect to golden plover. While the effects of lighting associated with the proposed turbines have not been identified as having the potential to impact conservation objectives for golden plover population of this SPA, mitigation measures to avoid potential adverse effects of lighting to birds, including common gulls, are set out in Section 7 of the NIS. Barriers to movement of golden plover will have the potential to result in to result in energy expenditure that could in turn have significant effects to this species during migrating flights in spring and autumn. The presence of a barrier to daily movements will represent an impact of long-term moderate significance for golden plover.

13.5.24. With regard to lapwing, the zone of sensitivity is underpinned by this species' wintering foraging distance, which is circa 12km. A single bird was recorded on one occasion during non-breeding season vantage point surveys. No lapwing were recorded during the breeding season and this species was not recorded breeding within or in the vicinity of the proposed wind farm site. Given that lapwing were observed only on one occasion during all bird surveys and that this species was not observed relying on habitats occurring within the wind farm site for breeding, foraging or roosting, the loss of habitat will represent a long-term imperceptible effect. The collision risk model indicates no losses with this bird species with the overall effect rated as imperceptible. The potential for indirect effects to lapwing as a result of disturbance/displacement will be negligible and will not result in adverse effects to the population of lapwing supported by the Dungarvan Harbour SPA. The potential for lighting impacts has been considered, as noted above.

13.5.25. Taking into account the measures set out relating to prevention of water pollution and surface water management as described in the EIAR, CEMP, and Surface Water Management Plan, it may be concluded that following the implementation of mitigation, the construction, operation and decommissioning of this proposed development will not adversely affect the integrity of this European site and no reasonable doubt remains as to the absence of such effects.

Ballymacoda Bay SPA

13.5.26. The Ballymacoda Bay SPA stretches north-east from Ballymacoda to within several kilometres of Youghal, Co. Cork. It comprises the estuary of the Womanagh

River, a substantial river which drains a large agricultural catchment. Part of the tidal section of the river is included in the site and on the seaward side the boundary extends to, and includes, Bog Rock, Barrel Rocks and Black Rock. Golden Plover and Black-tailed Godwit occur here in internationally important numbers. A further eleven species of waders and ducks occur here in nationally important numbers. The site is also notable for supporting nationally important populations of some gull species in autumn and winter. Ballymacoda Bay SPA is one of the most important sites in the country for wintering waterfowl. It qualifies for international importance on the basis of regularly exceeding 20,000 wintering birds but also for its Golden Plover and Black-tailed Godwit populations. In addition, it supports nationally important populations of a further fourteen species. Two of the species which occur, Golden Plover and Bartailed Godwit, are listed on Annex I of the E.U. Birds Directive. Ballymacoda Bay is also a Ramsar Convention site.

13.5.27. The SCI of this SPA identified as occurring within the zone of influence of the proposed development is the Lesser-Black Backed Gull. This SPA is 25 km from the windfarm site.

13.5.28. In terms of habitat loss/fragmentation, the bird survey results indicate no lesser-black backed gulls were observed breeding on the site; foraging occurred primarily on the neighbouring field to the east, while low numbers of birds were observed foraging on the site. Habitats on site are considered largely unsuitable for foraging. Foraging in ploughed or slurried land is a common occurrence, however, this is an opportunistic occurrence on site during a very small-time frame, when ploughing and slurrying works are being undertaken. Seasonal flooding in fields may also provide foraging habitat, however, this is not a permanent fixture in the landscape of the site. Improved agricultural grassland is abundant in the area as is slurrying/ploughing. Adopting a worst-case scenario, the NIS highlights that there will be a loss of 17.51 Ha of suitable habitat, which equates to 6.12% of total available suitable habitat for the species in the site boundary. A percentage range of habitat loss is estimated at 1-5% for this species locally. In the wider regional context and the context of the 4 SPAs occurring at significant distance from the project site as well as the wide-ranging foraging distance of this species (i.e. up to 70km as per Thaxter et al., 2012) the loss of 17.51 Ha of suitable habitat will represent a loss within a percentage range at least an order of magnitude below the conservative

local estimate (i.e. habitat loss of 0.01 – 0.5%). No adverse effect is therefore predicted to the population of lesser-black backed gull supported by the 4 SPAs designated for the protection of this species in the wider regional area (I refer the Board to table 5.1 of the NIS).

13.5.29. In terms of collision risk, am assessment was undertaken with the results indicating that the potential is for 0.22 collisions per year with lesser-black backed gulls, which equates to a loss of approximately 0.03, 0.03 and 0.13 of the respective 5 year populations supported by Ballymacoda Bay SPA, Ballycotton Bay SPA and Cork Harbour SPA, and will not result in a change of the population trend of this bird.

13.5.30. The effects of lighting associated with the proposed turbines have not been identified as having the potential to impact conservation objectives for lesser-black backed gull population of these SPAs, nonetheless mitigation measures to avoid potential adverse effects of lighting to birds, including common gulls, are set out in in the NIS.

13.5.31. Given the assessment notes no impact arising in relation to habitat loss (due to extensive more suitable lands located between this SPA and the windfarm site), disturbance, displacement and barrier effects in addition to the large distance involve, it is likely that no significant effects will arise. No mitigation measures are therefore proposed.

13.5.32. I am satisfied that the construction, operation and decommissioning of this proposed development will not adversely affect the integrity of this European site and no reasonable doubt remains as to the absence of such effects.

Ballycotton Bay SPA

13.5.33. Ballycotton Bay SPA is an east-facing coastal complex, which stretches northwards from Ballycotton to Ballynamona, a distance of c. 2 km. The site comprises two sheltered inlets which receive the flows of several small rivers. The southern inlet had formerly been lagoonal (Ballycotton Lake) but breaching of the shingle barrier in recent times has resulted in the area reverting to an estuarine system. The principal habitat within the site is inter-tidal sand and mudflats. These are mostly well-exposed and the sediments are predominantly firm sands. The inter-tidal flats provide the main feeding habitat for the wintering birds. Sandy beaches are

well represented. Salt marshes fringe the flats in the sheltered inlets and these provide high tides roosts. A small area of shallow marine water is also included.

13.5.34. The SCI of this SPA identified as occurring within the zone of influence of the proposed development is the Lesser-Black Backed Gull. This SPA is 25km from the windfarm site.

13.5.35. In terms of habitat loss, following bird surveys and habitat assessment of the site, no significant effect in terms of ex-situ habitat loss is predicted.

13.5.36. A collision risk assessment was undertaken with the results indicating that the potential is for 0.22 collisions per year with lesser-black backed gulls, which equates to a loss of approximately 0.03, 0.03 and 0.13 of the respective 5 year populations supported by Ballymacoda Bay SPA, Ballycotton Bay SPA and Cork Harbour SPA, and will not result in a change of the population trend of this bird.

13.5.37. The effects of lighting associated with the proposed turbines have not been identified as having the potential to impact conservation objectives for lesser-black backed gull population of these SPAs, nonetheless mitigation measures to avoid potential adverse effects of lighting to birds, including common gulls, are set out in in the NIS.

13.5.38. Given the distance of the SPA from the windfarm site (35km), in addition to the results of the collision risk modelling, and assessment of existing habitat and predicted loss, I consider that overall there will be no habitat loss, disturbance, displacement or barrier effects on the lesser-black backed gull and no mitigation measures are therefore proposed.

13.5.39. I am satisfied that the construction, operation and decommissioning of this proposed development will not adversely affect the integrity of this European site and no reasonable doubt remains as to the absence of such effects.

Cork Harbour SPA

13.5.40. This SPA is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek,

Lough Beg, the Owenboy River Estuary, Whitegate Bay, Ringabella Creek and the Rostellan and Poulnabibe inlets.

13.5.41. The SCI of this SPA identified as occurring within the zone of influence of the proposed development is the Lesser-Black Backed Gull. This is due to the wide foraging range (70km) of this species and its potential to range from this SPA to areas that include the proposed wind farm site. This SPA is 41km from the windfarm site.

13.5.42. A collision risk assessment was undertaken with the results indicating that the potential is for 0.22 collisions per year with lesser-black backed gulls, which equates to a loss of approximately 0.03, 0.03 and 0.13 of the respective 5 year populations supports by Ballymacoda Bay SPA, Ballycotton Bay SPA and Cork Harbour SPA, and will not result in a change of the population trend of this bird.

13.5.43. The effects of lighting associated with the proposed turbines have not been identified as having the potential to impact conservation objectives for lesser-black backed gull population of these SPAs, nonetheless mitigation measures to avoid potential adverse effects of lighting to birds, including common gulls, are set out in in the NIS.

13.5.44. Given the distance of the SPA from the windfarm site (35km), in addition to the results of the collision risk modelling, and assessment of the habitat (the NIS determines that there is adequate habitat in the wider area that is more suitable for foraging than exists on the site and quantifies that landbank of suitable lands). It is stated that overall there will be no habitat loss, disturbance, displacement or barrier effects. No mitigation measures are therefore proposed.

13.5.45. I am satisfied that the construction, operation and decommissioning of this proposed development will not adversely affect the integrity of this European site and no reasonable doubt remains as to the absence of such effects.

Saltee Island SPA

13.5.46. The Saltee Islands SPA is situated some 4-5 km off the coast of south Co. Wexford and comprises the two islands, Great Saltee and Little Saltee, and the surrounding seas both between them and to a distance of 500 m from them. Both islands have exposed rocky cliffs on their south and east – those on Great Saltee

being mostly c. 30m high, those on Little Saltee about half this height. The northern and western sides of both islands are fringed with shingle and boulder shores, backed by boulder clay cliffs, as well as small areas of intertidal sandflats. Sea caves occur at the base of the cliffs on Great Saltee.

13.5.47. The SCI of this SPA that has been identified as occurring within the zone of influence of the proposed development is the Lesser-Black Backed Gull and the main attribute assessed relates to breeding population abundance. This gull has a wide foraging range (70km) therefore there is potential to range from this SPA to areas that include the proposed wind farm site.

13.5.48. It is noted that the distance of this SPA from the windfarm site at 70km is at the limit of the foraging range of this species. The NIS determines that there is adequate habitat in the wider area that is more suitable for foraging than that within the application site and quantifies that landbank of suitable lands. I note this SPA is 70km from the site and therefore at the limit of the range of the lesser-black backed gull. Surveys of the site and surrounding area identified lesser-black backed gulls foraging across of the site but not breeding in the area.

13.5.49. In term of collision risk, the potential population loss arising from a predicted number of 0.22 collisions per year, in the context of 5 year mean population is 0.13%, which is representative of a negligible magnitude effect and an impact of low significance for the associated lesser-black backed gull populations.

13.5.50. The effects of lighting associated with the proposed turbines have not been identified as having the potential to impact conservation objectives for lesser-black backed gull population of these SPAs, nonetheless mitigation measures to avoid potential adverse effects of lighting to birds, including common gulls, are set out in in the NIS.

13.5.51. It is stated that overall there will be no habitat loss, disturbance, displacement or barrier effects and no mitigation measures are therefore proposed.

13.5.52. I am satisfied that the construction, operation and decommissioning of this proposed development will not adversely affect the integrity of this European site and no reasonable doubt remains as to the absence of such effects.

Seas off Wexford SPA

13.5.53. The marine waters off the coast of County Wexford mark the boundary between the Irish and Celtic Seas. These waters constitute a valuable feeding resource for the seabirds that return every spring to Wexford's coastal and island colonies to breed. Outside of the summer months these relatively shallow coastal waters provide safe feeding and roosting opportunities for a range of marine birds overwintering here or on passage. This SPA abuts, and is ecologically connected to, four breeding seabird SPAs namely Lady's Island Lake SPA, Wexford Harbour and Slobs SPA, Keeragh Islands SPA and Saltee Islands SPA.

13.5.54. The breeding seabird species listed [or, in the case of Mediterranean Gull at Lady's Island Lake SPA, under consideration for listing] for the SPAs which abut the Seas off Wexford cSPA are: Little Tern (Wexford Harbour and Slobs SPA), Roseate Tern (Lady's Island Lake SPA), Common Tern (Lady's Island Lake SPA), Arctic Tern (Lady's Island Lake SPA), Sandwich Tern (Lady's Island Lake SPA), Black-headed Gull (Lady's Island Lake SPA), Mediterranean Gull (Lady's Island Lake SPA), Cormorant (Keeragh Islands SPA, Saltee Islands SPA), Fulmar (Saltee Islands SPA), Gannet (Saltee Islands SPA), Shag (Saltee Islands SPA), Lesser Black-backed Gull (Saltee Islands SPA), Herring Gull (Saltee Islands SPA), Kittiwake (Saltee Islands SPA), Guillemot (Saltee Islands SPA), Razorbill (Saltee Islands SPA) and Puffin (Saltee Islands SPA).

13.5.55. While no analysis has been submitted as part of the NIS of this new SPA (given the application was submitted after its designation), I note that the Saltee Islands is within this SPA and it was considered in the above assessment. I have reviewed the conservation objective relating to this SPA and the QIs related to this SPA.

13.5.56. The bird species associated with this new SPA are connected with marine and coastal sites and not inland sites. Having regard to the known breeding and foraging preferences of these birds and having regard to the bird surveys in the area of the site, no significant effects are considered to arise in respect of the bird species identified, with the exception of the lesser-black backed gull. As per the assessment above in relation to Saltee Islands SPA, no significant effects to the lesser-black backed gull are anticipated.

13.5.57. I am satisfied that the construction, operation and decommissioning of this proposed development will not adversely affect the integrity of this European site and no reasonable doubt remains as to the absence of such effects.

Mitigation Measures Proposed

13.5.58. As referenced above, Section 6 of the NIS details mitigation measures to be employed during the construction, operational and decommissioning phases of the development, the majority of which are considered to represent best construction practice measures. Measures to be implemented during the construction phase are set out in the EIAR and in a Construction and Environmental Management Plan (including associated Surface Water Management Plan) and will be implemented by an appointed Ecological Clerk of Works. The operational phase mitigation measures as set out in the Habitat Management Plan will be implemented by site management and a project ecologist is to be appointed to supervise the ongoing implementation, management and monitoring of measures in the Habitat Management Plan.

13.5.59. An observer raises issue with the appointment of the Ecological Clerk of Works being described as a mitigation measure and with the referencing of supporting documentation in the application relevant to the AA document not being appended to the AA document. Concern is also raised in relation to the robustness of the mitigation measures proposed due to wording used.

13.5.60. I note the appointment of the Ecological Clerk of Works to oversee the implementation of the CEMP and associated mitigation measures arising from the AA, is industry best practice and does not constitute a lacuna in the assessment, rather a description of the steps in the process that will be followed.

13.5.61. With regard to documentation referenced, I have reviewed all documentation and submissions, including review of the NPWS website in relation to relevant European sites and their associated objectives. It is clear that all documentation relevant to the AA is accessible as part of the application and is based on up to date scientific knowledge. I do not consider the manner in which documentation has been labelled and referenced in the AA has led to a lacuna in the assessment of the AA.

13.5.62. With regard to clarity in relation to the mitigation measures proposed, I have reviewed all submissions and documentation and I am satisfied that the measures

proposed remove all reasonable scientific doubt as to the effects of the works proposed on the protected sites concerned.

13.5.63. The NIS notes that should a significant discharge of suspended solids to surface waters occur, the absence of immediate proximity to designated sites and the assimilative capacity of the localised surface waters will act as a natural hydrological buffer in terms of suspended solids loading. Should such a discharge occur, the dilution and retention time of suspended solids in the localised surface water network will reduce potential impacts on highly sensitive downstream designated sites. It is noted that this natural mitigation measure is not to be adopted as a first principle and will not be relied upon to prevent adverse impacts on designated sites.

13.5.64. I note the main aspect of the development considered to have potential impacts relates to hydrological connections. The NIS does not consider risk in terms of collision risk associated with the operation of the turbines to be significant, as set out in the above report. I note the submission from the Department in relation to timelines associated with the survey work, which brings into question the strength of the baseline survey results in relation to breeding. As raised elsewhere in this report, Further Information would be required to ensure a robust assessment, however, given substantive issues in relation to policy and principle of this development at this location, I do not consider that Further Information is warranted in this instance.

13.5.65. Specific mitigation measures set out in Section 6 of the NIS include, but are not limited to, those summarised hereunder:

- Generally excavated rock will be used immediately for site access track construction. Whenever possible stockpiles will be avoided. Where stockpiling is required it will be stored in the designated temporary spoil stockpile area located to the east of the proposed turbine T9. This location for stockpiling has been selected due to its location on relatively flat ground that is well buffered (in excess of 100m) from any surrounding watercourses or drains and the presence of low value habitats in the form of intensively managed improved agricultural grassland.
- When a pre-determined rainfall trigger level is exceeded such as a very heavy rainfall at >25mm/hr, planned responses will be undertaken. These responses will

include cessation of construction until the storm event, including storm runoff has ceased.

- Construction activities will not be carried out during periods of sustained heavy rainfall events, or directly after such events. This will allow sufficient time for work areas to drain excessive surface water loading and discharge rates to be reduced.
- Following heavy rainfall events, and before construction works recommence, the Site will be inspected to confirm that conditions are suitable for construction activities to recommence.
- Sediment fencing will be erected along proximal and paralleling areas of watercourses, such as along the Lisleagh Stream and Aughkilladoon Stream and other first order tributaries occurring within the proposed wind farm site, channels and drains spanned by the works to reduce the potential for sediment laden run-off to reach sensitive receptors.
- No direct flow paths between stockpiles and watercourses will be permitted at the Site.
- Excavated material will be backfilled and transported to the spoil storage area as soon as is reasonably practicable to prevent long duration storage at the Site which increases the risk of adverse effects on aquatic environments. • All mitigation measures related to surface water quality will be implemented before excavation works commence.
- For the grid connection route, stockpiles will be temporarily stored a minimum of 25m back from rivers/streams on level ground with a silt barrier installed at the base.
- Areas of subsoils to be excavated will be drained ahead of excavation works. This will reduce the volumes of water encountered during excavation works and will therefore reduce the volume of water that is required to be dewatered whilst excavations are being carried out.
- Measures outlines in the CEMP as part of the submitted Surface Water Management Plan will be implemented ahead of excavation works.

- The direct discharge of dewatered loads to surface waters will not be permitted under any circumstances.
- All dewatering will follow a strict procedure of pumping to a settlement tank and then to a dewatering bag, or settlement ponds prior to discharging to receiving environment for overland flow.
- Geofabric lined settlement ponds will buffer the run-off discharging from the drainage system which will reduce the hydraulic loading to watercourses. Settlement ponds will be designed to reduce flow velocity to 0.3 m/s at which velocity silt settlement generally occurs.
- A programme of water quality monitoring will be implemented during the construction phase which is outlined in detail in CEMP presented in the appended to the EIAR (Jennings O'Donovan, 2023) in Appendix 2.1.
- No extracted or pumped water will be discharged directly to the surface water network associated with the Site (this is in accordance with Local Government (Water Pollution) Act 1977 as amended).
- Any discharges of sediment treated water will meet the requirements of the Surface Water Regulations 2009, as amended.
- No instream works in watercourse crossings.
- For watercourse crossings, the design of the proposed crossing and a method statement for the proposed construction will be agreed in advance with Inland Fisheries Ireland (IFI).
- The crossings along the grid connection route will be via horizontal directional drilling at two locations, and one via the existing bridge formation.
- Collector drains and soil berms will be implemented to direct and divert surface water runoff from construction areas such as temporary stockpiles into established settlement ponds, buffered discharge points and other surface water runoff control infrastructure. This planning and placement of these control measures will be of fundamental importance, especially for the areas where works within the 50m buffer zone of surface waters and significant drainage features.

- A dedicated silt fence will be established along all sections of the wind farm access track that are within the 50m buffer zone of the Finisk River and its upper tributaries such as the Lisleagh Stream, Aughkilladoon Stream and Farnanes Stream.
- Buffered drainage outfalls will be placed outside of the 50m buffer zone and will not be positioned in areas with extensive erosion and degradation.
- A CEMP has been developed which will mandate regular inspections and maintenance of pollution control measures. Contingency measures outlining urgent protocols to repair or backup any breaches of designed mitigation measures are also incorporated into the CEMP appended to the EIAR (Jennings O'Donovan, 2023) in Appendix 2.1.
- Pre-construction surveys and on-going construction phase bird monitoring will be completed to identify the presence of golden plover and any other special conservation interest bird species at the project site. In the event that wintering special conservation interest bird species of the Dungarvan Harbour SPA, such as golden plover are found to rely on the project site during the construction phase, works will be restricted from the areas that are being relied upon by these species. A buffer area of 500m will be established around areas that have been identified as being relied upon by wintering populations of golden plover or any other special conservation interest bird species of this SPA. This 500m buffer distance is line with the maximum buffer distance set out by Goodship & Furness (2022) for golden plover.
- The use of "white lights" on the turbines will be avoided as these can attract night flying birds such as migrants. Certain turbines will be illuminated with medium intensity 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.

13.5.66. The conservation objectives, targets and attributes as relevant to the identified potential adverse effects have been examined and assessed in relation to all aspects of the project (alone and in combination with other plans and projects). Mitigation measures proposed to avoid and reduce impacts to a non-significant level have been assessed.

13.5.67. I am satisfied that the implementation of the suite of mitigation measures outlined above will ensure that no adverse effects on the conservation objectives of the Blackwater River (Cork/Waterford) SAC, and Dungarvan Harbour SPA will arise during the construction and operational stages of the proposed development including the potential for run-off of sediment/silt or contaminated waters into any of the watercourses present on site.

In-combination effects with plans, projects and activities

13.5.68. In terms of possible in-combination effects, plans, programmes and existing and proposed developments were considered including Waterford City and County Development Plans, the RSES for the region and other windfarms both existing and permitted. This complete assessment allows for clear, precise and definitive conclusions to be reached in terms of adverse effects on the integrity of European sites.

13.5.69. I do not consider that there are any specific in-combination effects that arise from other plans or projects. The NIS considered the combined impacts of the overall development proposal on the site. I consider that any potential for in-combination effects on water quality in the Blackwater River (Cork/Waterford) SAC, potential for collision risk/disturbance and displacement of SCIs of Dungarvan Harbour SPA and other SPAs in the wider region is negligible. Furthermore, other projects within the area which can influence water quality via rivers and other surface water features are also subject to AA.

13.5.70. In terms of forestry development which arises within the area or proposed replanting resulting from the proposal, I would note that forestry management is subject to a separate licencing regime which, itself, addresses matters including water quality.

<u>Adequacy of Submitted NIS</u>

13.5.71. Having reviewed the documents and submissions, I am able to ascertain with confidence that the project would not adversely affect the integrity of the identified European site of the Blackwater River (Cork/Waterford) SAC in view of the conservation objectives of that site, where such QIs are related to water quality. This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects.

13.5.72. Having regard to the report submitted by the DHLGH, concerns are raised in relation to the methodology applied in terms of the ornithological assessment, which forms the baseline for evaluation of the SCIs related to the SPAs identified in the area, including Dungarvan Harbour SPA. Further information in relation to these issues would be required, should the Board wish to consider the matter further.

Appropriate Assessment Conclusion

13.5.73. 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, 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), 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 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 (dated 2nd August 2023).

14.0 Recommendation

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

15.0 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, the proposed development would materially contravene Policy Objective UTL 13 of the Waterford City and County Development Plan 2022-2028.

Accordingly the Board was not satisfied that, notwithstanding the benefits of renewable energy proposals and the policy support otherwise, that the proposed development would in this instance be plan led as it would not be in accordance with the stated policy objective of the statutory development plan for the subject site. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.

2. The subject site is located within and adjacent to an upland area within a ‘Most Sensitive’ area on the Landscape and Seascape Character Assessment, 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 Development Plan. The proposed development would therefore be contrary to the proper planning and sustainable development of the area, in particular 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’.

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.

NOTE: The Board was not satisfied that the methodology applied to the ornithological surveys as set out in Appendix 7.1 of the EIAR, in particular the timing of surveys using CBS based methods, was scientifically robust for the reasons set out in Section 12.6 of the Inspectors report and which the Board agreed with. This could have implications for Appropriate Assessment. Accordingly, the Board cannot be satisfied that the information allows for a complete assessment of breeding birds in the community.

NOTE: The Board noted the need for the proposed development to comply with the Wind Energy Development Guidelines, 2006, in relation to maintaining appropriate separation distances in respect of adjoining sites.

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.

Una O'Neill
Senior Planning Inspector

31st March 2024