An Bord Pleanála

Inspector's Report ABP 317809-23

Development	Proposed Coolglass windfarm and related works.
Location	In the townlands of Fossy Upper, Aghoney, Gorreelagh, Knocklead, Scotland, Brennanshill, Monamantry, Coolglass, Crissard and Kylenabehy, Co. Laois.
Planning Authority	Laois County Council.
Applicant(s)	Coolglass Windfarm Limited.
Type of Application	Application - Strategic Infrastructure Development
Prescribed Bodies	▪ Dept. of Housing, Local Government and Heritage - Development Applications Unit ▪ Department of Defence ▪ Department of Transport ▪ Health and Safety Authority (HSA) ▪ Transport Infrastructure Ireland (TII)

Public Submissions

- Adrian Brophy
- Alan and Sinead Bennett
- Amy McDonald
- Andrew and Maureen Daly
- Andrew Knowles
- Anne Campbell
- Anne Fleming
- Anne Rogan
- Ben Brennan
- Bernard Wheatly
- Breda Kennedy
- Brenda Oxley
- Brian Oxley
- Brian Ramsbottom
- Brian Stanley
- Bruce Wilkie
- Caragh Moran
- Cathal Fleming and Caoimhe McElhinney
- Catherine Fitzgerald and Others.
- Ciara Moore and Others
- Conor Brennan
- Daniel Dunne
- Darragh Kettle
- Darren Hanlon
- Davia Danilkeviciene
- Deirdre MacQuaile and Darragh Kettle
- Deirdre McDonald
- Dermot Cooney
- Dermot Cooney and Margaret Devoy
- Eamon Fleming
- Eamonn and Ann Leech
- Eddie McDonald
- Edel McHugh
- Edward Mcdonald Jr
- Elaine Hendy
- Elizabeth Carroll

- Elizabeth DuBerry
- Ellen McDonald
- Frances Lawless
- George Brophy
- Gladys Kavanagh
- Jake and Maurice Deegan
- James and Anne Delaney
- James Knowles
- Jim Knowles
- Jimmy and Deirdre Doone
- Joe and Grace Higgins
- John and Breda Kennedy
- John Fleming
- John Shortell
- Joseph and Marie Knowles
- Joseph Knowles
- Joyce Crowley
- Karen Minchin
- Kate Knowles
- Kathleen Foley
- Kathleen McDonald
- Kiara Geoghegan
- Larry and Una Doone & Others.
- Leatheie and Frank Higgins
- Liam Knowles
- Linda Boland Fisher
- Malvina Walsh
- Maria C Fleming
- Mark DuBerry
- Martin and Catherine Moore
- Martin Carroll
- Martin Knowles
- Megan-Emily Woodley
- Melanie Dunne
- Michael Dunne
- Michael Knowles
- Michael O'Connor
- Micheal Fleming
- Moira Knowles
- Padraig Fleming
- Pat and Marian Knowles

- Pat Duff
- Patrick and Karen Fleming
- Patrick Dempsey
- Patrick Fleming
- Patrick Knowles
- Paul Tuite
- Rebecca Clooney
- Robert Cullen
- Roghan Headen
- Rosalind Jellet
- Sandra Knowles
- Sarah Tuite
- Sean Fleming
- Sean Wilkie
- Shirley Rowan Maher
- Sile O'Connor
- Sinead Bennett
- Sinead Delaney
- Siobhan Connolly
- Stephen Ainsworth and Susan Smith
- Susan Smith
- Swan Spink Wolfhill Luggarcurren Wind Aware Group (Kieran Brophy and Peter Sweetman)
- Temple of Eiriu
- The Resident
- Theresa Wilkie
- Thomas and Irene Doone
- Timothy Crowley
- William Carroll
- William Fisher
- Wolfhill National School
- Yvonne McNamara

Date of Site Inspection	11th April 2024
Inspector	Brendan Coyne

Contents

1.0 Introduction

1.1.1. This is an application to construct a 13 no. turbine windfarm and all associated works in the townlands of Fossy Upper, Aghoney, Gorreelagh, Knocklead, Scotland, Brennanshill, Monamantry, Coolglass, Crissard, and Kylenabehy in County Laois.

2.0 Pre-Application Consultation

2.1.1. **ABP Ref. 313375-22** Statkraft Coolglass Windfarm Ltd. initiated pre-application consultations with the Board under Section 37B of the Planning and Development Act, 2000 (as amended), for the construction of a 13-turbine wind farm spanning the townlands of Fossy Upper, Aghoney, Gorreelagh, Knocklead, Scotland Brannanshill, Monamantry, Coolglass, Crissard, and Kylenabehy in Co. Laois, with a total predicted output of 85.8 MW to 93.6 MW. Each turbine has a tip height of 180m and is designed to generate between 6.6 MW and 7.2MW, with the wind farm proposed to be developed in two clusters, each connected to the grid. The initial pre-application consultation was conducted via web conference on 16th June 2022, attended by representatives from Statkraft and SLR Consulting. During the meeting, discussions on the proposed wind farm project were held, with a focus on its strategic importance and planning details. The conclusion was a recommendation by the Board's representatives for a subsequent meeting in early Autumn to further benefit the project's progression.

2.1.2. A second meeting was held with An Bord Pleanála via web conference on the 16th of November, 2022. The purpose of the meeting was to develop the points raised by the Board in the previous meeting and to inform the Board of the progression of the project. This reviewed the progress and additional information provided for the wind farm project. The Board concluded with a recommendation for the Applicant to address specific environmental and planning considerations to move forward effectively. The prospective Applicant requested the pre-application process be kept open to ascertain pending legislation regarding design options in the Planning and Development Maritime and Valuation (Amendment) Act 2022.

2.1.3. The Board, in its communication dated 11th May 2023, confirmed the project as strategic infrastructure development (SID) and advised that a planning application should be submitted directly to the Board. The pre-application process included

discussions on project details, environmental assessments, and strategic considerations, with the Board outlining the steps for formal application submission and emphasising the project's potential strategic importance to the region's renewable energy goals and its alignment with national and regional planning frameworks.

3.0 Site Location and Description

3.1.1. The site is located c. 11 km southeast of Portlaoise, 14 km northwest of Carlow, and 11 km east of Abbeyleix, in County Laois, and is also 2 km from the Kilkenny County boundary. The site has a stated area of 74.32 ha and encompasses an elongated area of c. 6 km in length, running roughly north to south, and includes lands within the townlands of Fossy Upper, Aghoney, Gorreelagh, Knocklead, Scotland, Brennanshill, Monamantry, Coolglass, Crissard, and Kylenabehy. The proposed development straddles two prominent hills, namely Fossy Mountain and Wolfhill, lying to the northeast of Swan and southeast of Timahoe. Fossy Hill is a notable natural landmark within the central study area, reaching an altitude of approx. 325 meters above ordnance datum (AOD).

3.1.2. The proposed development is split into two clusters - northern and southern. The northern cluster is bounded by Fossy Lower Road to the north, the R426 to the west, Luggacurren Road to the east, and Knocklead Road to the south. This section is characterised by a topography of 285 – 325 meters AOD with moderate to steep gradients, especially towards the west and north. Conversely, the southern cluster, covering the Wolfhill area, is defined by Knocklead Road, Crissard Road, Knocklead/Moyadd road, and Slatt Lower Road. Elevations here span from 196 – 300 meters AOD with moderate to gentle slopes facing north and west.

3.1.3. The surrounding region exhibits forestry plantations and agricultural landscapes, with elevation variances from 196 m to 325 m AOD. The site's vicinity is characterised by one-off rural dwellings, with 56 properties within a 1 km radius of the proposed development and 105 residences within 500 meters of the cable routes. The closest residential dwelling is situated c. 722 meters from the nearest proposed wind turbine. Access to the site is facilitated by the R426 Regional Road to the west, lying between the M7 Motorway and the N78 National Road, providing connectivity from both northern and southern directions.

3.1.4. A 33kV collector circuit cable will run between the northern and southern clusters of the proposed development. The Turbine Delivery Route is located within the townlands of Monamanry, Brennanshill, Knocklead, Aghoney, Timahoe, Carrigeen, Ballygormill South, Money Upper, Hophall, Rathleague, Ballymooney, Rathbrennan.

3.1.5. The Applicant has proposed two options for constructing the cable route connecting the Proposed Development to the national grid. These options pass through various townlands. Option 1 includes Knocklead, Baunogemeely, Knockagrin, Cleanagh, Knockbaun, Garrintaggart, Gragiguehawn, Boleybeg, and Knockardagur. Option 2 covers Aghoney, Fossy Upper, Ballintlea Lower, Fossy Lower, Timahoe, Coolnabacky, Esker, Cremorgan, and Carrigeen. Although both routes have been evaluated in the submitted Environmental Impact Assessment Report (EIAR), they are not part of the Proposed Development and are not included in this planning application.

3.1.6. The proposed development site is linked with several watercourses. In the northern cluster, the Fossy Lower stream flows westward to join the Aghoney Stream, a tributary of the River Stradbally, located approximately 0.6 km southwest of the site. The northern cluster's runoff drains north via the Honey and Orchard Lower Streams, which eventually meet the River Crooked c. 3.7 km north of the site. Surface runoff from the eastern area of the northern cluster flows towards the Fallowbeg Upper Stream, which runs in a north-eastern direction and flows into the River Crooked. The site entrance at the Northern Cluster is near the confluence of the Scotland and Owveg [Nore] Streams, with the latter joining the River Nore some 17.6 km southwest of the site. At the southern cluster, runoff is channelled through the Brennanshill and Moyadd Streams into the Clogh Stream, which merges with the River Dinin, a tributary of the River Nore, after c. 5.8 km.

4.0 **Proposed Development**

4.1.1. The application seeks 10-year planning permission for the construction of a wind farm with an operational lifespan of 35 years. The wind farm is proposed to be developed in two clusters situated on Fossy Mountain and Wolfhill in County Laois, known as the Northern and Southern clusters, respectively.

4.1.2. The proposed development includes the following:

- 13 no. wind turbines within two clusters with an overall ground-to-blade tip height of 180m.
- The wind turbines will have a rotor diameter ranging from 155m to 162m and a hub height ranging from 99 to 102.5m.
- Construction of permanent turbine hardstands and turbine foundations.
- Construction of 1 no. permanent 110 kV electrical substation including 2 no. control buildings with welfare facilities, all associated electrical plant and equipment, security fencing and gates, all associated underground cabling, wastewater holding tank, and all ancillary structures and works.
- Construction of a 33kV collector cable circuit connecting the wind farm's two clusters along the L3851/Knocklead Road.
- Construction of 2 no. temporary construction compounds with associated temporary site offices, parking areas and security fencing.
- Development of one on-site borrow pit.
- Construction of new permanent internal site access roads, upgrade of existing internal site access roads, including passing bays and all associated drainage infrastructure
- Development of an internal site drainage network and sediment control systems.
- All associated underground electrical and communications cabling connecting the wind turbines to the wind farm substation.
- Ancillary forestry felling to facilitate the construction of the development.
- All associated site development works, including berms, landscaping, and soil excavation.
- Improvement of a site entrance to an existing access off the L3851/Knocklead local road to include localised widening of the road and the creation of a splayed entrance to facilitate the delivery of abnormal loads and turbine component deliveries. Improvements include the removal of existing vegetation for visibility splays to facilitate the use of access to deliver construction materials to the site.
- A new site entrance slip road from the L3851 / Knocklead local road to facilitate the delivery of abnormal loads and turbine component deliveries. Works at this location require the removal of existing forestry to facilitate the use of the access for the

delivery of construction materials to the site and for use during the operational phase.

- Construction related temporary upgrade works on the turbine delivery route to facilitate the delivery of turbine components to include the use of temporary road surfaces at a roundabout at the southern exit of Junction 16 of the M7, the R425/N80 roundabout and the R426 – L3851 junction.
- The erection of a permanent meteorological mast with a height of 102.5m.
- The turbine delivery will involve temporary works within several townlands.
- The estimated Export Capacity (MEC) of the development is expected to be between 85.8 – 93.6 MW.

4.1.3. Specifically, the two clusters will contain the following:

- The Northern cluster will contain seven turbines (nos. 1-7), a 110 kV substation, a temporary construction compound, a 102.5m high meteorological mast, a site access point (AP1), and a 33kV collector connecting cable.
- The Southern cluster will contain six turbines (nos. 8-13), a borrow pit, a temporary construction compound (TCC2), and a site access point (AP2).

4.1.4. The application specifies that both a cable route (with two 110 kV cable route options) connecting the wind farm to the national grid and a recreational amenity trail, though not included in the current planning application, are considered as components of the project in the Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS). These elements will be pursued separately in future planning applications under Section 182(A) of the Act.

4.1.5. **Submitted Documentation**

The application included the following accompanying documents:

- Planning Cover Letter to An Bord Pleanála;
- Completed Planning Application Form;
- Landowners Letters of Consent;
- Newspaper Notices;
- Site Notices;

- Copies of Notification Letters sent to the bodies prescribed by An Bord Pleanála;
- Environmental Impact Assessment Report (EIAR) comprising: Non-Technical Summary (Volume I), Environmental Impact Assessment Report (Volume II), EIAR Technical Appendices (Volume III), and Landscape and Visual Impact Amenity Viewpoint Photomontage Booklets (Volume IV).
- Natura Impact Statement;
- Planning Report;
- Planning application drawings of the proposed development;
- Letter from the Applicant confirming that they will be a Statutory Undertaker for the purpose of the proposed grid connection works;
- USB sticks of planning application documentation.

4.2. Environmental Impact Assessment Report

4.2.1. The Environmental Impact Assessment Report (EIAR) for the Coolglass Wind Farm details the project site and its surroundings, affirming alignment with EU, national, and local policies on planning, energy, and environmental conservation. It details alternatives to the proposed development and presents an in-depth project description.

4.2.2. Volume II, comprising the main text of the EIAR, examines the environment set to receive the proposed development, the methodologies employed in the study, the potential environmental impacts across various fields/topics, and proposed mitigation strategies for the construction, operational, and decommissioning stages of the wind farm. It also evaluates the residual and cumulative impacts, taking into consideration climate change and potential risks from major accidents or natural disasters.

4.2.3. Informed by a visual impact analysis and numerous technical appendices, the report includes a Non-Technical Summary. Detailed mitigation measures are provided within the main body of the EIAR and accompanying documents, e.g., the Construction and Environmental Management Plan (CEMP).

4.2.4. The EIAR concludes in its various sections that, with the implementation of mitigation measures, the project's environmental impacts—particularly regarding residential and visual amenities, biodiversity, water quality, and aquatic ecology—would be effectively managed. Furthermore, the proposed development would comply with climate change and renewable energy policies without adversely affecting local amenities or posing traffic hazards, thereby supporting the area's sustainable development.

4.3. Natura Impact Statement

4.3.1. A Stage 1 Appropriate Assessment (AA) screening exercise was carried out for the proposed wind farm development, and a Stage 2 Natural Impact Statement was submitted.

4.3.2. Stage 1 AA Screening Report

4.3.3. The AA Screening for the Coolglass Wind Farm outlined the project's site characteristics and its proximity to Natura 2000 European Sites, evaluating potential impacts within a 15km radius. The screening detailed direct, indirect, and cumulative effects on these sites, assessing their significance. Notably, the development, excluding minor works on access routes, lies outside Natura 2000 sites, limiting direct impact potential. However, two proximate Natura 2000 sites, the River Barrow and River Nore SAC and the River Nore SPA linked hydrologically to the project, necessitated a Stage 2 Natura Impact Statement due to potential significant effects on their conservation objectives.

4.3.4. Natura Impact Statement Report

4.3.5. The Natura Impact Statement (NIS) report provides an in-depth overview of Stage 2 AA, detailing the methodology adopted for assessing impacts on the River Nore and River Barrow SAC (Site Code: 002162) and the River Nore SPA (Site Code: 004233). It elaborates on the proposed development, the existing environment and ecological baseline, and the potential significant effects identified post-Stage 1 AA. The assessment evaluates direct, indirect, and cumulative impacts using data from ecological surveys, the initial AA screening, relevant Environmental Impact Assessment Report (EIAR) chapters, and the Construction & Environmental Management Plan (CEMP). It also highlights the project's location outside designated

Natura 2000 sites, predominantly in improved Agricultural Grassland (GA1) areas without significant water bodies. Mitigation measures proposed within the EIAR are outlined to address potential effects on European sites. The report concludes, based on the best scientific knowledge and with proposed mitigation measures, that the project, alone or in combination with other initiatives, will not detrimentally affect the integrity of the European sites in question, ensuring compliance with environmental regulations and conservation objectives.

4.4. Policy and Context

4.5. Laois County Council Development Plan 2021-2027

The statutory plan for the area includes the following relevant Development Plan policies, objectives, and provisions:

Section 3.4: Integrating Climate Action into the Plan

- Emphasises support for transitioning to a low-carbon, climate-resilient society.

Climate Mitigation Objectives:

- **CM RE 1** - Prepare a Renewable Energy Strategy (RES) for County Laois, including identifying targets for contributing to government renewable energy and climate change mitigation goals, particularly in wind energy production and potential resources, with the variation to the County Development Plan set to commence within one year of plan adoption.
- **CM RE 2** - Promote renewable energy development, including hydro, bio-energy, wind, solar, geothermal, and landfill gas, while ensuring compliance with standard planning and environmental criteria in collaboration with statutory and other energy providers.
- **CM RE5** - Promote and facilitate wind energy development in accordance with the Guidelines for Planning Authorities on Wind Energy Development from the Department of Housing, Planning and Local Government, including any updates, along with the Appendix 5 Wind Energy Strategy of the Plan, and interim guidelines for planning authorities on statutory plans, renewable energy, and climate change, while ensuring compliance with standard planning and environmental criteria.

- **CM RE6** - Ensure a setback distance for wind turbines from schools, dwellings, community centres, and all public roads in all areas open for consideration for wind farm development as per the Guidelines for Planning Authorities on Wind Energy Development.
- **CM RE 7** - Promote the location of wind farms and wind energy infrastructure in the 'preferred areas' as outlined on Map 3.2, to prohibit such infrastructure in areas identified as 'Areas not open for consideration' and to consider, subject to appropriate assessment, the location of wind generating infrastructure in areas' open for consideration' and as per the Laois Wind Energy Strategy 2021-2027.

Section 3.5 RENEWABLE ENERGY

Section 3.5.5 WIND ENERGY

Table 3.1 – Wind Energy Outputs for County Laois (completed and granted).

Table 3.3 - County Laois's contribution in terms of permitted applications to realising overall national targets.

Map 3.2: **Wind Energy Map**

- **DM RE 2 WIND ENERGY DEVELOPMENT** - Refer to Section 6 and Section 7 of Appendix 5 Wind Energy Strategy for development management standards. The Council's assessment of wind energy planning applications will consider: (a) wind energy development guidelines for planning authorities; (b) the wind energy strategy designations map for Laois, distinguishing between ‘areas open for consideration’ and ‘areas not deemed suitable’. Additionally, evaluations will include impacts on (i and ii) visual and residential amenities; (iii) project scale, layout, and cumulative landscape effects; (iv) protected views; (v) ecology, soil, and hydrology; (vi) ground conditions, geology; (vii) the road network; and (vii) human health regarding noise.

4.5.1. **Chapter 11 Biodiversity and Natural Heritage**

Green Infrastructure Development Management Standard - DM BNH 3 Green Infrastructure Plan - Require all proposals for large-scale development such as road or drainage schemes, wind farms, housing estates, industrial parks, or shopping centers to submit a Green Infrastructure Plan as an integral part of a planning application.

Policy Objectives for Landscape Character Areas

- **LCA 1** - Ensure that consideration of landscape sensitivity, as indicated in Table 11.6 of the Plan, is an important factor in determining development uses In areas of high landscape sensitivity, the design, type and the choice of location of proposed development in the landscape will also be critical considerations
- **LCA 2** - Protect and enhance the county's landscape, by ensuring that development retains, protects and, where necessary, enhances the appearance and character of the existing local landscape and conserve valuable habitat including any European and National Designations.
- **LCA 3** - Seek to ensure that local landscape features, including historic features and buildings, hedgerows, shelter belts and stone walls, are retained, protected and enhanced where appropriate, so as to preserve the local landscape and character of an area, whilst providing for future development.
- **LCA 4** - Seek to minimise the individual and cumulative adverse visual impacts that local concentrations of one-off housing, outside of settlements, may have on Hills and Upland, River Corridor and Lakes and Mountain landscape character areas or High Sensitivity areas. In this regard, in locations where the Council considers that there is a risk of individual or cumulative adverse impacts, the Council will only consider proposals for housing developments where a need for the dwelling has been demonstrated in accordance with the criteria contained in the Rural Housing Policy contained in Chapter 4.

Policy Objectives for Hills and Uplands Areas and Mountain Areas

- **LCA 5 -** Ensure that development will not have a disproportionate visual impact (due to excessive bulk, scale or inappropriate siting) and will not significantly interfere with or detract from scenic upland vistas, when viewed from areas nearby, scenic routes, viewpoints and settlements.
- **LCA 6 -** Ensure that developments on steep slopes (i.e. >10%) will not be conspicuous or have a disproportionate visual impact on the surrounding environment as seen from relevant scenic routes, viewpoints and settlements.
- **LCA 7** - Facilitate, where appropriate, developments that have a functional and locational requirement to be situated on steep or elevated sites (e.g., reservoirs,

telecommunication masts, or wind energy structures) where residual adverse visual impacts are minimised or mitigated.

- **LCA 8** - Maintain the visual integrity of areas which have retained a largely undisturbed upland character and Respect the remote character and existing low-density development in these areas.
- **LCA 9** - Have regard to the potential for screening vegetation when evaluating proposals for development within the uplands.
- **LCA 10** - Actively propose the designation of the Slieve Blooms as a Special Amenity Area and seek an Order to that effect.
- **LCA 11** - Protect the positive contribution that views across adjacent lowland areas and landmarks within the landscape make to the overall landscape character.

Section 11.11.1 Views and Prospects

Table 11.7: Scenic Views and Prospects in County Laois

Map 11.8: Scenic Views and Prospects

Policy Objectives for Views and Prospects:

- **SV 1:** Protect views from designated scenic routes indicated in Table 11.7 and Map 11.8 (Scenic Views and Prospects in County Laois) of the Plan, by avoiding any development that could disrupt the vistas or disproportionately impact on the landscape character of the area, thereby affecting the scenic and amenity value of the views.

4.6. **Appendices:**

4.6.1. **Appendix 5: Wind Energy Strategy, January 2022 – Including Ministerial Direction changes**

Section 4.5 Landscape Character Types in County Laois

LCT 1: Mountains / Hills and Upland Areas

Table 2: Views and Prospects worthy of Preservation

Section 5. Wind Energy Strategy for County Laois - Area Classifications: The Wind Energy Strategy for County Laois identifies four distinct area classifications

based on a comprehensive analysis integrating wind data and other key factors like existing and approved wind energy developments. These classifications are:

Strategic Areas: Defined as highly suitable for wind farm development, these areas must meet criteria such as viable wind speeds, lack of designations, sparse population, proximity to grid connections, and capacity to support wind development. However, it's noted that County Laois currently has no areas that fit this description due to the exclusion of the Slieve Bloom Mountains, which, despite having the most optimal wind regime, are disqualified based on environmental designations, tourism potential, and similar exclusions in neighbouring County Offaly.

Areas Not Open for Consideration: This category includes regions unsuitable for wind farm development due to their scenic, ecological, or tourism values. Specifically, the Slieve Bloom Mountains, Cullahill Mountain, and "The Seven Hills of Laois" are excluded based on their extensive environmental designations and significant tourism and leisure potential.

Preferred Areas: These areas are considered suitable for wind energy development, aligning with landscape character assessment policies unless specific local planning conditions suggest otherwise. One identified preferred area in County Laois encompasses Bord Na Mona cutaway bog sites and adjacent lands, particularly around the borders of Laois, Tipperary, and Kilkenny. This area, free from NHA, SAC, or SPA designations, demonstrates the potential for wind energy development on rehabilitated bogland, as seen in nearby successful projects.

Areas Open for Consideration: Wind energy development applications in these areas are evaluated on a case-by-case basis, with applicants needing to justify the suitability of their proposals. The strategy also acknowledges a growing interest in individual turbine developments for residential, agricultural, and commercial use, highlighting the potential for significant energy cost savings. County Laois has already seen successful applications for single turbine installations, indicating a favourable outlook for similar projects across the county. Micro renewable generation for various uses is supported under specific statutory criteria.

4.6.2. **Appendix 6: Landscape Character Assessment**

4.6.2.1. Section 5. Landscape Character Types in County Laois

Map 11.7: Landscape Character Assessment: The site is located in Landscape Type 1: Mountain, Hills and Upland Areas.

Policy Objectives for **Hills and Uplands Areas and Mountain Areas** include:

- **LCA 5:** Ensure that development does not have a disproportionate visual impact (due to excessive bulk, scale, or inappropriate siting) and does not significantly interfere with or detract from scenic upland vistas when viewed from nearby areas, scenic routes, viewpoints, and settlements.
- **LCA 6:** Ensure that developments on steep slopes (i.e., >10%) are not conspicuous or do not have a disproportionate visual impact on the surrounding environment as seen from relevant scenic routes, viewpoints, and settlements.
- **LCA 7:** Facilitate, where appropriate, developments with a functional and locational requirement to be situated on steep or elevated sites (e.g., reservoirs, telecommunication masts, or wind energy structures) while minimising or mitigating residual adverse visual impacts.
- **LCA 8:** Maintain the visual integrity of areas that have retained a largely undisturbed upland character and respect the remote character and existing low-density development in these areas.
- **LCA 9:** Consider the potential for screening vegetation when evaluating proposals for development within the uplands.
- **LCA 10:** Actively propose the designation of the Slieve Blooms as a Special Amenity Area and seek an Order to that effect.
- **LCA 11:** Protect the positive contribution that views across adjacent lowland areas and landmarks within the landscape make to the overall landscape character.

4.6.2.2. <u>Section 5.2 - Wind energy policy objectives include the following (summarised):</u>

- **WES 1:** Support the development of wind energy resources in County Laois within appropriate scales and locations, aiming to enhance energy security, reduce dependency on fossil fuels, and align with national and European renewable energy and climate change policies.

- **WES 2:** Promote Laois as a low carbon County by 2018 to attract inward investment to the County and the wider Midlands region.
- **WES 3:** Collaborate with agencies like the Laois County Development Board, IDA, and Enterprise Ireland to promote wind energy in appropriate sites, encouraging investment in research and technology associated with wind farms and other renewable energy technology.
- **WES 4:** Encourage community involvement and require community benefit in proposed wind farm developments where feasible.

4.6.2.3. Section 5.3 Specific Area Policies

Three area classifications [there are no Strategic Areas] have been recommended for wind farm development in County Laois, and specific policies pertaining to each are presented below:

- **WES 5: Preferred Areas**
- These areas are considered suitable for wind farm development because of sufficient wind speeds, access to the grid network, and established patterns of inquiries. Projects within these areas must demonstrate conformity with existing and approved wind farms to avoid visual clutter, be developed in line with the Planning Guidelines in terms of siting, layout, and environmental studies. Proximity to a Special Area of Conservation or Special Protection Area will require a Habitats Directive Assessment under Article 6 of the Habitat Regulations.
- **WES 6: Areas Open for Consideration**
- Wind energy applications in these areas will be evaluated on a case-by-case basis subject to viable wind speeds, environmental resources and constraints, and cumulative impacts.
- **WES 7: Areas Not Open for Consideration**
- These areas are not considered suitable for wind farm development due to their overall sensitivity arising from landscape, ecological, recreational, and/or cultural and built heritage resources as well as their limited wind regime.

4.6.2.4. Section 6 - Development Control Standards for Wind Farms in County Laois

- **Section 6.1 Buffer Zones** - Maintain a setback distance of 1.5 kilometers from wind turbines to schools, dwellings, community centers, and public roads in areas open for wind farm development, adhering to adopted National Policy Guidelines.
- **Section 6.2 Boundary** -Assess proposed wind farms' impact on adjacent sites' development potential, evaluating turbine distances from adjacent landholdings case by case.
- **Section 6.3 Shadow Flicker**- Conduct assessments of theoretical and likely shadow flicker levels, proposing mitigating measures if necessary based on meteorological constraints.
- **Section 6.4 Cumulative Impacts** -Consider the cumulative effect of wind farms to avoid overdevelopment in open areas.
- **Section 6.5 Archaeology** -Conduct archaeological assessments for sites near Recorded Monuments, permitting turbine relocation if needed to minimise impacts, subject to planning authority agreement.
- **Section 6.6 Bird Migratory Routes** - Prohibit wind turbines within known migratory wildfowl flight paths.
- **Section 6.7 Fencing** - Allow fencing around substations only, except as part of vegetation rehabilitation, with removal timelines agreed upon with the planning authority.
- **Section 6.8 Noise** - Ensure compliance with noise specifications during development, with monitoring and agreed mitigating measures for any noise exceedances.
- **Section 6.9 Environmental Monitoring** - Require environmental monitoring near sensitive areas, with specific measures for liquid and hydrocarbon storage, silt trapping, and equipment removal.
- **Section 6.10 Roads** - Use unsurfaced access roads minimising visual impact, remove them upon decommissioning unless alternative use is agreed, and reinstate public road damage.

- **Section 6.11 Aquifers** - Demonstrate no significant impacts on aquifers, groundwater, or drinking water.
- **Section 6.12 Ancillary Structures and Equipment** - Limit structures to essential installations, submit detailed plans, and include suitable landscaping proposals.
- **Section 6.13 Grid Connection** - Provide likely grid connection routes with planning applications, laying connections underground within wind farms.
- **Section 6.14 Electromagnetic Interference** - Assess and include measures to monitor and remedy potential electromagnetic interference.
- **Section 6.15 Aeronautical Safety** - Refer proposals to the Irish Aviation Authority for recommendations before planning submission.
- **Section 6.16 Financial Contributions** - Pay development levies and deposits/bonds as per the Development Contribution Scheme.
- **Section 6.17 Safety Aspects** - Submit maintenance agreements to ensure turbine safety and consult with relevant authorities regarding setbacks from major roads.
- **Section 6.19 Decommissioning of Associated Infrastructure at End of Life** - Include plans and conditions for site restoration at the end of its life, accompanied by a bond payable to the planning authority for infrastructure removal.

Section 7.3 - Siting and Design of Wind Farms

- **Section 7.3.1 Hilly and Flat Farmland** Developments must be scaled in sympathy with the landscape's scale, avoiding inappropriate large wind farm developments over numerous small fields. Turbine spacing, layout, and height should reflect the landscape's characteristics, with a balance found in relation to the underlying landscape.
- **Section 7.3.2 Transitional Marginal Landscapes** These landscapes typically include upland or lowland areas farmed extensively with some regeneration of natural vegetation allowed. Turbine arrangement, spacing, and layout should be irregular to match the landscape's irregularity, with varied turbine heights reflecting the landscape's features.

4.6.3. **Cultural Heritage**

4.6.4. There are no Recorded Monuments, sites of archaeological interest, Protected Structures, or NIAH features identified within the boundary of the proposed Coolglass Wind Farm site. The closest features in the surrounding include the following:

- **LA025-013**: Megalithic structure, 1km east of the site.
- **LA025-014**: Potential fulacht fia, same location as LA025-013.
- **LA031-020**: Barrow, 1km west of the site.
- **LA031-019**: Barrow, adjacent to LA031-020.
- **LA031-023, LA031-024, LA031-025**: Fulacht Fia sites, 0.4km south of Turbine 8.
- **LA025-002**: Early medieval rath, 0.4km north of the site.
- **LA025-006**: Early medieval rath, 0.75km northeast.
- **LA031-021:** Enclosure**,** 0.8km southeast of Turbine 8
- **LA031-027**: 'Standing stone', 0.8km southeast of Turbine 8.
- **LA019-016001, LA019-016002 & LA019-016**: Graveyard and church, 0.5km north.
- **LA025-003**: Piper's Pit, 0.9km northeast.
- **LA019-017:** Enclosure**,** 1km north.
- **LA019-018**: Moated site, 0.9km north.

4.7. Kilkenny County Development Plan 2021-2027

While the proposed development is not located within the boundary of Kilkenny County Council, it is located c. 2 km from the Kilkenny County boundary. Key policies of relevance from the Kilkenny County Development Plan 2021-2027 include:

Chapter 11 of the KCDP outlines mechanisms to support increased renewable energy production countywide, aligning with the EU Renewable Energy Directive 2018/2001/EU.

- **Objective 11A** seeks to supports Ireland's transition to low-carbon energy by upgrading grid infrastructure, integrating renewables, and ensuring readiness for growing demand.

- Section 11.5 "Wind Energy" identifies Kilkenny's current installed wind energy capacity at approximately 76 MW generated by 39 turbines.
- The Kilkenny County Development Plan aims for 100% renewable electricity by 2030, promoting all forms sustainably while considering heritage, biodiversity, and residential needs. Objectives include:
- **Objective 11A:** Supporting and facilitating energy provision in line with Ireland's low carbon transition by maintaining infrastructure and integrating renewables.
- **Objective 11B:** Identifying and designating a Decarbonation Zone (DZ) in the Climate Action Plan, focusing on climate mitigation, adaptation, and biodiversity measures to address local low carbon energy needs.

4.8. Other Relevant Government Policy / Guidelines

4.8.1. National Context

4.8.2. National Planning Framework – Project Ireland 2040, DoHP&LG 2018

This plan sets out a strategic national planning framework for the entire country. It recognises the need to move toward a low carbon and climate resilient society, and it emphasises that rural areas have a strong role to play in securing a sustainable renewable energy supply. It seeks to harness the country's renewable energy potential, achieve a transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050, and promote new energy systems & transmission grids (including on and offshore wind energy). The following National Policy Objectives (NPOs) are relevant:

- **NPO 21:** Enhance the competitiveness of rural areas by supporting innovation in rural economic development and enterprise through the diversification of the rural economy into new sectors and services, including ICT-based industries and those addressing climate change and sustainability.
- **NPO 54:** Reduce our carbon footprint by integrating climate action into the planning system in support of national targets for climate policy mitigation and adaptation objectives, as well as targets for greenhouse gas emissions reductions.

- **NPO 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.

4.8.3. **National Development Plan 2021-2030**

This plan underpins the NPF Plan, and it sets a framework for investment priorities which includes expenditure commitments to secure a wider range of Strategic Investment Priorities.

4.8.4. **National Energy and Climate Plan, 2021-2030**

The National Energy and Climate Plan (NECP) was prepared in accordance with Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action. The EU Governance Regulation is effectively the piece of EU legislation under which Ireland is held accountable in meeting its de-carbonisation targets. This Plan outlines Irelands energy and climate policies in detail for the period from 2021 to 2030 and looks onwards to 2050. The NECP is a consolidated plan which brings together energy and climate planning into a single process for the first time. It envisages a target of at least 55% renewable energy in electricity by 2030, with specific annual targets for delivery of onshore and offshore wind in order to meet the requirements of Article 4 of the Regulation. The minimum target for onshore wind in Ireland by 2025 is a total installed capacity for 5900MW, an increase of approximately 1700MW on 2020.

4.8.5. **Climate Action Plan 2023**

The Climate Action Plan 2023 for Ireland sets ambitious targets to reduce emissions across various sectors, aiming for a 75% reduction in the power sector through a significant upscaling of renewable energy, particularly wind. Key objectives include accelerating the delivery of onshore wind, offshore wind, and solar projects, and dialling up to 9 GW of wind power by 2030. This plan underscores the vital role of wind energy in achieving a low-carbon economy and aligns with the broader goal of transitioning to a more sustainable and resilient energy system. The Climate Action Plan 2024 is currently subject to AA, SEA and public consultation.

4.8.6. **Wind Energy Development Guidelines - Guidelines for PAs, June 2006.**

The Guidelines advise that a reasonable balance must be achieved between meeting Government Policy on renewable energy and the proper planning and sustainable

development of an area and it provides advice in relation to the information that should be submitted with planning applications. The impacts on residential amenity, the environment, nature conservation, birds and the landscape should be addressed. It states that particular landscapes of very high sensitivity may not be appropriate for wind energy development.

4.8.7. **Draft Wind Energy Development Guidelines, 2019**

The Draft Guidelines propose several key amendments to the original document in relation to noise, visual amenity, shadow flicker and community engagement. The application of more stringent noise limits in line with WHO noise standards together with a more robust noise monitoring system and reporting system is proposed. The mandatory minimum 500m setback from houses is retained but augmented by a setback of 4 x turbine height from sensitive receptors.

4.8.8. **National Landscape Strategy for Ireland, 2015-2025**

This document seeks to integrate landscape into our approach to sustainable development, carry out an evidence-based identification and description of landscape character, provide for an integrated policy framework to protect and manage the landscape and to avoid conflicting policy objectives.

4.8.9. **The Planning System and Flood Risk Management Guidelines, 2009**

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

4.8.10. **Regional Context**

4.8.11. **Regional Spatial & Economic Strategy – Eastern and Midlands Region**

4.8.12. The Regional Spatial & Economic Strategy (RSES) for the Eastern and Midlands Region 2019-2031 aligns with Project Ireland 2040, the National Planning Framework (NPF), and the National Development Plan 2018-2027. It aims to coordinate City & County Development Plans and Local Enterprise & Community Plans while promoting sustainable development of additional electricity generation capacity and supporting the expansion of the transmission network. The strategy prioritises the development

of renewable energy resources in a sustainable manner. Key Regional Policy Objectives (RPOs) include:

- RPO 4.84: Support the rural economy and initiatives in relation to renewable energy so as to sustain the employment opportunities in rural areas.
- RPO 6.9: Ensure that the Midlands is well positioned to address the challenges posed by the transition to a low carbon economy and renewable energy
- The Strategy supports an increase in the amount of new renewable energy sources in the Region, including the use of wind energy.
- RPO 7.36: Planning policy at local authority level shall reflect and adhere to the principles and planning guidance set out in Department of Housing, Planning and Local Government publications relating to 'Wind Energy Development' and the DCCAE Code of Practice for Wind Energy Development in Ireland on Guidelines for Community Engagement and any other relevant guidance which may be issued in relation to sustainable energy provisions.

4.8.13. **Other Policy Documents**

Ireland's Transition to a Low Carbon Energy Future 2015-2030

Climate Action and Low Carbon Development (Amendment) Act (2021)

Climate Action Charter for Local Authorities (2019)

Climate Change Sectoral Adaptation Plan (2020)

Circular PL 20-13 - Review of Wind Energy and Renewable Energy Policies in Development Plans

Traffic Management Guidelines, Department of Transport (2019).

Traffic and Transport Assessment Guidelines (2014)

TII standard DN-GEO-03060 'Geometric Design of Junctions'

Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning

Authorities, Department of the Environment, Heritage and Local Government, (2009)

OPR Practice Note PN01 - Appropriate Assessment Screening for Development

Management' (OPR, 2021).

Architectural Heritage Protection – Guidelines for Planning Authorities (2011)

National Biodiversity Action Plan 2023-2027

Tree Preservation Guidelines DOELG (1994)

Ireland's Invasive Alien Species Soil and Stone Pathway Action Plan 2023-2027

BS 5228-1:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites – Noise (2009)

Best Practice Guidelines for the Irish Wind Energy Industry (2012), published by the Irish Wind Energy Association.

Environmental Noise Guidance for Local Authority Planning & Enforcement Departments (2021), published by Association of Acoustic Consultants of Ireland.

4.8.14. **EU Legislation/Policy**

4.8.15. **Renewable Energy Directive 2018/2001/EU**

The Directive sets out a new target for share of energy from renewable sources in the EU to at least 32% for 2030, with a review for increasing this target through legislation by 2023. A major shift within the revised Directive is the way in which Member States will contribute to the overall EU goal. Where previously (for 2020 target) member states had an individual national binding target, the 2030 framework is solely based on an EU-level binding target of 32%. It requires Member States to set national contributions to meet the binding target as part of their integrated national energy and climate plans.

4.8.16. **Climate and Energy Policy Framework 2030**

The 2030 Climate and Energy Framework, introduced by the European Commission in 2014, outlines EU climate and energy policies for the period from 2020 to 2030. Its objectives include achieving a competitive, secure, and sustainable energy system while addressing climate change. Key targets include at least a 40% reduction in greenhouse gas emissions and a 32% share of renewable energy consumption within the EU by 2030. The framework aims to promote a low-carbon economy, ensure affordable energy for consumers, and enhance energy supply security.

4.8.17. **Effort Sharing Regulation (EU) 2018/842**

The Effort Sharing Regulation (EU) 2018/842 lays down obligations on Member States with respect to minimum requirements to fulfil the EU's target of reducing its greenhouse gas emissions 30% below 2005 levels in 2030 in the various sectors and contributes to achieving the objectives of the Paris Agreement. A GHG reduction target of at least 30% applies to Ireland.

4.8.18. **EU Commission European Green Deal 2019**

The European Green Deaf sets out increased levels of ambition for the EU as a whole and aims to deliver net-zero greenhouse gas emissions at EU level by 2050 and to increase the EU-wide greenhouse gas emissions reduction target from 40% to up to 55% by 2030. Delivering the Green Deal will require a transformation of the EU and national economies with sectors such as transport, the built environment, agriculture, industry, and energy all having to become more environmentally sustainable if the goal of decoupling economic growth from resource use is to be achieved. The EU Climate and Energy Package 2020 resulted in a set of binding legislation which aims to ensure the EU meets its ambitious climate and energy targets for 2020.

4.8.19. **Other EU Policy/Strategies**

S.I. No. 77/2019 - European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019

Directive 2008/50/EC of the European Parliament and of the Council on ambient air quality and cleaner air for Europe.

EU Adaptation Strategy 2021

5.0 Planning History

5.1. Subject Site and adjacent land

P.A. Ref. 19596 Permission granted on 20/04/2020 to retain a log cabin as constructed and install a new wastewater treatment system, percolation area, and associated site works on lands adjacent to the southern site cluster.

P.A. Ref. 1756 Permission granted on 29/08/2017 to John Stone to retain the quarry as excavated. Full planning permission to extend the same quarry and associated site work on lands adjacent to the site between the northern and southern clusters.

P.A. Ref. 03609 Permission granted on 18/08/2003 for a change of house design on previously granted file, Reg. Ref 01/733, on land adjacent to the site between the northern and southern clusters.

P.A. Ref. 071355 Permission granted on 02/10/2007 to erect two new concrete aprons to existing silage pits, a new extension to the existing concrete yard and a new extension to the existing livestock holding pen on land adjacent to the site between the northern and southern cluster.

P.A. Ref. 08353 Permission granted on 09/06/2008 to construct an extension to existing animal housing to incorporate a slatted house and slurry storage on land adjacent to the site between the northern and southern clusters.

P.A. Ref. 04767 Permission granted on 11/02/2005 to erect dormer dwelling, septic tank, percolation area, water well and entrance to the public road, on land adjoining the southern cluster.

5.2. Wind Farm and Other Development in the Surrounding Area

ABP Ref. 315365-22 (Gortahile Wind Farm) Permission granted on 21/11/2023 for a wind energy development consisting of 7 no. wind turbines and all associated works at Ridge, Knocknabranagh and Knockbaun, Baunreagh, and Agharue, Co. Carlow and Coolcullen, Cloneen and Coan East, Co. Kilkenny, located c. 10.5km from the site to the southeast.

P.A. Ref. 20247 - Permission granted to Michael Johnson on 19/11/2020 for the restoration of an existing quarry to agricultural grassland, involving the importation of inert soil and stones, located 4km from the site to the east.

P.A. Refs. Laois (20281)/Carlow (20282) - **Bilboa Wind Farm** - Permission granted on 15/02/2022 to Bilboa Wind Farm for the installation of underground cables and associated works, including a new substation, for the grid connection of the wind farm, located 17km from the site to the southeast.

ABP Ref. 309293-21/Reg. Ref. 19530 - Permission granted on appeal to Bord Na Móna Powergen Ltd. for a Renewable Gas Facility, with third-party appeal on

06/10/2022, located 14km from the site within the townland of Clonboyne and Clonkeen, Portlaoise, Co. Laois.

Reg. Ref. 21700 / ABP Ref. APB-314760-22 - Application by Lagan Materials Limited for quarry operation continuation is currently under appeal, located 3km from the site to the southwest.

ABP Ref. PL11.248518/Reg. Ref. 16/260 - Permission granted to Pinewood Wind Limited on 03/09/2021 for 11 wind turbines and associated infrastructure, located 4km from the site to the southwest.

P.A. Ref. 17/532 Permission granted on the 30/07/2018 for a solar farm and ancillary infrastructure.

ABP Ref. PL11.232626 / **Reg. Ref. 13268** - Permission granted on 14/6/2014 for the development of Cullenagh Wind Farm consisting of 18 wind turbines, located 3.5km from the site to the west.

Reg. Ref. 04935 - **Gortahile Windfarm** - Permission granted on 27/10/2004 for Gortahile Wind Farm's 9-turbine development, with a 40-year operational life, located 11km from the site to the southeast.

Reg. Refs. Tipperary 211620/20972 - **Farranrory Wind Farm** - Permission granted to Farranrory Wind Farm for 9 no. wind turbines and a cable route, with the latest grant date on 14/11/2022, located 17km from the site to the southwest.

ABP Ref. 247143 / P.A. Ref. 15/401 Permission refused on 23/03/2017 for the proposed development comprising 1 no. 500KW wind turbine, electrical switch room and control facility, access track, associated infrastructure and ancillary site works.

Kilkenny Ref. 08/1511, modified under **Reg. Ref. 12/172** - **Lisdowney Wind Farm** - Permission granted on 23/7/2012 for the redesign of Lisdowney Wind Farm (4 wind turbines), increasing turbine heights, located 11km from the site to the southwest.

6.0 Natural Heritage Designations

6.1. Natura 2000 European Sites

6.1.1. The site is not located within any Natura 2000 site. There are six SACs and two SPAs within 20 km of the proposed development and cable route options. These include the following:

- River Barrow and River Nore SAC (Code: 002162) - c. 3.2km to the south, 7.5km to the northeast and c. 4km to the southwest.
- Lisbigney Bog SAC (000869) - c. 13km to the southwest.
- Ballyprior Grassland SAC (002256) - c. 4km to the northeast.
- Slieve Bloom Mountains SAC (000412) - c. 22km northwest of the site.
- Mountmellick SAC (002141) - c. 20km northwest of the site.
- Cullahill Mountain SAC (000831) - c. 25km southwest of the site.
- Slieve Bloom Mountains SPA (004160)- c. 20km to the northwest.
- River Nore SPA (004233) - c. 12km to the southwest.

6.2. National Designations

6.2.1. There are two NHAs and 31 pNHAs within 20 km of the Proposed Development and Cable Route Options, as follows;

NHAs:

- Coan Bogs NHA (002382) - 10.7 km south of the site.
- Clonreher Bog NHA (002357) - 16.4 km northwest of the site.

pNHAs:

- Timahoe Esker pNHA (000421) - 2.7 km northwest of the site.
- Clopook Wood pNHA (000860) - 2.6 km northeast of the site.
- Stradbally Hill pNHA (001800) - 6.1 km northeast of the site.
- Ridge of Portlaoise pNHA (000876) - 9.8 km northwest of the site.
- Dunamase Woods pNHA (001494) - 9.6 km northwest of the site.
- Rock of Dunamase pNHA (000878) - 9.6 km northwest of the site.

- Kilteale Hill pNHA (000867) - 9.5 km northwest of the site.
- Ballylynan pNHA (000857) - 9.3 km east of the site.
- Grand Canal pNHA (002104) - 10.6 km northeast of the site.
- The Great Heath of Portlaoise pNHA (000881) - 12.6 km northwest of the site.
- Lisbigney Bog pNHA (000869) - 12.2 km southwest of the site.
- Barrow Valley at Tankardstown Bridge pNHA (000858) - 12.5 km east of the site.
- River Nore/Abbeyleix Woods Complex pNHA (002076) - 13.6 km west of the site.
- Shanahoe Marsh pNHA (001923) - 14.1 km west of the site.
- Derries Wood pNHA (000416) - 15.0 km northeast of the site.
- Cloghristick Wood pNHA (000806) - 18.3 km southeast of the site.
- Derryvullagh Island pNHA (001390) - 16.7 km northeast of the site.
- Dunmore Cave pNHA (000401) - 19.4 km southwest of the site.
- Emo Court pNHA (000865) - 17.7 km northeast of the site.
- Esker Pits pNHA (000832) - 18.2 km southwest of the site.
- Forest Wood House pNHA (000874) - 19.6 km northwest of the site.
- Mothel Church, Coolcullen pNHA (000408) - 14.9 km southeast of the site.
- Oakpark pNHA (000810) - 16.5 km southeast of the site.
- The Curragh and Goul River Marsh pNHA (000420) - 19.1 km southwest of the site.
- Ardaloo Fen pNHA (000821) - 22.5 km southwest of the site.
- Coolacurragh Wood pNHA (000862) - More than 20 km southwest of the site.
- Cuffsborough pNHA (000418) - 20.7 km southwest of the site.
- Cullahill Mountain pNHA (000831) - More than 20 km southwest of the site.
- Grantstown Wood and Lough pNHA (000417) - 22.4 km southwest of the site.
- Inchbeg pNHA (000836) - 20.4 km southwest of the site.

6.2.2. Neither of the two NHAs have any source-receptor link with the site. Of the 31 pNHAs, only Timahoe Esker pNHA, Clopook Wood pNHA and Grand Canal pNHA have source-receptor links with the site.

7.0 **Public Submissions**

7.1.1. A total of 108 public observations were submitted concerning the proposed development. These observations encompassed a broad spectrum of issues, many presenting varying degrees of overlap yet articulated with distinct perspectives. To provide clarity and coherence, I have endeavoured to summarise and categorise these concerns under the following headings below accordingly.

7.1.1.1. <u>Environmental Impact Assessment (EIA) Concerns</u>

- The discrepancies between the Environmental Impact Assessment Report's (EIAR) proposed layout and the actual planning application drawings, alongside the lack of a site visit by SLR Consulting, have resulted in requests for clarification.
- Observations indicate non-compliance with the EIA Directive, highlighting a significant gap in assessing grid connection impacts and raising concerns over project splitting.
- The connection to the national grid is omitted, which is a critical aspect of the project's feasibility, necessitating inclusion as per EIA Directive requirements.
- Cumulative environmental effects, including visual, heritage, and ecological impacts, require evaluation, especially with adjacent projects with granted planning permissions.
- The application lacks one year of measured wind speed data, as required by the Laois County Wind Energy Strategy.
- Assessment of potential microplastic pollution from turbine blades is absent.
- The projected lasting environmental and ecological impact from turbine foundations and hardstanding areas has not been appropriately addressed.
- Additional ecological inconsistencies are identified regarding the presence of protected species, with an evident need for more complete field studies.
- The project's alignment with the UN Sustainable Development Goals is questioned, with apprehensions about adverse effects on health, education, clean water, economic growth, cultural heritage, biodiversity, and human rights.

- Concerns regarding the proper identification of sensitive receptors, including schools, places of worship, and community centres, relate to both environmental and socioeconomic factors.

7.1.1.2. NIS / AA Screening Concerns

- The proposed cable routing, in proximity to the River Barrow and River Nore Special Areas of Conservation (SACs), is inadequately assessed for potential ecological damage to these sensitive areas.
- The project has not incorporated a site visit, which is necessary to identify and evaluate potential impacts on significant archaeological and heritage sites, a requirement that aligns with existing conservation guidelines.

7.1.1.3. Site Suitability Concerns

- The proposed development contravenes the Laois County Development Plan, with the construction of turbines in areas “not open for consideration” for wind farms.
- Contrary to the developer's Planning Statement, only one of the thirteen turbines is within an area designated by the Development Plan as suitable for wind energy development, highlighting significant zoning and land use concerns.
- The presentation of the two separate turbine clusters on Fossy Mountain and Wolfhill as a single site is misleading.
- The northern and southern clusters, being split and each falling below the 50MW threshold, should legally necessitate separate Strategic Infrastructure Development (SID) applications.
- The developer's documentation incorrectly portrays the number of turbines in the southern cluster within the areas indicated under the Development Plan that are open for consideration for wind energy development.
- Site A15 on the Stradbally River, part of the River Barrow and River Nore SAC, hosts species like Atlantic salmon, lamprey, and otters, emphasising the site's unsuitability due to sensitive environmental factors and the presence of internationally protected habitats.

- The lack of wind speed data from the proposed site fails to meet the requirements outlined in both the draft Wind Energy Guidelines of 2019 and the Laois County Development Plan 2021-2027, further supporting the unsuitability of the proposed wind farm locations.

7.1.1.4. Procedural Issues Concerns

- Discrepancies in the Environmental Impact Assessment Report (EIAR) and planning application drawings, as well as anomalies in setback distances provided, require clarification.
- Development decisions should not employ indicative wind speed data from the SEAI Wind Mapping System. Accurate, site-specific data is needed.
- Doubts have been cast on the feasibility of the proposed grid connection at Coolnabacca and the lack of a national grid connection, which is essential for the project's viability.
- The developer is potentially non-compliant with the setback distances outlined in the 2019 Wind Energy Guidelines (Draft).
- The developer's representation of two separate turbine clusters as a single site has been criticised as misleading, compounded by the outdated 500m setback distance from the 2005 Guidelines not reflecting the current scale of turbines.
- The proposal materially contravenes the Laois County Development Plan's provisions and the associated Wind Energy Strategy regarding land zoning and proximity to residential areas.
- SLR Consulting's failure to conduct a site visit raises concerns over potential oversight of the area's heritage and archaeological importance.

7.1.1.5. Visual Impact Concerns

- The proposed wind farm's location in the Slieve Margy region, known for its rural scenic landscape, is highly sensitive and could significantly detract from the visual aesthetics and heritage sites, contrary to the Laois County Development Plan's guidelines for wind energy development.

- Turbines sited c. 700 meters from residences, with heights of 180 meters, will be visually imposing and are inconsistent with the principles of proper planning and sustainable development due to inadequate setback distances.
- The development's impact on the Luggacurren landscape and its potential to disrupt panoramic rural vistas has raised considerable local opposition and concerns about decreased property values.
- The proposed turbine dimensions would create visual clutter that would dominate the landscape, and discrepancies in EIAR site layouts cast doubt on the accuracy of the visual impact assessments.
- Concerns extend to the potential negative effects on tourism, with the wind farm's visibility possibly deterring visitors, thereby affecting the local economy and recreational value of the area.

7.1.1.6. Health and Wellbeing Concerns

- The proximity of the wind turbines raises serious health concerns, including the risk of noise-induced sleep disturbances, headaches, anxiety, and the potential for long-term adverse health outcomes, which necessitates a thorough evaluation of cumulative health effects.
- Specific worries are noted for vulnerable groups such as children, with the development potentially impacting their health, safety, and psychological and social well-being, both from the operational aspects of the wind farm and the construction phase's heavy machinery and traffic.
- Calls for a rigorous assessment of noise mitigation measures are made to ensure the protection of residents' peace and quality of life, as the proximity to turbines is associated with a range of health issues.

7.1.1.7. Health and Safety Concerns

- The proximity of wind turbine development to local schools, such as Wolfhill NS, raises safety concerns, particularly for children with additional needs, due to the potential impact of turbine noise and activity.

- The recent settlement of a High Court case alleging health effects from wind turbines undermines the developer's claims of no adverse health impacts, intensifying concerns for the well-being of nearby residents.
- Specific concerns regarding the proximity of turbine blade T10 in the Wolfhill southern cluster, which is situated 88 meters from unoccupied farmstead dwellings, raise the risk of collapse and question the adequacy of setback distances.
- The current 500-meter setback distance is considered obsolete, especially given that the proposed turbines' heights are more than double those envisaged in the 2006 guidelines, suggesting the need for updated safety measures.

7.1.1.8. Noise Concerns

- The proposed setback distance for the turbines, particularly given the landscape's topography, may be insufficient to mitigate noise impacts on nearby homes and sensitive areas such as schools.
- Concerns about construction noise and potential blasting disrupting local communities are compounded by worries about the impact on daily routines, sleep patterns, and chronic stress, especially in the Wolfhill area, where turbines are situated c. 700 meters from residences.
- The noise impact assessment is criticised for lacking comprehensive coverage of noise-sensitive receptors and failing to represent the worst-case scenarios, potentially underestimating the effects of noise pollution on local residents' quality of life.
- Objections are raised over the potential constant noise pollution, including infrasound, from spinning turbine blades, which could adversely affect mental health and general wellbeing, with specific mention of effects on children and individuals with severe hearing loss who rely on hearing aid technology.
- The reliability of desktop studies for assessing noise impact without on-site noise assessments is questioned, and the absence of comprehensive assessment and mitigation strategies for both shadow flicker and noise pollution is noted as a significant oversight.

- Doubts about the developer's ability to mitigate noise impacts, with the developer's claims regarding wind farm noise and distancing called into question for lack of evidence and use of subjective language that might mislead the public.

7.1.1.9. Tourism & Recreation Concerns

- The proposed wind farm threatens the tranquillity and aesthetic value of local forestry areas, potentially disrupting recreational activities like walking, hiking, and mountain biking due to the installation of turbines and the creation of access roads.
- There is concern that the development may be at odds with the tourism development strategy for County Laois, which is part of Ireland's Ancient East, potentially impacting sustainable tourism, the burgeoning local film industry, and the area's natural allure.
- Local businesses such as wellness clinics reliant on the scenic landscape may face adverse effects, including reduced client attendance and disruptions to their business models, due to the wind farm's impact on the surrounding environment.

7.1.1.10. Community Consultation Concerns

- There have been gaps in meaningful interaction and openness between the developer and the planning authorities, with no public meetings to debate the proposed wind farm's impact on the surrounding environment and residents' lives.
- Concerns are raised about the applicant's failure to adhere to the Aarhus Convention's requirements for public participation, with the community organising their own meetings to address environmental and home protection concerns.
- The Applicant's engagement efforts are criticised as inadequate, relying on brochures rather than direct dialogue, and there are claims of stress, anger, and division caused within the community due to the proposed development.

7.1.1.11. Impact on Local Community

- Concerns are raised about the erosion of democratic principles, with objections emphasising the importance of community participation in decision-making processes and the protection of civil rights.

- The wind farm's potential impact on children's rights and broader human rights is underscored, highlighting the necessity for independent Human Rights Impact Assessment and Child Rights Impact Assessment.
- The term "residential receptors" used in the application is criticised for dehumanising residents, reflecting insensitivity to the community's identity and heritage.
- Strong local opposition exists, with residents worried about the loss of cherished landscapes and recreational amenities and the potential degradation of community appeal, which could influence future residency decisions.
- The project is seen as a source of community division and disruption, exacerbated by the developer's inadequate community engagement and a lack of thorough assessment of community gain versus loss.
- Concerns about the impact on school enrolment are voiced, as the proximity of the wind farm may discourage families from moving to the area, affecting local schools and the community's growth.

7.1.1.12. Residential Impact

- Concerns raised regarding negative impacts on residential amenities due to the size and proximity of turbines, especially in the southern parcel.
- Discrepancies noted in the residential impact assessment regarding the number of residential properties listed within 1km of the development. Some properties are not listed at all, casting doubt on the completeness and accuracy of the impact assessments conducted.

7.1.1.13. Property Devaluation Concerns

- Residents are concerned about the wind farm's detrimental impact on local property values, with fears that the development will diminish resale value and undermine financial investments in homes.
- Research indicates that wind farms can reduce property values, with potential losses of up to 12% within 2km of turbines.

- The application's mention of 'community gain' fails to address the significant 'community loss,' such as property devaluation and land sterilisation, raising questions about the overall benefit to the community.
- The anticipated devaluation of properties is attributed to the visual and noise pollution that would accompany the operation of the wind turbines.

7.1.1.14. Impact on Local Agriculture

- Concerns raised about the impact on dairy farming due to the proximity to turbines.
- Turbine blades are reported to be just 60m from working farmland boundaries, potentially affecting livestock and farm operations.

7.1.1.15. Shadow Flicker Concerns

- Residents are concerned about the close proximity of turbines, approximately 700 meters from homes, which could cause shadow flicker affecting five homes for more than 30 hours per year, casting doubt on the effectiveness of proposed mitigation measures.
- The Applicant has not provided adequate evidence to address the mitigation of noise and vibration and has acknowledged shadow flicker concerns without presenting satisfactory reduction strategies.
- The omission of detailed information regarding shadow flicker in the application has led to questions about the transparency and completeness of the proposal.

7.1.1.16. Wildlife and Biodiversity Concerns

- There are significant concerns about the impact of the proposed wind farm on local wildlife, particularly on the peregrine falcon population with established nesting sites near proposed turbine locations, necessitating compliance with the EU Habitats Directive.
- The development could adversely affect local biodiversity, including protected species such as red squirrels, Irish stoats, and bats, with the potential for irreversible harm to these populations and their habitats.

- Residents near the Lackagh wind farm and other local areas are worried about the impact on a diverse range of wildlife, including birds of prey and native Irish bats, with potential consequences for breeding success, mortality, and migratory patterns.
- Contradictions have been noted between wildlife observations and the developer's claims, particularly concerning the absence of nesting or roosting sites near the proposed turbines.
- Environmental concerns extend to the alteration of natural landscapes and disturbance of habitats, with potential noise disruption affecting the ecosystem balance and leading to biodiversity loss.
- The proximity of turbines to local water systems poses risks of environmental contamination, further threatening the biodiversity preservation efforts for endangered species like buzzards, ravens, and red squirrels.
- There is a call for urgent consideration and thorough studies to address these ecological concerns and ensure adherence to environmental conservation principles and EU directives, with particular attention to the protection of critically endangered and protected species.

7.1.1.17. Traffic and Road Safety Concerns

- Concerns were raised about the potential distraction to motorists from industrial-sized turbines, impacting road safety on the L3858 Wolfhill to The Swan public road.
- The safety of cyclists, walkers, and runners may be compromised, prompting the need for a road safety impact assessment.
- Concerns were expressed regarding the capacity of local roads to accommodate increased construction traffic, impacting the local road network.

7.1.1.18. Ground Stability and Construction Impact

- Concerns were raised about the placement of turbines on sloping hillsides, citing potential landslide risks and environmental impacts on the local water supply.

- Mention of contradictory information regarding the presence of peat on-site and the environmental impact assessment of tree felling.

7.1.1.19. Hydrology and Water Supply

- The proposed wind farm's location within a Water Source Protection Zone presents risks to the Swan public water scheme and local aquatic ecosystems, highlighting the need for strict adherence to habitat and water quality directives, such as Directive (EU) 2020/2184, which acknowledges water as a fundamental human right.
- Critical water sources, including Kyle and Orchard Springs and the Swan Public Water Supply Scheme, recognised by the Geological Survey of Ireland as highly vulnerable, are under potential threat from the development, with concerns about the impact on over 2000 homes and businesses and the local populations of freshwater pearl mussels in the River Nore.
- Turbine-related activities, including excavation for roadways and foundations, raise concerns about the possible contamination of these vital water sources, with particular attention to the Swan Water Supply Scheme's 'Extreme Risk' status and the absence of alternative water sources as indicated by Laois County Council.
- The proximity of proposed turbine locations and the substation to critical water supply areas, where contamination could have severe implications, has not been adequately addressed, demanding comprehensive risk assessments and protective measures to ensure no detrimental impact on public water supplies and local biodiversity.

7.1.1.20. Cultural and Archaeological Heritage Preservation Concerns

- The proposed wind farm site is in close proximity to numerous prehistoric cultural heritage assets, including the Druid's Altar, with potential indirect effects on their setting and significance, raising preservation concerns.
- Criticism is directed at the archaeological report provided by the developer for failing to adequately acknowledge significant cultural heritage sites, with calls for a full archaeological review and survey beyond desktop studies.

- The proximity of the development to cultural heritage sites such as the Monamanry Megalithic structure and St Mary's Church Wolfhill could lead to disturbances, with the importance of these sites being underscored due to their astrological, spiritual, religious, and ceremonial significance.
- There are concerns about the potential impact on local worship sites and the intangible cultural heritage of the area, with a notable lack of consideration for historical and cultural significance in the application report.
- Call for adherence to legal obligations under the European Convention on the Protection of the Archaeological Heritage, emphasising the need for the preservation of archaeological reserves and the overall historical value of the location.

7.1.1.21. Grid Connection and Project Viability Concerns

- There is uncertainty regarding the proposed wind farm's grid connection, which is crucial for functionality and must be confirmed and assessed as per the EIA Directive.
- Concerns about the feasibility of integrating the wind farm into the national grid.
- Criticism of the proposal as premature, noting the absence of a finalised cable route for grid connection and unresolved potential capacity issues of substations, which have not been documented or addressed.
- Doubts are expressed about the misinformation in the application regarding substation construction and the absence of confirmation on a site suitability assessment for the on-site 110 kV substation.
- The necessity of a grid connection application and a comprehensive assessment of the wind farm proposal in conjunction with the grid connection is emphasised in accordance with EIA Directive requirements.

7.1.1.22. Cumulative Impact Assessment

- Concerns are raised regarding the cumulative impact of the proposed Coolglass wind farm when combined with other approved developments within a 10km radius,

necessitating a comprehensive assessment of visual, ecological, and cultural heritage implications.

- The necessity to evaluate the combined effects on local wildlife, particularly bat populations, in relation to nearby projects like EirGrid's Laois Kilkenny Reinforcement Project and other wind and solar farms is emphasised in accordance with the EU Habitats Directive.
- Nearby projects include 18 no. wind turbines permitted under ABP Ref. 11.242626, 11 no. wind turbines permitted under ABP Ref. PL11.248518 and a solar farm permitted under P.A. Ref. 17/532 and Eirgrid's Laois Kilkenny Reinforcement Project (Coolnabacky 400kv Substation).
- Submission stresses the importance of assessing the cumulative impact on the rural scenic landscape and heritage sites, drawing attention to potential negative impacts on nationally significant archaeological sites and sacred spaces.
- There is a call to address the broader implications of multiple wind farms proposed in the area on community wellbeing, environment, and heritage, with a need for a detailed cumulative impact assessment that incorporates regional integrity considerations.
- Instances from other regions in Ireland are referenced to illustrate shared challenges faced by communities, highlighting the importance of a thorough cumulative assessment that adheres to EU directives and national planning guidelines.
- Referenced documented instances from other regions in Ireland include noise disturbances in the Boggeragh Mountains, visual disruption in Cahermurphy, County Clare, and ecological concerns in Lackagh, County Galway.

8.0 Local Authority Submissions

8.1. Laois County Council

8.1.1. Chief Executive's Report:

Principle of the Proposed Development

- Discrepancies are noted between the Planning Statement and the planning application drawings concerning turbine placement.
- The Planning Statement details that four southern turbines fall within the "Areas Open for Consideration," where wind energy applications are subject to evaluation (Laois County Development Plan, WES 6), and nine turbines are located in "Areas Not Open for Consideration," which are deemed unsuitable for wind farm development due to environmental sensitivity and limited wind resources (WES 7).
- The Planning Authority considers the current site layout places 12 out of 13 turbines within the "Areas Not Open for Consideration", with only one turbine (T11) in an area designated for consideration.
- This placement is contrary to provisions of the Laois County Development Plan 2021-2027 and the associated Wind Energy Strategy (Appendix V).

Landscape and Visual Impact

- The Planning Authority questions the validity of the landscape and visual assessment due to potential inaccuracies in the site layout depicted in Figures 7-1 and 7-2 of the EIAR.
- A confirmation or necessary revision of the assessment by the developer is requested to ensure its accuracy for the proposed development.

Residential Receptors and Shadow Flicker Assessment

- The Planning Authority has identified a discrepancy between the EIAR and Planning Statement regarding the number of residential properties within 1km of the Proposed Development and seeks clarification.
- Due to the absence of individual numbering of residential receptors in EIAR's Figure 5.1, the Planning Authority requests a revised mapping that clearly identifies each property and its proximity to the Proposed Development.
- Consistency in referencing the 85 residential properties across all documents is required, especially concerning the extent of shadow flicker from the Proposed Development.

Site Size

- The Planning Authority notes the variation in the reported size of the proposed site across different application documents and requests a definitive confirmation of the site's size.

Tree Felling, Land, Soils, and Flood Risk

- Tree felling, involving c. 54.36 hectares of forestry, is proposed to facilitate the development, and the Planning Authority expects a felling licence application to be confirmed as per the Forest Service's policy.
- The Planning Authority calls for a comprehensive assessment of the impact of tree felling on flood risk, soils, and land within Flood Zone C, as it is not clearly addressed in the EIAR.

Turbine Design

- The proposed wind turbines have a maximum tip height of 180m, hub height of 102.5m, and rotor diameter of 162m, resulting in a ratio exceeding the 1:1 standard and potentially dominating views.
- The Planning Authority is concerned about the visual impact due to the disproportionate ratio of rotor diameter to hub height and the inconsistency with nearby wind farm developments.

Community Gain

- The Planning Authority highlights the absence of a specific Community Report, which is necessary to assess the community benefits, as advised in the Draft Revised Wind Energy Development Guidelines from December 2019.
- A detailed Community Report is required from the developer to secure the community investment benefits stated in the planning application.

Drawing Referencing

- Inconsistencies in the numbering of the Site Layout Location Plans are noted, with a discrepancy between the Site Location Key Plan and the subsequent drawings.
- The Planning Authority recommends thorough cross-referencing of the drawings with the EIAR, NIS, and Planning Report to ensure alignment of all submitted information.

Conclusion

- While recognising the strategic importance of the proposed development for economic, social, and climate objectives in County Laois and beyond, the Planning Authority finds the proposal contrary to provisions of the Laois County Development Plan 2021-2027 and its Wind Energy Strategy.
- The proposed development is considered to materially contravene the Laois County Development Plan and is thus contrary to proper planning and sustainable development in the area.
- Conditions are recommended in the event of a grant of permission.

8.1.2. **Interdepartmental Reports:**

8.1.2.1. Senior Executive Engineer - Municipal Area

- The Applicant is responsible for repairing any damage to the public road network caused by the development, which necessitates conducting pre-development and post-development condition surveys in collaboration with Laois County Council's Area Office.
- A road opening license must be obtained by the Applicant for any excavations on public roads or verges.
- The development must prevent surface water discharge onto the public road and ensure proper drainage from the roadway into existing verges or open drains.
- Adequate sightlines must be provided at all proposed access points to the public road network as per the requirements of Laois County Council.
- The Applicant is required to coordinate with Laois County Council's Area Office concerning any road network modifications needed for the turbine delivery route.

8.1.2.2. Executive Engineer - Environmental Report

- The Environment Department of Laois County Council has reviewed the EIAR and NIS for the proposed project and found them satisfactory.

- With the implementation of mitigation measures outlined in the EIAR and NIS, the Department concludes that there will be no significant adverse effects on the conservation interests or objectives of any Natura 2000 site from the project.
- The project is determined not to adversely affect the integrity of any Natura 2000 site, directly or indirectly, according to the best available scientific knowledge.
- Conditions are recommended in the event of a grant of permission.

8.1.2.3. Roads Department

- Laois County Council requires the Applicant to conduct pre and post-development condition surveys of all regional and local roads used for the proposed development in County Laois, with specifics to be agreed upon before work begins.
- The Applicant must repair any damage to the public road network caused by the proposed development.
- Site access improvements must be made before construction commences to ensure safe entry and exit for construction traffic with minimal impact on current road users, adhering to sightline requirements set by the Council.
- The Planning Report incorrectly refers to the R526, a road that does not exist within County Laois.
- All public lighting and signage affected by the delivery route for components must be relocated with the Council's agreement, using retention sockets where feasible.
- The Applicant is to agree on the details of any temporary and permanent road or junction widening works with the relevant Municipal District Engineer and Laois County Council's Area Office, especially regarding modifications for abnormal load delivery routes, which may involve permeable paving or stabilised grass areas.
- Bend improvement and access works must be screened and delineated, to prevent 'see-through', addressing potential road safety issues.
- Distinct plans for general construction access, abnormal load access, and future operation access routes are required for road safety.
- Any openings made in the public roadway and verges for the development must be licensed by Laois County Council.

8.1.3. **Elected Members Meeting:**

8.1.4. At the September meeting of Laois County Council held on the 25th of September 2023, the members reviewed the Chief Executive's report on the Strategic Infrastructural Development for the Coolglass Windfarm Limited planning application to An Bord Pleanála. The report, unanimously agreed upon by the elected members, was discussed with further comments added as follows:

- Cllr. Fleming expressed that the Chief Executive's report comprehensively addressed all pertinent issues, especially the material contravention of the Laois County Development Plan 2021-2027 and the Wind Energy Strategy. Additional concerns included the lack of local consultation by the developer, proximity of turbines to water wells (75m from closest), shadow flicker implications, and inconsistencies in the application documentation.
- Cllr. Moran highlighted the excessive height of the proposed turbines, likening them to three round towers or the span of three jumbo jets. Cllr. Moran stressed the need for a 1.5km distance from dwellings to prevent shadow flicker, the absence of community engagement, the inappropriate siting within the 'red zone' of the Wind Strategy where wind turbines are not allowed, unmarked heritage structures on maps, the ecological impact on birds and animals, significant soil removal during construction affecting traffic, numerous contradictions in the application, noise implications on sleep patterns, elimination of 130 acres of woodland and the excessive land sterilisation by the turbines.
- Cllr. Mullins criticised the application as incompetent and questioned whether the area's division into two clusters warranted separate applications. Cllr. Mullins pointed out inaccuracies in the planning statement regarding turbine locations (stated that there are four turbines in the area 'open' for consideration and nine turbines in the 'not open' for consideration area), an unreflective landscape assessment, and sought clarification on the role of An Bord Pleanála in potentially opposing the Council and Chief Executive's recommendations.
- Cllr. Ahearn requested confirmation that all cables associated with the development would be laid underground.
- Cllr. Looney voiced support for wind turbines but argued that the proposed location is unsuitable and suggested the imposition of a levy.

9.0 Prescribed Bodies

9.1. Dept. of Housing, Local Government and Heritage - Development Applications Unit

- The Development Applications Unit has identified deficiencies in the Environmental Impact Assessment Report (EIAR) for the proposed wind farm development.
- The EIAR has been deemed inadequate, particularly concerning the assessment of potential impacts on archaeology and cultural heritage.
- The EIAR methodology is criticised for relying too heavily on desk-based research without sufficient fieldwork, such as site walkovers or inspections of the proposed development site.
- Areas where wind turbine infrastructure is proposed, were not under forestry, suggesting that partial fieldwork could have been possible.
- The DAU suggests that a LIDAR survey at 0.5-1m resolution could have compensated for the lack of a walkover survey by identifying potential archaeological features.
- The submission notes a lack of comprehensive documentation, such as a gazetteer of heritage assets, relevant historical mapping, and photographs to support the assessment of heritage assets.
- The EIAR's Visual Impact Assessment is limited, with only one viewpoint and photomontage provided, failing to fully assess the visual impact on National Monuments such as Timahoe Church and Round Tower, and Fossy Church.
- The DAU points out that the EIAR underestimates the significance of the wider landscape setting of these monuments and their vulnerability to visual impacts from the proposed development.
- The proposed wind farm development is contrary to the objectives of the Laois County Development Plan 2021-2027, which seeks to protect archaeological and cultural heritage.

- The site is located in an area designated as "Not Open for Consideration" for wind energy development due to various sensitivities, including cultural and built heritage.
- The DAU recommends that planning permission should not be granted until the EIAR deficiencies are addressed and a revised document is submitted for review.

9.2. Department of Defence

- The Minister for Defence oversees military aviation regulation, while the Irish Aviation Authority (IAA) is responsible for civil aviation safety.
- The Department of Defence emphasises the need for safeguarding military flight operations and installations for operational and security reasons.
- Consultations with Air Corps colleagues at Casement Aerodrome have led to specific lighting requirements for all turbines.
- The turbines should be illuminated with Type C, Medium Intensity, Fixed Red obstacle lighting, ensuring visibility in all directions and operational 24/7.
- The minimum output for the lights should be 2,000 candela, to ensure visibility for aircraft.
- Lighting should be suitable for Night Vision equipment and must emit light in the near Infrared (IR) range, specifically at or near 850 nanometres (nm) of wavelength.
- The Department of Defence's requirements for lighting are separate and distinct from those of the Irish Aviation Authority.

9.3. Transport Infrastructure Ireland (TII)

- The EIAR covers the development, potential cable routes, and a recreational amenity trail, with the latter two subject to a separate planning application.
- The proposed windfarm is south of the M7, with the TDR likely using the M7, turning onto local roads at the R445.

- Works required at M7 Junction 16 and the roundabout junction of the N80 with the R425 include earthworks, utility diversions, and temporary removal of street furniture and signage.
- Project Ireland 2040 and the National Development Plan prioritise maintaining Ireland's national roads to a robust and safe standard, which includes the M7 and N80.
- The M7 and N80 are integral to Ireland's national road network and part of the TEN-T Comprehensive Network, essential for regional and international access.
- Official national roads policy discourages new access points or increased traffic from existing accesses to national roads with speed limits over 50 kph.
- All turbine site access is via local roads, but turbine delivery indicates national road network use.
- TII sets standards for road assessments and construction necessitated by new developments.
- The wind farm proposal necessitates resolving operational issues related to national road network maintenance and safety.
- The EIAR's Traffic chapter includes a Turbine Delivery Route Report, Traffic Survey Data, and a Construction Traffic Management Plan.
- EIAR records a "no response" from TII to the EIA Scoping documentation, which is incorrect as TII responded in June and October 2022.
- There is a detailed record of correspondence between TII and the EIAR consultants, showing TII's engagement and responses to the scoping request.
- TII is concerned that their scoping response was not considered in the EIAR preparation.
- The Turbine Delivery Route (TDR) requires accommodation works at identified 'nodes' involving parts of the national road network.
- Nodes 1 and 2 involve significant works within the M7 motorway area, including earthworks and utility diversions, as detailed in the EIAR.
- The R425/N80 roundabout, part of the proposed TDR, will need clearance and utility diversions.

- The EIAR's Turbine Delivery Route Report specifies land requirement at Nodes 1, 2, and 4, indicating potential changes to existing roundabouts and structures.
- Consultations for the Turbine Delivery Route Report have not occurred, raising concerns about EIA Scoping engagement with TII.
- Modifications along the TDR are necessary, including construction and removal activities, yet they lack specific identification in the EIAR.
- The EIAR's Traffic chapter and the Construction Traffic Management Plan (CTMP) do not fully address the impact of abnormal load movement.
- The EIAR fails to acknowledge TII's role in mitigating impact and does not seem to consider TII's national road authority status.
- The handling of abnormal loads, whether by weight or size, is not confirmed in relation to compliance with SI 5 of 2003 regarding permits from Local Authorities.
- The construction haul route does not identify the use of the national road network, assuming construction traffic will originate primarily from Portlaoise.
- The Construction Traffic Management Plan (CTMP) lacks detail on mitigation measures for national road network management requirements.
- No compliance with TII Publications for larger loads is mentioned in the CTMP as part of the Turbine Delivery Route (TDR) mitigation.
- The submitted CTMP omits requirements for temporary works, signage, and reinstatement for the proposed TDR, impacting road network safety and efficiency.
- The Environmental Impact Assessment Report (EIAR) fails to account for effects on the national road network's operation due to the proposed TDR.
- Critical concerns include the physical works required by the TDR, which may affect road network structures and require coordination for component delivery.
- There is an absence of adherence to TII Publications and procedures for mitigating impacts on the national road network.
- The documentation does not adequately address arrangements for earth moving, landscaping, and access to Junction 16 of the M7 within the Motorway Maintenance and Renewal Contracts (MMaRC) area.

- TII recommends addressing these issues before planning decision to ensure no detrimental impact on the road network's capacity and safety.
- All proposed works must comply with TII Publications and be subject to Road Safety Audit, with necessary approvals in place.
- Any damage to the road surface due to abnormal loads must be rectified according to TII Pavement Standards.
- Additional approvals and permits may be needed for any temporary modifications to the road network.
- The CTMP and EIAR documents do not provide sufficient detail to assess the impact on the national road network within the TII maintenance area.
- The Applicant must submit revised documentation that adheres to TII Publications and details the interaction with the MMaRC Maintenance Area C.
- An updated CTMP and, if necessary, CEMP must demonstrate compliance with TII Publications for proposed works near the M7, including pre- and post-construction surveys and traffic management plans.
- The updated plans must detail compliance with national road network requirements, including an abnormal load assessment and consultation with TII's Bridge Management Section.
- Consultations with PPP Companies, MMaRC Contractors, and road authorities are needed to ensure the strategic function of the national road network is maintained.
- Copies of any agreements impacting national roads between the road authority, PPP Concessions, MMaRC Companies, and the Applicant should be provided.
- Consultation with TII is necessary for any temporary works within national road network maintenance boundaries, with a Deed of Indemnity required by TII before commencement.

9.4. **Department of Transport**

- Concern is expressed that the placement of cables within the public road network could significantly restrict the Road Authority's ability to maintain and construct roads and increase maintenance costs.

- Installation of cables may impact the stability of roads, especially "legacy roads" with poor subgrade conditions, requiring design consideration for variable ground conditions.
- The effect on remaining road space is a concern, noting future needs to accommodate other utilities within the road cross-section.
- There is a need for the ability to switch off power in the cables when the Road Authority requires it for road maintenance or construction.
- The Department urges the examination of alternative options for routing cables along public roads and for connecting to the national grid network.
- Details are requested on the placement of cables within the road cross-section to minimise impact on road construction and maintenance.
- The Department recommends avoiding cable jointing bays beneath the road pavement to maintain road integrity and safety, and to preserve road width for other utilities.
- It is advised to prevent the attachment of cables to bridge structures and culverts, suggesting diversion beneath these structures.
- A rationalisation of cable numbers, including existing and potential future cables, is recommended, suggesting consolidation into a single trench to minimise impacts on the road network and the environment.

9.5. Health and Safety Authority

- The proposal is outside the scope of the Chemical Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015 (S.I. 209 of 2015). As such, the HSA has no observations to make on the proposal.

10.0 Applicant's Response to Submissions

10.1.1. The Applicant's response to the submissions by agent SLR is summarised under the headings below:

10.1.1.1. Inadequate Grid Connection and Environmental Assessment

- Both international and national planning policies emphasise the necessity of increasing renewable energy production to meet legally binding targets and advance towards net zero.
- The capacity of the grid network is not assessed within this planning application because current protocols do not permit seeking grid connections before or during the planning application process.
- The capacity of the grid is deemed not a valid material consideration for this application, as it will be addressed in a separate application and Environmental Impact Assessment Report (EIAR).
- Environmental effects of potential grid connection routes are included in the submitted EIAR to prevent "project splitting," following the precedent set by O'Grianna & Ors v. Bord Pleanála [2014] IEHC 632.
- A national issue recognised is the lack of available grid capacity, which could significantly hinder the implementation of new and repowering projects.
- Planning approval does not depend on local network capacity, acknowledging future potential improvements in grid capacity.
- The lack of generation capacity, especially with the upcoming closure of Moneypoint, underscores the urgent need for renewable energy sources.
- Wind Energy Ireland (WEI) calls for EirGrid to have the necessary mandate and resources to expand the transmission system and continue the DS3 Programme.
- Two cable route options for connecting to the National Grid are assessed in the EIAR, with a preference to be determined through a separate planning process.
- Local community concerns have been noted, particularly regarding the proximity of groundwater levels to the surface around the Coolnabacky substation for one of the proposed cable routes.
- The final cable route will be selected based on environmental technical assessments and capacity availability on the National Grid, taking into consideration feedback from Laois County Council and EirGrid.

10.1.1.2. Misleading Representation of Project Site

- The site is divided into two clusters, which some believe should have been separate planning applications.
- The development spans Fossy Mountain and Wolfhill, with detailed layouts for northern and southern clusters.
- The applicant asserts no intent to mislead the public about the development's scale.
- The application follows the precedent set in ABP-308885-20, addressing similar concerns about a two-cluster wind farm.
- The proposal complies with the EIA Directive (2011/92/EU) and the Planning and Development Act 2000.
- The concept of project splitting is addressed, referencing case law such as O'Grianna & Ors v. Bord Pleanála [2014] IEHC 632 and Coyne v ABP, Ireland & EngineNode [2023] IEHC 412.
- A holistic EIAR and single planning application are justified based on the need to assess cumulative effects and adhere to the EIA Directive's principles.
- Transparency and public consultation are highlighted as crucial to the process, with the combined application intended to provide full representation and evaluation of the proposal's impacts.

10.1.1.3. Cumulative Environmental and Community Impact

- Cumulative and community impacts of the Proposed Development are assessed throughout the EIAR, with a specific focus in Chapter 18.
- Cumulative effects from various developments and combined effects from the proposed development are evaluated for significant overall environmental impacts.
- The EIAR follows the "Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment" (2018) and the EPA's "Guidelines on the information to be contained in Environmental Impact Assessment Reports" (2022).

- Chapter 18 assesses potential significant environmental effects including Air Quality & Climate, Noise & Vibration, Biodiversity, and other factors, excluding impacts from operational developments.
- The EIAR considers interactions between different potential impacts, such as Hydrology & Water Quality and its effects on Biodiversity.
- The wider community impacts during construction, operation, and decommissioning of the Proposed Development are fully assessed in Chapter 5 of the EIAR.
- The EIAR's design and siting of turbines and infrastructure aim to minimise environmental impacts, with a holistic evaluation provided in Chapter 18.
- The EIAR's Chapter 5 also addresses effects on population, socio-economics, land use, and recreation, following specific sections of the regulatory guidelines.

10.1.1.4. Adverse Visual Impact and Threat to Heritage

- The Department of Housing, Local Government and Heritage has expressed concerns about potential deficiencies in the Cultural Heritage assessment methodology in the EIAR.
- The Department has noted a perceived limitation in the Visual Impact Assessment.
- The Cultural Heritage assessment's methodology is questioned due to potential overreliance on desk-based research and the absence of a comprehensive site walkover.
- A site survey conducted on 6th April 2022 focused on non-forested areas, with restrictions due to health and safety reasons related to the forestry's condition.
- No archaeological remains were found during the site survey and impacts on cultural assets like Timahoe Church and Round Tower were assessed.
- The Department requests additional information and photomontages to enhance the broader landscape assessment.
- The applicant has committed to providing further details and visuals if required.
- Chapter 11 of the EIAR aligns with the Laois County Development Plan 2021-2027, promoting the preservation and sustainable development of cultural heritage.

- A comprehensive assessment of the potential impact on cultural heritage assets assumes a worst-case scenario, integrating various data sources.
- Direct impacts during construction, particularly on an enclosure (LA024-038) and the town of Timahoe, are identified with proposed mitigation measures.
- Indirect impacts on National Monuments and cultural heritage assets are considered not significant for EIA purposes.
- Proposed mitigation schemes for different phases of the project will be agreed upon with the planning authority.
- The Department calls for additional information to address their concerns comprehensively, not advocating for project refusal. The Applicant requests for the opportunity to address this by further information response.

10.1.1.5. Noise Pollution and Residential Impact

- Observations express concern about noise disturbance and skepticism about the effectiveness of mitigation measures due to the turbines' closeness to residences.
- A comprehensive noise impact assessment was conducted following best practice and national guidelines, with details in Appendix 10.5 and Chapter 10 of the EIAR.
- Noise levels were assessed at Noise Sensitive Receptors (NSRs) surrounding the proposed development, based on 35 days of background noise data.
- Predicted noise levels from turbines at NSRs, according to the UK Institute of Acoustics' guidance, indicate that operational noise will be below the set limits.
- No mitigation measures are required as operational noise for all NSRs and wind speeds will be below the appropriate noise limit, as detailed in Section 10.5.5.2 of EIAR Chapter 10.
- Post-commissioning noise surveys will be conducted to ensure compliance with noise limits, as confirmed in Section 10.5.5.3 of EIAR Chapter 10.
- The applicant is willing to provide a full response via a Further Information request if An Bord Pleanála deems it necessary.

10.1.1.6. Deficient Community Engagement

- A Community Liaison Strategy (CLS) was implemented, adhering to the 'Code of Practice for Wind Energy Development in Ireland for Community Engagement'.
- A Community Liaison Officer (CLO) was appointed as a point of contact for the community.
- The CLS aims for open, honest, and transparent engagement, with ongoing communication from development through to operations.
- Active engagement was prioritised with households within a 1.6km radius of the design layout, resulting in 343 face-to-face meetings.
- A project website and virtual consultation room were established to provide information and gather feedback.
- 70% of houses within 1km of the proposed development engaged with the project team.
- Comprehensive information distribution included project booklets, website access, and newsletters on planning status.
- Feedback from residents indicated awareness of climate action needs and energy security concerns.
- Despite apprehensions about visual, hydrological changes, and the low-carbon transition, the Community Benefit Fund was seen as beneficial.
- Suggestions for the Community Benefit Fund included supporting local projects and funding electric vehicle chargers.
- The engagement process was transparent, and feedback was incorporated into the design where possible.
- The final newsletter was issued prior to the planning submission, and feedback was solicited via the project website and virtual consultation room.
- The CLO played a key role in establishing a positive relationship with the community and in gathering feedback.
- The applicant believes the community engagement strategy was robust and comprehensive.

- Further details on community engagement are available in Chapter 2 of the EIAR, with the applicant open to addressing any further information requests by An Bord Pleanála.

10.1.1.7. Material Contravention of the Development Plan

- An Bord Pleanála confirmed the project as a Strategic Infrastructure Development under Sections 37A(2)(a), (b), and (c) of the Planning & Development Act, 2000 (as amended).
- The wind farm is recognised as 'Energy Infrastructure' in the Seventh Schedule of the Act, implying strategic importance, contribution to the National Planning Framework, and significant regional effects.
- ABP has discretion under Section 37(2)(b) to deviate from the local development plan based on the case's specifics.
- The wind farm aligns with the REPowerEU Plan and is considered of "overriding public interest."
- The EU's revised Renewable Energy Directive (RED III) sets a target for a 42.5% renewable energy share in the EU's energy mix by 2030, with the potential to reach 45%.
- The Climate Action Plan 2023, underpinned by the Climate Action and Low Carbon Development (Amendment) Act 2021, sets ambitious national targets for renewable energy and CO2 reduction.
- The project could power between 59,000 to 64,000 households annually and displace significant CO2 over its lifetime.
- The wind farm's contribution to renewable energy generation is in line with European and National policies, including the Climate Action Plan 2023, REDIII, and REPowerEU.
- The project supports the National Planning Framework's objectives, particularly regarding sustainable energy transition and carbon footprint reduction.

10.1.1.8. Laois County Council’s Submission

- Laois County Council supports the strategic importance of the wind farm for economic and social development and climate action in County Laois and Ireland.
- The proposed wind farm is seen as a material contravention of the Laois County Development Plan 2021-2027 and its Wind Energy Strategy.
- The Council's report highlights that some proposed turbines fall within an area designated as "not open for consideration."
- The County Development Plan includes policies supporting renewable energy, with specific criteria for wind energy developments including visual impact, residential amenity, and environmental considerations.
- There is a discrepancy between the Laois County Development Plan and the Landscape Character Assessment; the latter suggests the site has medium sensitivity, which may accommodate wind energy development.
- The Laois Wind Energy Strategy's zonation seems in conflict with landscape sensitivity ratings, indicating a possible zoning error.
- The Applicant contends that the site, located in 'Mountains, Hills and Upland Areas', is of medium sensitivity and suitable for wind energy development.
- Scenic value concerns highlighted by the Council are not applicable to the proposed site according to the Applicant, as it does not have designated scenic or tourism value.
- The Applicant counters the "not open for consideration" designation, claiming a lack of evidence for this zoning in the Wind Energy Strategy and Landscape Character Assessment.
- An updated map has been provided by the Applicant to address inaccuracies noted by Laois County Council (Appendix 2).
- The Applicant requests An Bord Pleanála to exercise its discretion considering the evidence for strategic and sustainable development compatibility.
- The proposed development does not impact European or Nationally designated ecological sites.
- The surrounding area of the proposed development is not recognised for tourism within the Laois County Development Plan (CDP).

- The site is in the 'Mountains, Hills and Upland Areas' Landscape Character Type (LCT) but is more aligned with the 'Medium Sensitivity' description suitable for development, rather than the 'High Sensitivity' areas like the Slieve Bloom Mountains.
- Laois County Council's CE report supports the wind farm's strategic importance but notes a contradiction with the Laois CDP.
- An Bord Pleanála's previous decisions emphasise the urgency of renewable energy projects, implying that local planning policies should not delay such developments.
- Inconsistencies exist in the Laois CDP regarding the suitability of wind energy development, with flawed methodology and a lack of clarity in designations.
- The Laois Wind Energy Strategy lacks clarity in stating "the Seven Hills of Laois" enjoy extensive designations without specifying these designations.
- There's a discrepancy in the County Development Plan's zonation for wind farm development, with a small percentage of the county zoned as 'preferred' or 'open to consideration' and a significant portion not zoned at all.
- The Applicant suggests that the current zoning does not align with Laois County Council's stated commitment to renewable energy, as reflected in the CDP's landscape designations and mapping conflicts.

10.1.1.9. Ministerial Directions on Wind Energy

- A Ministerial Direction was issued to Laois County Council requiring deletion of a 1.5 km setback distance for wind farms from the Laois County Development Plan.
- The Planning Regulator recommended identifying Laois County's contribution to renewable energy and climate change mitigation targets, which should be included in the CDP.
- The final Ministerial Direction ordered the deletion of the 1.5 km setback but did not amend Objective CM RE 1 regarding renewable energy targets, seen as a missed opportunity by the Applicant.

- The Applicant contends there are conflicting policies within the Development Plan related to wind energy development, and the designated wind zone areas have not been robustly assessed.
- Amendments to the Laois County Council Wind Energy Strategy (WES) could reconcile conflicts with the Landscape Character Assessment and improve wind farm siting.
- An Bord Pleanála is not strictly bound by CDP policies and may exercise discretion under Section 37(2)(b) of the Planning & Development Act, considering the strategic importance, conflicting objectives in the County Development Plan, and alignment with regional and national policy guidelines.

10.1.1.10. Planning Precedent

- An Bord Pleanála has consistently recognised the necessity to advance onshore wind energy development to meet Ireland's climate targets as mandated by the Climate Action and Low Carbon Development (Amendment) Act 2021.
- Individual planning applications are evaluated on their own merits within the broader context of the planning balance.
- In the case of Moanvane Wind Farm (ABP Ref 301619-18), the importance of aligning with national policy was emphasized over local impact considerations.
- The Bracklyn Wind Farm case (ABP Ref -311565-21) was granted permission despite local refusal, reinforcing the precedence of national policy on renewable energy.
- ABP's inspector noted the urgency of addressing climate change and energy security, suggesting that European and national policy should take precedence over local policy discrepancies.
- For Coom Green Energy Park (ABP Ref 308885), the inspector supported the project's contribution to European and National renewable energy targets and the necessity of infrastructure for achieving climate action objectives.
- The resistance to wind farm locations due to visual impact is deemed insufficient against the backdrop of climate emergency needs.

10.1.1.11. Submission from Transport Infrastructure Ireland (TII)

- An error in the EIAR, specifically Table 12-4 in Chapter 12 and Appendix 2.1, incorrectly indicated no response from TII to EIA scoping, which has been acknowledged by the applicant.
- The scoping report from TII dated 21 June 2022 was considered in the design and assessment of the proposed development, with follow-up consultation taking this into account.
- TII's list of considerations from their scoping response has been addressed in the EIAR, with the relevant sections indicating that consultations have occurred, the potential impacts on the national road network have been assessed, and the visual impacts have been considered.
- Consultations with the Local Authority and the National Roads Design Office have been carried out, and the details are provided in Appendix 3.
- The Turbine Delivery Route (TDR) is the aspect of the proposed development that could impact the National Road Network, but access will be primarily through the local road network.
- Local quarries will supply the majority of aggregate material required for the site, limiting the impact on national roads.
- A detailed access route review and swept path assessment ensure the safe passage of components to the site.
- Visual impacts from existing national roads have been fully assessed in Chapter 7 of the EIAR, taking into account different types of landscape receptors.
- Cumulative impact assessments have focused on developments other than road schemes and have not indicated significant impacts on national routes.
- SLR has utilised various guidelines, including those from the EPA and TII, to inform their assessments within the EIAR.
- A Traffic and Transport Assessment within the EIAR presents a robust evaluation of traffic impacts, with considerations for both national and local roads.
- A Road Safety Audit has not been completed but can be conducted if required as part of further information or as a planning condition.

- The Turbine Delivery Route (TDR) includes considerations for works required along the national road network and identifies methods and techniques for works in proximity to it.
- SLR commits to carrying out further consultations and fulfilling operational requirements with various authorities, including TII, PPP companies, MMaRC Contractors, and road authorities, as needed post-consent.
- SLR acknowledges the requirement for additional permits for abnormal loads during construction as detailed in the TDR report and confirms consideration of structural assessments.
- The management structure of the national road network is recognised, with relevant authorities referenced within Chapter 12 of the EIAR.
- A commitment to future consultations with PPP Companies, Motorway Maintenance and Renewal Contractors (MMaRC), and road authorities is made to address delivery and timing considerations.
- Potential damage to national roads due to abnormal loads is acknowledged, with a commitment to rectify any such damage in accordance with TII Pavement Standards.
- The Grid Connection route (GCR) does not form part of the current planning application and will be separately addressed, including routing options to safeguard proposed road schemes.
- The EIAR considers the capacity and safety of the road network, aligning with the NPF's requirement for maintaining strategic capacity and safety.
- The GCR will not be located within the National Road Network.
- The GCR does not form part of this planning application and will be the subject of a separate approval, which will include an assessment of options.
- Necessary consents or licenses for trenching or cabling proposals affecting the national road network will be obtained as required.
- Consultations with TII will be conducted for any work impacting infrastructure, with associated costs to be borne by the developer, and alternative routing will be sought to avoid the National Road Network.

10.1.1.12. Ecological Comments

- Cumulative impacts on aquatic receptors, including white-clawed crayfish, were considered in the EIAR, predicting non-significant residual cumulative effects.
- An extensive range of mitigation measures is proposed to protect wildlife and habitats, with no significant residual effects predicted.
- The biological water quality testing results show a complete picture of water quality, as different sites along the same watercourse were tested.
- No pearl mussels were recorded in extensive surveys, including eDNA surveys. Mitigation measures are proposed to prevent negative effects on pearl mussel populations.
- Turbine 11 is situated more than the 50m buffer zone from the closest watercourse.
- The habitats predicted to be lost due to the development are of low value and will be compensated for with replanting.
- Dedicated surveys did not find any mammal breeding or resting locations within 100 m of the development footprint. A re-confirmatory survey will be carried out prior to construction.
- The EIAR assesses bats fully, with no significant residual collision risk predicted following the implementation of bat mitigation buffers.
- The assessment of the project's effect on hen harrier is detailed in the EIAR, concluding that negative effects on wintering hen harrier are highly unlikely.
- Peregrine falcons are not classified as 'critically endangered' and no significant effects are predicted for peregrine falcons, including cumulative effects.
- The EIAR and Technical Appendix 15.3 acknowledge and assess all known bat roosts within 10 km of the Proposed Development.
- Devil’s bit scabious was not recorded within the development footprint, and suitable habitats for marsh fritillary butterflies are absent.
- There is no evidence from peer-reviewed sources to support negative effects of wind turbines on livestock, including cows and horses. Habituation to frequent background noise is likely.

11.0 **Assessment**

11.1.1. Having undertaken a site visit and having regard to the relevant policies pertaining to the subject site, the nature of existing uses on and in the vicinity of the site, the nature and scale of the development of the subject of application, and the nature of existing and permitted development in the vicinity of the site, I consider that the main issues pertaining to the proposed development can be assessed under the following headings:

- Alignment with National, Regional, and County Renewable Energy Policy
- Compliance with Development Plan policy
- Project Splitting and Grid Connection
- Public Consultation
- Environmental Impact Assessment
- Appropriate Assessment

These issues are addressed below accordingly.

11.2. **Compliance with National, Regional and Local Renewable Energy Policy**

11.2.1. The Climate Action Plan 2023 sets out a detailed sectoral roadmap designed to deliver the proportion of renewable electricity up to 80% by 2030, including a target increase of up to 9 Gigawatts of onshore wind energy by 2030. The proposed pathway includes a more rapid build-out of renewable generation capacity, including wind power generation technologies. The proposed 13 no. wind turbines have an estimated export capacity of 85.8 – 93.6 MW, based on turbines of a 6.6 MW and a 7.2 MW output. As stated in Section 3.8.2.6 of the EIAR, assuming an installed capacity of 85.8 to 93.6 MW, the proposed wind farm has the potential to produce c. 248,030 (SG155) to 270,579 (V162) MWh (megawatt hours) of electricity per year. This would supply approximately 59,000 to 64,000 Irish households with electricity per year, based on the average Irish households using 4.2 MWh of electricity. It is considered that such development would contribute to achieving the Climate Action Plan's target of achieving 80% renewable electricity and reducing greenhouse gas emissions by 51% by 2030. The nature and export capacity of the proposed development accords with

National Policy Objective 55 of the National Planning Framework (NPF), which seeks to promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a low-carbon economy by 2050.

11.2.2. At a regional level, the Regional Spatial & Economic Strategy for the Eastern and Midlands Region, 2019-2031, supports the delivery of the NPF and implementation of the Climate Action Plan, whereby the Strategy supports an increase in the amount of new renewable energy sources in the region, including the use of wind energy. Regional Policy Objective 4.84 seeks to support the rural economy and initiatives in relation to renewable energy, and Regional Policy Objective 6.9 seeks to ensure that the Midlands is well-positioned to address the challenges posed by the transition to a low-carbon economy and renewable energy. The nature of the proposed development is consistent with this objective.

11.2.3. At the county level, Section 3.4 of the Laois County Development Plan 2021-2027 sets out Laois County Council's Climate Mitigation Objectives. Objective CM RE 2 seeks to promote wind energy development subject to compliance with standard planning and environmental criteria. Objective CMRE 5 seeks to promote and facilitate wind energy development in accordance with the Guidelines for Planning Authorities on Wind Energy Development. Policy Objective WES 1 in the Laois County Wind Energy Strategy seeks to support wind energy development in County Laois to enhance energy security, reduce reliance on fossil fuels, comply with national and European renewable energy policies, and address climate change, ensuring appropriate siting and scaling in the county. Table 3.1 of the Development Plan sets out wind energy outputs for Laois (completed and granted), noting that if the potential from granted permissions were to be constructed, together with what has been built, it would represent a contribution from County Laois at nearly 1.5% of the total national output (8,200 MW) by 2030. It is my view that the proposed development with an installed capacity of 85.8 to 93.6 MW aligns with policy objectives CM RE 2, CMRE 5 and WES 1 and would contribute to Laois County's contribution to Ireland's national renewable energy targets as detailed in Ireland's Climate Action Plan (2023). National, regional and local policies and objectives regarding renewable wind energy support the nature and export capacity of the proposed wind energy development. An assessment of the

appropriateness of the location of the proposed development is addressed further below.

11.3. Compliance with Development Plan Policy

11.3.1. The Laois County Development Plan 2021-2027 provides a policy framework for wind energy development, categorising land into distinct classifications to guide the development of wind farms in the county. Policy Objective CM RE 7 promotes wind farms in 'preferred areas,' as mapped in Map 3.2, prohibits such development in 'Areas not open for consideration,' and prescribes to consider, subject to appropriate assessment, the location of wind generating infrastructure in areas 'open for consideration' and as per the Laois Wind Energy Strategy 2021-2027

11.3.2. Map 11.7 in Chapter 11 of the Development Plan identifies Landscape Character Areas whereby the proposed development site is in an area designated 'Mountains, Hills and Upland Areas'. Table 11.6 identifies such areas as having "high sensitivity" and is described as "areas with reduced capacity to accommodate uses without significant adverse effects on the appearance or character of the landscape having regard to prevalent sensitivity factors or special sensitivity factors". Specific Policy Objectives for Hills and Uplands Areas and Mountain Areas include the following:

- LCA 5 - Ensure that development will not have a disproportionate visual impact (due to excessive bulk, scale or inappropriate siting) and will not significantly interfere with or detract from scenic upland vistas, when viewed from areas nearby, scenic routes, viewpoints and settlements.
- LCA 6 - Ensure that developments on steep slopes (i.e. >10%) will not be conspicuous or have a disproportionate visual impact on the surrounding environment as seen from relevant scenic routes, viewpoints and settlements.
- LCA 7 - Facilitate, where appropriate, developments that have a functional and locational requirement to be situated on steep or elevated sites (e.g. reservoirs, telecommunication masts or wind energy structures) where residual adverse visual impacts are minimised or mitigated.
- LCA 8 - Maintain the visual integrity of areas which have retained a largely undisturbed upland character and Respect the remote character and existing low-density development in these areas.

- LCA 9 - Have regard to the potential for screening vegetation when evaluating proposals for development within the uplands.
- LCA 10 - Actively propose the designation of the Slieve Blooms as a Special Amenity Area and seek an Order to that effect.
- LCA 11 - Protect the positive contribution that views across adjacent lowland areas and landmarks within the landscape make to the overall landscape character.

11.3.3. The Wind Energy Strategy for County Laois (Appendix 5, January 2022 – including Ministerial Direction changes) further refines these classifications, acknowledging the absence of Strategic Areas due to exclusions like the Slieve Bloom Mountains. It identifies “Preferred Areas” suitable for wind energy development, notably on rehabilitated bogland, and outlines criteria for consideration in “Areas Open for Consideration”, which includes a case-by-case evaluation of wind energy applications. The strategy also delineates “Areas Not Open for Consideration”, whereunder Policy Objective WES 7 refers, stating that “these areas are not considered suitable for wind farm development due to their overall sensitivity arising from landscape, ecological, recreational and/or cultural and built heritage resources as well as their limited wind regime”.

11.3.4. Map 3.2 and further maps provided in the Planning Authority submission show that 12 of the 13 proposed turbines are located, wholly or partly, within areas marked as “not open for consideration” for wind farm development, with only one turbine in the southern cluster (T11) positioned in an area open for consideration, albeit bordering the area marked as “not open for consideration”.

11.3.5. The Landscape Character Assessment in Appendix 6 of the Development Plan further develops landscape character area classifications. Type 1 “Mountains, Hills, and Upland Areas” are described as distinctive but not dramatically peaked landscapes that are a defining characteristic of Laois, notably in the northwest and southeast. These regions offer expansive views and are punctuated by landmarks and orienting features, such as the Seven Hills, Cullenagh, Cullahill, and Fossy Mountains, with notable examples including a church on Wolfhill. Historically rich, these areas house archaeological sites evidencing ancient human settlements up to 9,000 years old. The terrain is marked by extensive afforestation and limited agriculture, with sparse new housing and numerous abandoned older structures. Although currently isolated, there is potential for tourism development through interconnected trails, enhancing

accessibility and appreciation of the landscape, with the Sliabh Bloom Mountains also referenced in this context.

11.3.6. Appendix 3 of the Wind Energy Guidelines 2006 specifies that 'for blade tips in excess of 100m, a Zone of Theoretical Visibility radius of 20km would be adequate (this is twice conventional thresholds and reflects greater visibility of higher structures)'. The same provisions are set out in Appendix 3 of the Draft Wind Energy Guidelines 2019. Given that the proposed turbines have a ground-to-blade tip height of 180m, a Zone of Theoretical Visibility radius of 20km, therefore, applies.

11.3.7. Map 11.8 confirms the absence of any designated scenic views or prospects in the local vicinity of the site. The nearest designated scenic views and prospects are located to the northeast of Timahoe and referenced as follows: Ref. 009, which is a view from the N80 in the townlands of Stradbally, providing vistas towards Portlaoise and Hewson Hill; and Ref. 018, also a view from the N80 in Stradbally, offering expansive views over the surrounding farmland and the River Bauteogue.

11.3.8. Chapter 7 of the EIAR provides an in-depth landscape and visual impact assessment for the proposed development. This is evaluated in the Environmental Impact Assessment section of this report.

11.3.9. The Kilkenny County boundary lies c. 2km south of the southernmost proposed turbine (T11). According to the Landscape Character Assessment (LCA) Map 1 of the Kilkenny County Development Plan 2021-2027, the closest landscape character area is classified as an Uplands Area, with the nearest subsection being the Castlecomer Plateau. As described in the LCA, this expansive upland area, predominantly in the county's northeast, has an almost circular shape and is situated between the Nore and Barrow River valleys. The terrain rises steeply from these valleys to the plateau's surface, which features gentle undulations and several minor ridgelines, reaching elevations between 200 and 340 meters above sea level. The plateau's elevation provides a prominent skyline and offers extensive, picturesque views across the Kilkenny basin and the river valleys. The area is widely recognised for its distinctive landscape quality. Section 8 of the LCA specifically notes that the central valley of Castlecomer Plateau, the area surrounding Castlecomer town, and the surrounding upland enclosures are regarded as suitable for wind energy development.

11.3.10. The Kildare County boundary is c. 13.5km east of the proposed development site. The Landscape Character Assessment in the Kildare County Development Plan 2023–2029 identifies the closest landscape character area east of the site as the Southern Lowlands LCA, classified as 'Class 1 – Low Sensitivity'. Adjacent to it, along the County boundary, is the River Barrow LCA, designated 'Class 4 – Special Sensitivity'. Of note, Landscape Objective LR O2 requires that any proposals likely to significantly impact a 'Class 4 or 5 Sensitivity Landscape' (i.e., within 500 meters of the boundary), as well as all wind farm development applications, must be accompanied by a comprehensive Landscape/Visual Impact Assessment. This assessment should include a series of photomontages from locations predetermined in consultation with the Planning Authority.

11.3.11. The Carlow County boundary is c. 12.5 kilometres southeast of the proposed development site. As per the Carlow County Development Plan 2022–2028, the closest landscape character areas include the Central Lowlands and Killeshin Hills. The Central Lowlands are recognised for their capacity to support various developments with appropriate mitigation. This area includes sensitive river valleys and ridges, notably the Barrow, Slaney, and Douglas River Valleys. Conversely, the Killeshin Hills area, characterised by its rural agricultural landscape, exhibits moderate sensitivity and a corresponding moderate capacity for accommodating diverse developments. However, its upland nature and relative exposure reduce its ability to absorb extensive rural housing or industrial development.

11.3.12. The Planning Authority, in its submission, evaluates the principle and site suitability of the proposed wind farm development in accordance with the Laois County Development Plan 2021-2027 and its Wind Energy Strategy. Their assessment, supported by overlays of the proposed development on official planning maps, reveals discrepancies and concerns.

11.3.13. Regarding site classification and turbine placement, the Planning Authority notes that according to the Planning Statement and Environmental Impact Assessment Report (EIAR), the southern cluster of the proposed development, comprising the four most southern turbines, falls within the category "Areas Open for Consideration", which requires a case-by-case evaluation. Furthermore, the Planning Statement states that a significant portion of the site, along with nine turbines, are situated in areas designated as "not open to consideration" for wind farm development,

due to sensitivity from landscape, ecological, recreational, cultural, and built heritage resources, as well as limited wind regimes.

11.3.14. The Planning Authority highlights inconsistencies between the site layout presented in the Planning Statement and EIAR and the actual planning application drawings. An overlay comparison map by the Planning Authority indicates that 12 of the 13 proposed turbines are located, wholly or partly, within areas marked as “not open for consideration” for wind farm development, with only one turbine positioned in an area open for consideration. Furthermore, the Planning Authority questions the accuracy of the landscape and visual assessment presented, citing incorrect site layouts in the EIAR, whereby Figure 7-1 and Figure 7-2 of the EIAR have the incorrect site layout superimposed. The Planning Authority recommends the developer confirm and possibly revise the assessment as part of a request for further information.

11.3.15. Despite recognising the strategic importance of the proposed development for economic, social development, and climate change mitigation in County Laois and beyond, the Planning Authority concludes that the proposed development materially contravenes the Laois County Development Plan 2021-2027 and its Wind Energy Strategy. This contravention is deemed contrary to the principles of proper planning and sustainable development for the area.

11.3.16. I have noted and taken into consideration the concerns raised in third-party submissions about the site's suitability, location and designation within the County’s Wind Energy Strategy, as detailed in Section 7.0 of this report.

11.3.17. The Applicant's response submission to the issue of site suitability for the proposed wind farm centres around a detailed justification of their chosen site within County Laois. The applicant acknowledges the strategic importance of the project highlighted by Laois County Council and points out the Council's support for renewable energy and reduction of greenhouse gas emissions as outlined in the Laois County Development Plan (CDP). However, the Applicant counters the Planning Authority's view that the development contravenes the County Development Plan (CDP) by submitting that the project aligns with the aims to support renewable energy development and should not be refused due to potential inconsistencies in zoning within the CDP.

11.3.18. The Applicant contends that the proposed development site, located within the 'Mountains, Hills and Upland Areas' Landscape Character Type (LCT), has been mischaracterised in terms of its sensitivity. The Applicant contends that the site should be considered 'medium sensitivity' rather than 'high sensitivity' - more akin to 'Hills and Upland Areas' than the more sensitive 'Mountain Areas' like the Slieve Bloom Mountains. This mischaracterisation is suggested by the Applicant to have led to the incorrect zoning of the site as 'not open to consideration'.

11.3.19. Addressing the landscape value, the Applicant asserts that the proposed site does not hold significant ecological, tourism, or scenic value that would preclude development, citing a lack of evidence for such designations within the County Development Plan. The Applicant suggests that the existing Laois Wind Energy Strategy and Landscape Character Assessment may not have been applied consistently across the county, leading to a flawed zoning methodology.

11.3.20. The submission also notes that the area designated as 'not open to consideration' may not be based on robust evidence and could warrant re-evaluation. The Applicant submits that the project, while partially located in an area zoned as 'not open to consideration,' does not impact environmentally sensitive areas and could enhance the tourism offering through the addition of an amenity trail.

11.3.21. Furthermore, the Applicant points out that the Planning Authority's own report acknowledges the project's strategic importance and insists that national and regional policy imperatives for renewable energy developments should take precedence over local policy inconsistencies. The Applicant references the Planning and Development Act, suggesting that the project should be permitted under Section 37(2)(b) due to its strategic importance and the presence of conflicting objectives within the development plan. The Applicant reinforces their argument by citing planning precedents where An Bord Pleanála has prioritised national renewable energy targets over local development plan policies, emphasising the urgent national need for renewable energy infrastructure as part of climate crisis responses. Addressing inaccuracies in the turbine layout noted by Laois County Council, the Applicant has provided an updated map (Appendix 2).

11.3.22. Having considered the documentation on file, including the Laois County Development Plan 2021-2027 and its appendaged Wind Energy Strategy and

Landscape Character Assessment, neighbouring County Landscape Character Assessments and submissions from the Planning Authority, the Applicant and third parties, it is my view that the proposed development by reason of its location in an area designated ‘Not Open for Consideration’ would materially contravene Policy Objective CM RE 7 of the Laois County Development Plan 2021-2027 and Policy Objective WES 7 of the Laois County Wind Energy Strategy

11.3.23. 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 permission even if the proposed development contravenes materially the Development Plan. This decision-making power is subject to the provisions of paragraph (b), which stipulates that the Board may approve such developments under certain conditions: if the development is deemed strategically or nationally significant, if there are discrepancies or lack of clarity in the Development Plan's objectives regarding the project, if the development aligns with regional spatial and economic strategies, relevant government policies, or the statutory responsibilities of local authorities, or if it is consistent with the development trends and previous permissions in the area since the Development Plan was established.

11.3.24. In this instance, notwithstanding the Applicant's assertions of strategic importance and the imperatives of national energy policy, the compelling weight of evidence regarding the unsuitability of the site for wind farm development based on established policy provisions, significant visual impact, and landscape sensitivity, as well as oversight by the OPR and Ministerial Direction in 2022 is overwhelming. The proposed development not only challenges the integrity of the Laois County Development Plan but also raises substantive concerns about the precedent it sets for future developments within protected and sensitive areas. Therefore, considering all these factors and maintaining alignment with the principles of proper planning and sustainable development, I recommend refusing permission for the proposed development.

11.4. Project Splitting and Grid Connection

11.4.1. Submissions received raise concerns regarding project splitting and grid connection, particularly focusing on the developer's misleading representation of two separate turbine clusters on Fossy Mountain and Wolfhill as a single site. It is submitted that the division of the project into northern and southern clusters, each falling below the 50MW threshold, necessitates separate Strategic Infrastructure Development (SID) applications in accordance with current regulations. Additionally, it is submitted that the proposal is deemed premature due to the absence of a finalised cable route for grid connection and unresolved capacity issues of substations, which have not been properly documented or addressed.

11.4.2. The applicant responded to the concerns raised regarding project splitting and grid connection for the proposed wind farm development across Fossy Mountain and Wolfhill. Regarding project splitting, the applicant clarifies that the development involves detailed layouts for both northern and southern clusters, with no intent to mislead the public regarding its scale. The Applicant notes that the approach follows precedents like An Bord Pleanála Ref. 308885-20, which addressed similar two-cluster wind farm concerns. The applicant makes references to case law, including O'Grianna & Ors v. Bord Pleanála [2014] and Coyne v ABP, Ireland & EngineNode [2023], which justify a holistic Environmental Impact Assessment Report (EIAR) and a single planning application. The applicant asserts that this methodology aims to assess cumulative effects accurately and adhere to the EIA Directive's principles, emphasising the importance of transparency and public consultation in the process.

11.4.3. Regarding grid connection, the applicant states that the capacity of the grid network is beyond the scope of the current planning application, as protocols prevent seeking grid connections during the planning application phase. Consequently, grid capacity is considered a separate matter, not a material consideration for this application. However, the environmental effects of potential grid connection routes are included in the submitted EIAR to address concerns about project splitting, drawing on the precedent of O'Grianna & Ors v. Bord Pleanála [2014]. The applicant acknowledges the national issue of grid capacity shortage, which could impact the implementation of new projects, emphasising that planning approval does not hinge on local network capacity. The applicant submits that the EIAR assesses two cable route options for

national grid connection, with a final choice to be made based on environmental, technical assessments, and capacity availability, incorporating feedback from Laois County Council and EirGrid.

11.4.4. With regard to the issues raised, it is my view that the Applicant has adequately addressed concerns regarding project splitting and grid connection for the proposed wind farm development spanning Fossy Mountain and Wolfhill. The approach to treating the proposed development as a single entity, despite comprising two clusters, is supported by comprehensive documentation and assessments that comply with the Planning and Development Regulations, 2001 (as amended). The references to case law, such as O'Grianna & Ors v. Bord Pleanála [2014] and Coyne v ABP, Ireland & EngineNode [2023], alongside the precedent set in ABP-308885-20, sufficiently address the issue of project splitting. It is my view that the approach of submitting a single planning application with an EIAR and NIS encompassing both clusters is justified, aimed at assessing cumulative effects in alignment with the EIA Directive's principles. Such an approach ensures transparency and a comprehensive evaluation of the project as a whole.

11.4.5. Regarding grid connection, the EIAR's inclusion of grid connection considerations, from potential impacts during construction, operation, and decommissioning to the assessment of cumulative impacts, demonstrates a comprehensive approach. This detailed analysis ensures that all environmental implications are taken into account. Furthermore, the Natura Impact Statement comprehensively describes the potential impacts of the proposed cable route options and their connection to the national grid. The acknowledgement that the proposed grid connection cable route will undergo a separate planning application process will ensure a focused and detailed examination of this aspect, aligning with regulatory requirements and best practices.

11.5. Public Consultation

11.5.1. Submissions express concerns about community consultation, citing gaps in interaction and transparency between the developer, planning authorities and the public/local community. It is submitted that there was a lack of public meetings to discuss the wind farm's impact, contrary to Aarhus Convention requirements. The community organised its own meetings due to this deficiency. Criticism is directed at

the applicant's inadequate engagement efforts, causing stress and division within the community.

11.5.2. The Applicant responded to these concerns by detailing how a Community Liaison Strategy was implemented, aligning with the 'Code of Practice for Wind Energy Development in Ireland for Community Engagement'. A Community Liaison Officer (CLO) was appointed to facilitate engagement with the community, ensuring ongoing communication from the project's development through to its operations. This approach included active engagement, especially with households within a 1.6km radius of the design layout, leading to 343 face-to-face meetings. Additionally, a project website and virtual consultation room were established to provide comprehensive information and gather feedback. The Applicant details how this strategy achieved significant engagement, with 70% of houses within 1km of the proposed development actively participating. Feedback mechanisms included project booklets, website access, and newsletters, which kept the community informed about the planning status and allowed them to express their views and apprehensions about the project. The Applicant describes how the Community Benefit Fund was highlighted as a positive aspect, with suggestions for its use, including support for local projects and funding for electric vehicle chargers. The Applicant states that the engagement process was designed to be transparent, incorporating feedback into the project design wherever possible. The final newsletter, issued before the planning submission, solicited further feedback through the project website and virtual consultation room. The role of the CLO was pivotal in establishing a positive relationship with the community and in gathering feedback.

11.5.3. Chapter 2 of the EIAR sets out the Applicant’s consultations with stakeholders, Laois County Council, prescribed pre-application consultation with An Bord Pleanála, details of community consultation, the project website, door-to-door community engagement, details of the virtual consultation room, and details of key issues raised during the pre-application consultation process, public consultation and result from community engagement.

11.5.4. With regard to the issues raised, it is my view that the Applicant has adequately addressed concerns regarding public consultation. Chapter 2 of the EIAR outlines a comprehensive approach to community engagement consistent with the Code of Practice for Wind Energy Development in Ireland. The appointment of a Community

Liaison Officer facilitated direct communication with the public, employing various methods such as door-to-door consultations within a 1.6km radius of the proposed development, distribution of informative materials, and the arrangement of follow-up meetings as needed. This engagement was complemented by the establishment of a dedicated project website that provided updates, an interactive GIS-based community consultation tool, and a virtual consultation room, which collectively ensured an accessible and responsive platform for public feedback and concerns.

11.5.5. The engagement with the Planning Authority, prescribed bodies, and the consideration of feedback from various stakeholders, including the public/ surrounding community, demonstrates comprehensive public consultation. Furthermore, third-party observers exercised their right to submit observations to An Bord Pleanála, and the concerns raised in these submissions have been thoroughly considered in this assessment. Therefore, I consider that the public was provided with the necessary opportunity to engage in the planning process under the subject application.

12.0 Environmental Impact Assessment

12.1. Introduction

12.1.1. The proposed development seeks a 10-year planning permission for the construction of a wind farm, with an operational lifespan of 35 years, distributed across two clusters located on Fossy Mountain and Wolfhill in County Laois, designated as the Northern and Southern clusters, respectively. The development comprises the construction of 13 wind turbines, providing an overall ground-to-blade tip height of 180m, the erection of a permanent meteorological mast with a height of 102.5m alongside the construction of a permanent 110 kV electrical substation, internal site access roads, and numerous ancillary facilities, as detailed in Section 4.0 above. The turbines, varied in rotor diameter (155 – 162m) and hub height (99m-102.5m), along with all associated and ancillary works — including but not limited to site development works, temporary construction compounds, and an extensive network of underground cabling — are detailed in the submitted Environmental Impact Assessment Report (EIAR). Furthermore, the proposed development includes temporary upgrade works along the turbine delivery route and connections to the national grid, with a projected Export Capacity (MEC) ranging between 85.8 – 93.6 MW. Other environmental development

considerations integrated into the project include (inter alia) ancillary forestry felling to facilitate the construction of the proposed development, landscaping, soil excavation, provisions of berms, the development of an internal site drainage network and sediment control systems, and site entrance improvements, including the removal of vegetation for visibility splays.

12.1.2. The application was submitted under Section 37E of the Planning and Development Act 2000 (as amended) and is accompanied by an Environmental Impact Assessment report (EIAR), as mandated for applications of this nature under the said section of the Act, comprehensively addressing the potential environmental impacts associated with the proposed development.

12.2. Format of the EIAR

12.2.1. The EIAR for the proposed wind farm is organised into four volumes: Volume I: Non-Technical Summary; Volume II: Main EIAR; Volume III: Appendices; and Volume IV: Landscape and Visual Amenity Viewpoint Photomontages.

12.2.2. Volume I, the Non-Technical Summary, presents an overview of the proposed development, including its rationale, alternatives considered, and the legal and policy framework guiding the assessment, notably the EU Habitats Directive (Directive 92/43/EEC) and the Birds Directive (Directive 2009/147/EC). It summarises the potential significant effects on the environment, mitigation, and monitoring strategies and describes the methodology and any difficulties encountered (none reported).

12.2.3. Volume II contains the detailed Environmental Impact Assessment Report, segmented into 18 chapters, starting with an introduction (Chapter 1), scoping, consultation and key issues (Chapter 2), description of the proposed development (Chapter 3), and planning policies and legislation (Chapter 4). Chapters 6-17 detail the environmental effects of the proposed development across various domains including: Population and Human Health (Chapter 5); Air and Climate (Chapter 6); Landscape and Visual (Chapter 7); Land, Soils, and Geology (Chapter 8); Water (Chapter 9); Noise and Vibration (Chapter 10); Cultural Heritage (Chapter 11); Traffic and Transportation (Chapter 12); Telecommunications and Aviation (Chapter 13); Shadow Flicker (Chapter 14); Biodiversity (Chapter 15); Major Accidents and Disasters (Chapter 16); Site Selection and Alternatives (Chapter 17); and the Interactions of the Foregoing

(Chapter 18). Each chapter describes the receiving environment, potential impacts from the development, mitigation measures and an assessment of the potential impacts from the proposed development and mitigation measures.

12.2.4. Volume III includes all supporting documentation, technical data, and references that underpin the assessments detailed in Volume II of the EIAR. These include the following;

- Appendix 1.1 Project Team and Experience
- Appendix 1.2 Projects Considered in the Cumulative Assessment
- Appendix 2.1 Scoping Response
- Appendix 2.2 Scoping Report Final
- Appendix 2.3 Pre-Application Correspondence
- Appendix 2.4 Community Engagement Documents
- Appendix 3.1 Candidate Turbine Specifications
- Appendix 3.2 CEMP CL Comments
- Appendix 3.3 Mitigation Measures
- Appendix 3.4 Forestry
- Appendix 5.1 Residential Receptors within 1km of site boundary
- Appendix 6.1 Carbon Calculator & Input Data
- Appendix 7.1 LVIAs Constraints and Options Considered
- Appendix 8.1 Geophysical Investigation Report
- Appendix 9.1 EU Directives, Leg, Guidelines, etc.
- Appendix 9.2 Water Framework Directive
- Appendix 9.3 _Flood Risk Assessment
- Appendix 9.4 GW Sampling Field Record Sheet
- Appendix 9.5 GW + SW Quality Screened Report
- Appendix 9.6 GW + SW Lab Reports
- Appendix 9.7 Borehole Log (BH T2)
- Appendix 9.8 Rating of Existing Sig (II Guidelines)
- Appendix 9.9 Description of Effects (EPA)
- Appendix 9.10 Classification of Sig of Impacts (EPA)
- Appendix 10.1 Glossary of Terms
- Appendix 10.2 Baseline Survey Details
- Appendix 10.3 Graphs of Measured Background Noise
- Appendix 10.4 Derived Wind Farm Noise Limits
- Appendix 10.5 Assessment Against 2019 Draft Guidelines
- Appendix 10.6 Wind Speed Calculations
- Appendix 10.7 Calibration Certificates
- Appendix 11.1 Site Gazetteer
- Appendix 12.1 Colossus Windfarm TDR Report
- Appendix 12.2 Traffic Survey Data
- Appendix 12.3 CTPMP
- Appendix 13.1 Scoping and Consultation Correspondence
- Appendix 13.2 PRN Protocol Agreement

- Appendix 14.1 Shadow Flicker Modelling Input Data and Results by House Window (1)
- Appendix 14.2 Scenario 1
- Appendix 14.3 Total Theoretical Shadow Flicker Shutdown Periods by
- Appendix 15.1 County Development Plans and Biodiversity
- Appendix 15.2 Baseline Bird Reports
- Appendix 15.3 Baseline Bat Report
- Appendix 15.4 Aquatic Ecology Report
- Appendix 15.5 Terms for Impact Assessment
- Appendix 15.6 Designated Site Synopses
- Appendix 15.7 Desktop Data
- Appendix 15.8 Collision Risk Model
- Appendix 15.9 TDR Node Habitats
- Appendix 15.10 NIS Final
- Appendix 15.11 Habitat and Species Management Plan

12.2.5. In accordance with Article 5(3)(a) of the 2014 EIA Directive (Directive 2014/52/EU), the EIAR has been prepared by competent experts, with Appendix 1.1 in Volume III listing their qualifications and experience, confirming the report's preparation by individuals with the requisite expertise.

12.2.6. I am satisfied that the EIAR has been prepared by competent experts, is complete and of acceptable quality, and that the information contained in the EIAR and supplementary information provided by the developer adequately identifies and describes the direct and indirect effects of the proposed development on the environment and complies with Article 94 of the Planning and Development Regulations 2001 (as amended). I am satisfied that the information provided is reasonable, up to date and sufficient to allow the Board to reach a reasoned conclusion on the significant effects of the proposed development on the environment, taking into account current knowledge and methods of assessment.

12.3. Consideration of Alternatives

12.3.1. The EIAR for the Coolglass Wind Farm, in compliance with the EIA Directive (2011/92/EU as amended by 2014/52/EU), outlines a detailed consideration of alternatives relevant to the project's features, including the 'Do Nothing' option, various technologies, site locations, designs, layouts, and cable as well as haul routes. It addresses the Directive's requirement to describe reasonable alternatives and the rationale for the preferred choice by evaluating environmental impacts.

12.3.2. In the macro-level site selection for the Coolglass Wind Farm, described in the EIAR, an analysis guided by the DoEHLG's commitment to zero shadow flicker and various other criteria was conducted. Key factors such as national environmental designations, the distribution of existing wind farms, grid capacity, population density, and adherence to international, national, and regional policies were assessed. The evaluation revealed that while the west and east seaboards exhibited dense environmental designations, the midlands—with over 300 operational wind farms, favourable grid capacity, and moderate population density - emerged as the most suitable location for development. This conclusion was supported by data, including the SEAI Wind Mapping System, EirGrid forecasts, and census information, collectively indicating the midlands' viability for wind energy generation and grid integration.

12.3.3. The EIAR highlights how the Coolglass Wind Farm aligns with national and regional energy policies, emphasising sustainability and energy security. It notes Ireland's commitment under the National Planning Framework to reduce greenhouse gas emissions by 80% by 2050 and the Climate Action Plan 2023's goals to halve emissions by 2030, with significant boosts in renewable energy, including wind and solar. Additionally, the Eastern and Midland Regional Spatial and Economic Strategy underscores renewable energy's role in strengthening Ireland's energy infrastructure resilience, particularly the contribution of wind energy.

12.3.4. The micro-level search for the Coolglass Wind Farm focused on a 25 km radius from Portlaoise, targeting the central and southern midlands while avoiding densely populated areas and ensuring proximity to substations capable of supporting the development. This search covered Laois, Offaly, Carlow, and Kildare, guided by criteria including local development plan policies, Natura 2000 site locations, motorway proximity, population density, cultural heritage sites, grid proximity, and wind speed. Local planning policies were evaluated, particularly regarding wind energy zoning, landscape character, and environmental and cultural heritage designations, despite the noted discrepancies between local and broader European/National guidelines. The landscape assessment highlighted a variety of terrain across the search area, from developed pasturelands and peatlands in the north to rolling, forested topography in the south, influencing the suitability and visual impact considerations of potential development sites.

12.3.5. The EIAR considers Natura 2000 sites, including National Heritage Areas (NHAs), Special Areas of Conservation (SACs), and Special Protection Areas (SPAs), in its site selection process for the proposed wind farm development, reflecting their protection under Irish and EU legislation. Despite the Midlands region's diverse ecological landscape, the EIAR notes the selected site's minimal overlap with Natura 2000 sites, attributing this to the area's topographical characteristics and the absence of peat, thereby aligning the project with conservation practices while facilitating wind energy development.

12.3.6. The EIAR details considerations regarding the proximity of the proposed development to motorways, citing requirements by the Dublin Airport Authority (DAA) and the Department of Defence Irish Air Corps for a setback of c. 3 nautical miles to aid in aerial navigation. This requirement influenced the selection of a site south of Portlaoise, with the chosen site being over 5.32 nautical miles from the nearest motorway, satisfying these guidelines. Additionally, the EIAR evaluates population density, noting that areas like Laois present a lower density compared to more urbanised regions such as Cork and Dublin, making it a preferable location for the development. The presence of cultural heritage sites, including the Rock of Dunamase and Emo Court, was assessed with findings indicating a concentration of archaeological sites to the southeast of Portlaoise, impacting site selection. Furthermore, the availability of grid capacity and wind speed were crucial factors in the final decision-making process. Two substations within the study area were identified as having sufficient capacity for the development, and wind speeds, averaging between 7.9 and 9.3 m/s and higher at elevated locations, were deemed suitable for wind energy generation, culminating in the selection of the current site for the proposed development.

12.3.7. The EIAR details that the final site selection for the Proposed Development was influenced by a confluence of factors such as landscape and land use, access and infrastructure, environmental considerations, population density, and constructability. The chosen site, typified by its upland location within the Midlands, features a varied topography with commercial forestry, agricultural lands, and natural scrub, representative of the region's landscape. Accessibility is highlighted with the site's proximity to major transport networks like the M7 and M9, complemented by existing and newly proposed internal access routes. Environmental viability was confirmed

through extensive surveys, noting the absence of peat and minimal impact on archaeological areas. The area's relatively low to medium population density, when compared to nearby urbanised regions, and the lack of peat underscored the site's suitability in terms of minimal social impact and construction feasibility. Additionally, the site's closeness to essential grid infrastructure, namely the Pinewoods and Coolnabacky Substations, further validated its selection, balancing technical requirements with environmental and social considerations.

12.3.8. The EIAR assesses various renewable energy technologies for the Coolglass Wind Farm site, weighing their practicality and sustainability. Bioenergy is ruled out due to its reliance on inconsistent raw materials and higher environmental and cost implications. Solar PV is found unsuitable because of the site's land use and topography, which limit effective solar installation. Hydrogen is discounted owing to its extensive resource and infrastructure demands. Wind energy is identified as the most viable option, fitting well with the site's wind speed, access, terrain, and grid proximity. The region's elevated landscapes and infrastructure further validate wind power as the optimal choice for the project.

12.3.9. The EIAR details the evaluation of alternative sites for the wind farm, highlighting strategic selection to minimise environmental impact. The selection process utilised a detailed screening approach, considering factors such as wind availability, land use, grid access, community effects, environmental and heritage constraints, and policy compliance. Drawing on the developer's prior experience with wind projects and guided by the Laois County Development Plan and Strategic Environmental Assessment, the chosen site balanced optimal wind conditions, lower population density, and sufficient grid infrastructure while minimising impacts on landscapes, residential areas, water bodies, Natura 2000 sites, protected sites and national monuments.

12.3.10. The EIAR describes an iterative design and layout process for the Coolglass Wind Farm, following the site's identification as the preferred location. This process evaluated various layout alternatives to minimise environmental impacts while meeting project objectives, involving continuous dialogue between designers and environmental experts, and incorporating feedback from public and stakeholder consultations. The design aimed to balance environmental considerations with technical requirements, such as turbine spacing to reduce wake effects and optimise

operational efficiency. Industry guidelines and best practices, including those from the Department of Environment, Heritage and Local Government and the Irish Wind Energy Association, informed the layout decisions. Factors considered in the design process included setbacks from residences and sensitive areas, landscape and visual impacts, ecological and geological considerations, and noise and cultural heritage impacts. The project progressed through several layout proposals, settling on a design with turbines featuring a 180m tip height and rotors between 155-162m in diameter, arranged in two clusters.

12.3.11. The EIAR details the progression from the initial site layout through various iterations to refine the design and layout of the proposed wind farm at Coolglass, focusing on minimising environmental impacts while optimising energy yield. The initial layout contemplated 23 turbines across three clusters with considerations for turbine size and height to achieve optimal performance. Subsequent layout options explored adjustments in turbine numbers, cluster configurations, and dimensions to align with evolving technology and environmental assessments. Significant design iterations followed, informed by landscape and visual assessments, leading to the decision to prioritise fewer, taller turbines to reduce visual clutter and minimise environmental impact. Specific iterations involved relocating turbines to address ecological concerns, visual impact, and proximity to historical sites and residential areas. The process included consultations and feedback mechanisms, incorporating public and stakeholder input, resulting in iterative refinements to turbine placements and site infrastructure. The final selected design, developed through evaluation of environmental, visual, and technical data, consists of a wind farm with turbines characterised by specified tip heights and rotor diameters, which the EIAR posits is designed to integrate effectively into the local landscape while adhering to environmental and planning standards.

12.3.12. The EIAR outlines the evaluation of underground cable routes and substation locations for the Coolglass Wind Farm, adhering to Laois County Development Plan guidelines to minimise environmental impacts. It assesses two cable route options, emphasising route optimisation and environmental considerations, with the final selection pending a separate planning application based on grid capacity and technical requirements. The EIAR also references EirGrid's grid enhancement initiatives, indicating both considered substations are equidistant from the site and capable of

supporting the project, with the ultimate choice contingent upon agreements with EirGrid and grid capacity availability.

12.3.13. The EIAR examines the "Do-Nothing" alternative, identifying the implications of not proceeding with the proposed wind farm development. It highlights that under this scenario, Ireland's capacity to meet EU and national greenhouse gas emission reduction targets would be compromised, potentially incurring financial penalties from the EU. The EIAR estimates significant CO2eq displacement by the proposed development, which would be forgone, impacting efforts to limit global warming in alignment with the Paris Agreement. Additionally, socio-economic benefits such as job creation during construction and operation phases, and community benefits from a related fund, would not be realised. The document contrasts the environmental impacts of developing the wind farm against the "Do-Nothing" scenario across several domains, including air quality, noise and vibration, biodiversity, and more, indicating that the development's impacts can be mitigated to non-significant levels, whereas the "Do-Nothing" scenario fails to contribute to renewable energy goals and socio-economic benefits, yet maintains current environmental and landscape conditions.

12.3.14. In consideration of the alternatives analysis presented in the EIAR, I am satisfied that the applicant has adequately described reasonable alternatives and the rationale for the preferred location of the proposed development. The justification for the selected site, layout, construction methods, and grid connection strategies is thoroughly substantiated, reflecting adherence to the EIA Directive's mandates.

12.4. Population and Human Health

12.4.1. Population, Population Density, Household Statistics and Age Structure

12.4.2. The EIAR states that during the construction phase of the proposed development, there may be a brief increase in population due to workers, likely sourced from outside the Study Area. While some may temporarily reside in the area, most are expected to commute. The construction phase could generate between approximately 104 and 274 jobs, potentially increasing the Study Area's population by 62% to 107%. However, this rise would be temporary, returning to normal outside of working hours. The permutation of turbine and hardstanding sizes may have a slight effect on

population metrics, while the output of 6.6-7.2MW could lead to a short-term increase in workers.

12.4.3. The EIAR describes that the construction of cable routes (Options 1 or 2) will occur over a 12-month period, involving intermittent road closures. This may lead to a slight increase in population along the routes during working hours, but the impact is anticipated to be insignificant and temporary due to the transient nature of the works. Similarly, the construction of the recreational amenity trail, scheduled after wind farm and cable route installation, is expected to last 12 months. While it may result in a slight population increase during working hours in nearby areas, the effects are projected to be minimal and temporary, mainly involving trail improvements.

12.4.4. The EIAR details that during the operational phase of the Proposed Development, there will be direct and indirect employment opportunities, primarily in operations and maintenance. Approximately 8-10 long-term jobs are anticipated, with a slight temporary increase in population within the Study Area during working hours. However, most of these jobs are not expected to be based in the Study Area. Regarding cable routes, as both Options 1 and 2 involve underground placement, no potential effects are envisaged during the operational period. Upon completion, the recreational amenity trail is expected to have a positive, slight, and permanent impact on the existing population, as it will be utilised by locals and modest visitors.

12.4.5. The EIAR outlines that during the decommissioning phase of the Proposed Development, similar but reduced impacts on population and demographics to those seen during construction are anticipated. A construction crew will be required for dismantling infrastructure, with fewer workers compared to the construction phase. Daily population increases during working hours are expected, primarily due to temporary construction activities, with minimal permanent impacts on population trends. While some workers may temporarily reside in the Study Area during decommissioning, most are expected to commute, resulting in slight, temporary population increases in both the Study Area and Laois County. However, the decommissioning phase is not likely to cause any permanent changes to population trends, density, household size, or age structure. Regarding cable routes, both Options 1 and 2 are expected to remain in place following decommissioning, with no significant impacts on population metrics. Overall, the decommissioning phase is

projected to have slight and temporary effects on population, primarily due to construction activities, with negligible long-term impacts.

12.4.6. The EIAR indicates that no significant impact on population metrics is foreseen, necessitating no mitigation measures for the wind farm, cable routes, or the recreational amenity trail. Regarding residual effects, operational activities may cause a temporary, slight population increase during working hours in the Study Area due to maintenance jobs, yet long-term impacts on population trends are expected to be imperceptible. Similarly, for cable routes, no residual effects are predicted, and while a temporary increase in recreational users on the amenity trail is expected, long-term impacts on population trends are unlikely.

12.4.7. In consideration of the above, it is my view that the proposed wind farm development, along with associated cable routes and recreational amenity trail, would not have significant effects on Population, Population Density, Household Statistics, and Age Structure within the Study Area.

12.4.8. **Socioeconomics, Employment and Economic Activity**

12.4.9. The EIAR states the construction of the wind farm and associated infrastructure is likely to provide employment opportunities in technical consultation, contracting, and maintenance staff, thereby benefiting the local economy. The employment figures are anticipated to range between 104 to 274 jobs, with a direct, positive impact on local businesses and services. Material sourcing within the local area is expected to support local construction trades, albeit temporarily.

12.4.10. During the operational phase, the EIAR posits that the proposed development will create opportunities in mechanical-electrical contracting and crafts. The European Wind Energy Association suggests that 0.4 long-term jobs per MW of installed capacity could arise. Additional indirect benefits for the local economy are expected, with a slight positive impact on employment in the Study Area and County Laois. The development is also set to contribute through rates and development contributions, with significant beneficial effects on service provision in County Laois.

12.4.11. According to the EIAR, the decommissioning phase will require a construction crew for dismantling and remediation work, providing employment opportunities and contributing to the local economy, similar to the construction phase but to a lesser

degree. The effect on local socio-economics, employment, and economic activity is expected to be slightly positive and short-term.

12.4.12. The EIAR describes that the anticipated impacts of the wind farm's construction, operation, and decommissioning phases are primarily positive, with no significant adverse effects identified. Consequently, no additional mitigation measures are considered necessary for socio-economic, employment, or economic activity aspects.

12.4.13. The EIAR notes that the residual socio-economic effects of the development are positive, due to employment opportunities during the operational and maintenance phases and income expenditure by construction and operations workers in the local area. The community benefit fund from the Renewable Energy Support Scheme will offer a long-term significant positive impact. Payments and development contributions are projected to substantially improve service provision in County Laois, yielding a significant positive residual effect. The recreational amenity trail will also have a slight positive residual impact once constructed.

12.4.14. In consideration of the above, it is my view the proposal would have a predominantly positive influence on socioeconomics, employment, and economic activity, without significant adverse effects. The predicted creation of employment opportunities during construction and operation, along with the associated community benefits and support for local service providers, would result in a net positive impact on the local economy.

12.4.15. **Land Use, Settlement Patterns Baseline Population and Demographic Trends**

12.4.16. The EIAR details that construction will involve felling approximately 54.36 ha of forestry (52.78 ha permanently and 1.58 ha temporarily) with a moderate permanent impact on forestry. Land use changes will be slight and temporary on the small proportion of agricultural lands used for turbine access and hardstands. During operation, the EIAR notes minimal land use impact as only c. 5% of the site will be used, with slight negative effects on agricultural land from the conversion to wind farm infrastructure. A replanting scheme is proposed to mitigate the loss of forestry. Decommissioning is expected to have short-term, slight impacts, with temporary

disruption to forestry practices and access, as described in the EIAR. The use of existing forestry tracks for decommissioning will reduce the extent of the impact.

12.4.17. Mitigation will include the use of existing tracks and minimal new construction, as per the EIAR. A Construction and Environmental Management Plan is to be implemented, aiming to reduce disruptions to current land uses, with community liaison for public updates. Post-mitigation, the EIAR anticipates no significant adverse residual land use effects. The remaining infrastructure, like substations and the underground cable, is expected to have an imperceptible impact, with improved access tracks providing moderate positive effects on forestry practices.

12.4.18. In consideration of the above, it is my view that the proposed development would have a negligible effect on land use, settlement patterns, baseline population, and demographic trends, as the operational footprint is limited, and the majority of the site will maintain its current use. I conclude that the mitigation measures outlined and the temporary nature of construction and decommissioning impacts will not result in significant changes to the existing demographic or settlement patterns.

12.4.19. **Recreation, Amenity and Tourism**

12.4.20. The EIAR reports that during the construction of the Coolglass Wind Farm, specific recreational trails within the site, such as the Fossy Mountain Loop and the Swan Loop, will experience a moderate, temporary disruption due to intermittent closures over an 18-month period within the broader 10-year construction phase. Indirect effects from increased construction traffic may temporarily affect adjacent trails by causing noise and dust; however, planned transport routes and management measures aim to mitigate these impacts, which are expected to be non-significant in nature.

12.4.21. Upon completion, the EIAR asserts the wind farm would coexist compatibly with local tourism and recreation, as reflected in positive public attitudes towards wind farms in the landscape, as found in national surveys by SEAI. The operational phase will not significantly impede access to the area's trails, and the installation aligns with regional development plans to enhance local amenity value, potentially drawing visitors to the newly accessible trails around the wind farm.

12.4.22. Decommissioning will lead to a moderate but temporary impact on recreation and tourism, mainly through the removal of structures and possible temporary closure of access routes. The EIAR forecasts that designated transport and haul routes will limit indirect impacts, like noise and dust, on nearby recreational trails such as the Swan Loop, ensuring any adverse effects remain short-lived and managed.

12.4.23. Mitigation measures in the EIAR focus on preserving the recreational and tourism appeal of the area during all project phases. This involves incorporating existing trails into the wind farm's design, offering alternative routes during temporary closures, and establishing clear signage and safety measures. Post-construction, new and improved trails are anticipated to enhance the network for walking, hiking, and potentially educational purposes.

12.4.24. Regarding residual effects, the EIAR posits that once the wind farm is operational and following decommissioning, the residual effects on local recreation and tourism are expected to be minimal. In the long term, the EIAR submits that the project is likely to deliver a net positive impact by providing new and improved recreational trails, contributing to the region's tourism appeal and adhering to the strategic vision of the Laois County Development Plan.

12.4.25. In consideration of the above, it is my view that the proposed development would not significantly affect recreation, amenities, and tourism in the area, considering the temporary nature of any disruptions. The planned improvements to local trails and the provision of new amenities are likely to bolster the area's long-term tourism and recreational appeal.

12.4.26. **Human Health**

12.4.27. In the construction phase, the EIAR describes significant potential health and safety hazards for construction workers and the general public stemming from increased traffic, transport of heavy materials, noise, and dust emissions, as well as risks posed by works on public roads and safety issues at the construction site itself. Particular risks identified include accidents from lifting heavy loads, working with electricity, at heights, or in confined spaces, alongside concerns regarding soil stability and road safety due to traffic disruptions. The EIAR puts forward that without proper safety protocols, adverse weather conditions could amplify these risks, significantly impacting human health. Furthermore, the EIAR notes the COVID-19 pandemic

presents additional health risks, necessitating adherence to up to date HSE guidance and precautions to mitigate the virus's spread on-site. Regarding air quality, the EIAR indicates no significant impacts from construction traffic emissions, with only a negligible impact anticipated from construction machinery due to mitigation measures. Nevertheless, potential contamination of groundwater from construction could impact human health, although mitigation measures, as detailed in the EIAR, are expected to reduce this to a negligible level.

12.4.28. The EIAR posits that, if left unmitigated, the cumulative effects of the construction phase could have significant impacts on human health and safety. Mitigation measures include the implementation of strict construction and safety protocols, regular consultation with health and safety guidance, and specific measures to manage traffic and ensure the safety of public roadways and adjacent lands. These measures aim to prevent any substantial impacts on human health and public safety, particularly those related to air quality and water contamination, which are expected to be slight and temporary.

12.4.29. During the operational phase of the proposed wind farm, the EIAR notes that, with appropriate mitigation measures in place, the direct impact on human health and safety is expected to be minimal. The wind turbines themselves, according to the Wind Energy Development Guidelines, are not deemed a safety risk to the public or animals, with only a remote possibility of injury from ice shed or blade damage. The EIAR details that recreational trails on the site will be accessible and upgraded, providing safe outdoor activities for the public, further contributing to public health positively. The EIAR also describes implemented safety measures, including anti-vibration sensors on turbines to detect and address ice build-up and standard safety equipment for operational staff, which serve to reduce any potential health risks to a negligible level.

12.4.30. In terms of electromagnetic interference, the EIAR posits that the electromagnetic fields (EMF) produced by the wind farm’s operation, including those from underground cables, will be well within international and national safety standards and guidelines, such as those from the ICNIRP. The EIAR indicates no anticipated health impacts from EMF on the site workers or nearby residential properties, with the expected levels being significantly lower than those that might cause concern. Furthermore, the EIAR suggests that the local community will benefit from the

recreational amenity trail, which is expected to have a slight, permanent positive impact on health, ensuring a beneficial residual impact from the wind farm's operation.

12.4.31. The EIAR outlines that the decommissioning phase of the wind farm will involve dismantling the turbines and associated infrastructure, which could pose health and safety risks similar to those encountered during the construction phase to workers and the public. These include risks from the presence of heavy machinery, increased traffic, and the potential obstruction of public roads and trails. However, the EIAR states that with the implementation of a Decommissioning Plan, including clear signage and community notification, these risks should remain moderate, temporary, and non-significant. Additionally, it is expected that the cable routes and recreational amenity trail will remain unaffected, ensuring no negative residual impacts on human health from the decommissioning activities.

12.4.32. To ensure the health and safety of construction workers and the public during the construction and decommissioning phases, the EIAR outlines a range of mitigation measures in line with safety regulations. This includes comprehensive training in health and safety, risk assessments, and a Construction and Environmental Management Plan detailing safety protocols and methodologies. The EIAR notes that public safety concerns will be managed with restricted site access, clear signage, and communication, especially when transporting large loads. Traffic management plans and on-site precautionary measures, including those addressing the risks of COVID-19, will be implemented. These plans are set out in the EIAR's Technical Appendices.

12.4.33. The EIAR projects that, due to planning and mitigation measures, the residual impacts on human health from the wind farm and associated TDR will be imperceptible. Protective measures such as adequate setback distances from nearby dwellings, shadow flicker prevention, and noise reduction are anticipated to minimise potential adverse effects. The significant long-term benefits include the substantial reduction of CO2 emissions, estimated at 52,325 tonnes of CO2eq annually, contributing to cleaner air and mitigating climate change. Furthermore, the development will enhance local recreational opportunities by upgrading forest trails, which is expected to positively influence community health by promoting physical activity.

12.4.34. In consideration of the above, it is my view that subject to the implementation of the proposed mitigation measures as outlined in the EIAR and associated technical documents, including (inter alia) the Construction and Environmental Management Plan, Safety and Health Management Plan and Construction Traffic Management Plan, the proposed development would not have significant effects on human health. I consider that subject to adherence to safety regulations during construction, operation, and decommissioning, along with the proposed measures to mitigate noise, air quality, and other potential hazards, the proposed development would not adversely impact the surrounding community.

12.4.35. **Cumulative Effects**

12.4.36. The EIAR details the cumulative effects of the proposed wind farm in relation to existing and potential developments within a 20km radius, focusing on direct and indirect impacts on traffic, air quality, and noise. The assessment has identified several developments, including wind farms, quarries, infrastructural projects, and a renewable gas facility. The EIAR notes that increased traffic from concurrent construction activities poses a low cumulative effect on traffic and noise, and a slight to moderate impact on air quality, all of which are expected to be short-term (less than 3 years). Notably, for the Michael Johnson quarry (PA Ref 20247), the EIAR posits no mitigation is required given the low number of trucks and absence of blasting. Similarly, potential coinciding operations with the Bilboa Wind Farm and Cullenagh Wind Farm are predicted to have low cumulative effects, with no mitigation required. In terms of the Bord Na Móna Powergen Ltd. development, overnight haulage schedules for the Proposed Development are expected to minimise cumulative traffic impact. The Spink Quarry presents a moderate, long-term traffic nuisance and a slight, long-term dust impact. Pinewoods Wind Farm's construction phase is expected to have slight to moderate short-term effects on traffic and noise, with no mitigation needed for the grid connection. Overall, the EIAR concludes that the cumulative impacts are manageable without significant mitigation measures, owing to the nature of planned construction and operational timings.

12.4.37. In consideration of the above, it is my view that the EIAR presents a comprehensive analysis of cumulative effects, demonstrating that the proposed wind farm's impacts on traffic, noise, and air quality are minor and of a short-term nature. I

conclude, therefore, that subject to the implementation of the mitigation measures outlined, including overnight haulage to reduce traffic congestion, the proposed development would not have a significant cumulative effect on the population and human health in the area.

12.5. Landscape

12.5.1. Chapter 7 of the EIAR assesses the impacts of the Proposed Development on the landscape and visual amenity of the receiving environment. The EIAR and its finding are supported by a Landscape and Visual Impact Assessment (LVIA) in Appendix 7.1 and a portfolio of photomontages (Volume 4). The LVIA methodology is stated as combining desktop analysis, including ZTV mapping and review of County Development Plans for sensitive landscape and scenic view/route designations, with fieldwork to document landscape characteristics and finalise key VRPs for visual impact visualisations.

12.5.2. **Existing Landscape Environment**

12.5.3. The EIAR describes the existing landscape environment as one characterised by varied topography and diverse land uses in the southeast of Co. Laois. The landform transitions from upland areas around Fossy Hill and Mountain, to the Castlecomer Plateau, which forms a watershed between the rivers Nore and Barrow. Significant landscape features include a cluster of hills in the northeast, the distinct Cullenagh Mountain to the west, and the serpentine Timahoe Esker. Land use reflects this topography with high-density conifer forestry plantations to the south, open pastures and urban areas transitioning to boglands to the west, and tillage in the Barrow Valley to the east. The EIAR notes a mix of dense mature hedgerows and larger commercial fields within the agricultural farmland, contrasting with the forested upland landscapes where existing and permitted wind farms are situated.

12.5.4. The EIAR details further that along the river corridors, particularly the River Barrow, there is a mix of commercial farming and scattered residential development. Woodlands in the north comprise native and mixed species, with notable examples such as Oughaval and Ballykilcavan Woods. Parklands and estate grounds, including Stradbally Hall and Emo Court, contribute to the area's amenity value. Moreover, restoration efforts such as the Abbeyleix Bog Project enhance recreational and

biodiversity values in cut bog areas, encapsulating a landscape that, while utilitarian in its various land uses, maintains significant natural and cultural features with implications for any proposed development, including wind farms.

12.5.5. Addressing visual impact, the EIAR emphasises the importance of understanding the visual impact of the proposed development by first establishing the 'Zone of Theoretical Visibility' (ZTV), which highlights areas from where the development may be visible, disregarding intervening vegetation or built structures that may offer screening. A computer-generated ZTV map indicates that the proposed wind farm would be theoretically visible primarily within the central study area, with comprehensive visibility of turbines within a 5km radius, extending up to 10km in some directions. The EIAR specifies that visibility becomes patchy beyond these central areas, especially within the low-rolling landscapes that are punctuated by hills and eskers, thus limiting visibility to crests and upper slopes.

12.5.6. The EIAR details further that key receptors within the ZTV include local settlements, national secondary routes, and regional roads, all potentially offering comprehensive views of the development. While the landscape to the northeast of the study area presents greater potential visibility, the EIAR notes that many designated scenic views and routes, such as those outlined in the County Development Plans of Laois, Kilkenny, Carlow and Kildare, are positioned outside of the ZTV or have view directions away from the site. Only a few designated views, such as those across the Barrow Valley, are within the ZTV and afford views towards the site. These include View 018 from the N80 with full visibility towards the site, and Scenic Route 22 along the L8017 offering views over the Barrow Valley within the ZTV. Other designated viewpoints have partial visibility directed away from the site.

12.5.7. The EIAR highlights the existing environment in terms of population centres, transport routes, tourism, amenity, and heritage features within the study area surrounding the proposed development site. Major centres such as Portlaoise, Carlow, and Athy are located at distances ranging from 10km to 12km from the site, with a variety of smaller towns and rural settlements scattered throughout the landscape. The area is well-connected by transport, featuring two major motorways, the M7 and M9, and a network of national and regional roads, facilitating easy access across the region. The presence of the Grand Canal and rail lines also contributes to the area's transport infrastructure.

12.5.8. The EIAR also details the area's rich heritage, noting significant landmarks such as the Rock of Dunamase, Timahoe Round Tower, and a variety of estates and historical residences like Emo Court. These, along with the recreational pathways along the Barrow Way and various woodland walks, contribute to the region's tourism and amenity value. Waterways like the River Nore and the Grand Canal add to the visual amenity and biodiversity, enhancing the natural landscape's value. Smaller local sites of historic significance further enrich the cultural landscape.

12.5.9. The EIAR details the process for identifying Viewshed Reference Points (VRPs) as foundational for assessing the landscape and visual impact of the proposed wind farm. The EIAR states that rather than an exhaustive inclusion of all potential viewpoints, a strategic selection of VRPs is made to represent varied views of the proposed development, based on distance, angle, and context. This approach, the EIAR posits, ensures a comprehensive yet manageable assessment, focusing on key impacts rather than an unwieldy catalogue of vistas.

12.5.10. In its assessment, the EIAR details six categories of receptor types: Key Views of national or international value, Designated Scenic Routes and Views as identified in County Development Plans, Local Community views within a 5km radius, Centres of Population where the viewer numbers are significant, Major Routes including roads and railways, and Amenity and Heritage features. The EIAR notes that the selection of VRPs is guided by the primary criterion of significance, considering the unique characteristics of each receptor type and the nature of how views are experienced by observers, be they static or in motion.

12.5.11. The EIAR identifies tourism, recreational, and heritage features as sensitive visual receptors within the study area, recognising that such locations are often intertwined due to heritage sites being popular tourist and amenity destinations. The EIAR notes that these receptors are sensitive to development, as visitors are likely to be more attuned to the surrounding landscape. This sensitivity is contingent on the volume of visitors and the nature of the experience offered at the site, which varies from the approach to a castle or the view after a hilltop ascent. The EIAR posits that the impact on heritage features is not solely determined by their historical record but also by their experiential value, which can be affected by the presence of modern structures.

12.5.12. To assess these impacts, the EIAR describes the selection of Viewshed Reference Points (VRPs), each representing various receptor types such as local community views, major routes, and amenity and heritage features at varying distances and directions from the site. Locations such as Emo Court, Rock of Dunamase, and various community viewpoints are identified with specific VRPs ranging from 1.0km to over 17.9km from the proposed development site. The EIAR indicates that these VRPs are chosen for their capacity to represent the different types of views affected by the Proposed Development, including those from public domain areas within centres of population and those experienced by individuals on the move along major transport routes.

12.5.13. The EIAR details a cumulative baseline within the study area that includes:

- Gortahile Wind Farm: Comprising 8 existing turbines, located 11km southeast of the proposed development site.
- Cullenagh Wind Farm: Permitted with 18 turbines, located 3.8km west of the site.
- Pinewoods Wind Farm: Permitted, featuring 11 turbines, 5km west/southwest of the site.
- Bilboa Wind Farm: Permitted with 5 turbines, situated 14km southeast of the site.
- Lisdowney Wind Farm: Permitted, comprising 7 turbines, 16.5km south of the site.

12.5.14. **Potential Effects**

12.5.15. The EIAR posits that without the development, the landscape would largely remain unchanged, retaining its patchwork of vegetation and local road networks, scattered with rural residences, under the current forestry cycle.

12.5.16. The EIAR notes that landscape impacts have been assessed based on the sensitivity of the landscape and the magnitude of the physical effects within the development site, considering both the immediate surrounding landscape (<5km) and the broader scale (5-20km). The EIAR details the landscape value and sensitivity with reference to the Guidelines for Landscape and Visual Impact Assessment 2013. It is noted that landscape sensitivity generally correlates with the presence of upland areas and waterways.

12.5.17. For the Central Study Area (<5km), the EIAR describes a varied landscape character influenced by the transition from upland areas to lower-elevation topographies. It mentions the proposed development's site's location on the periphery of larger upland areas, characterised by a mix of forestry and pastoral land uses and varied topography. The EIAR indicates that, despite the Laois County Development Plan identifying high sensitivity in the central study area, it is not a rare or iconic landscape but holds value for rural productivity and economic sustenance, leading to a medium sensitivity rating.

12.5.18. For the Wider Study Area (5-20km), the EIAR posits that the landscape exhibits an extrapolation of patterns from the central study area, with sensitivity heightened by significant water features and populated centres. It notes that while the Barrow River and Grand Canal add high value and sensitivity, surrounding landscapes have lower sensitivity due to their utilitarian rural character. The EIAR determines that the wider study area shows more variation, and due to the presence of scenic and heritage features at discrete locations, the overall landscape sensitivity is deemed medium-low.

12.5.19. During construction, the EIAR states that the landscape within the Coolglass Wind Farm site will experience modest physical impacts. The construction activities, although intensive, are considered temporary and largely reversible, with the development footprint described as modest within the context of a managed commercial forestry setting. The most significant construction activities include the creation of access tracks, turbine hardstands, and an on-site substation, with the primary impacts arising from the removal of vegetation (circa 60-70ha) and the movement of heavy machinery. Mitigation measures will be implemented, including re-grading and re-seeding of temporary excavations, with advice from the project ecologist. Landscape effects are considered high-medium magnitude within the immediate site and surroundings, diminishing to medium and low at greater distances.

12.5.20. The operational phase of the wind farm is characterised by a change in the landscape character due to the introduction of the turbines. These tall structures with moving parts become a new, defining element, notably in areas where they were not previously a characteristic feature. According to the EIAR, while the proposed development will add to the scale and intensity of the built environment and may impact the sense of rural tranquillity, it is compatible with the existing landscape's scale and function. The turbines follow the pattern of existing forestry developments and do

not generate a sense of scale conflict within this rural, transitional upland setting. Therefore, the EIAR describes the magnitude of operational landscape impact as high-medium within the site, reducing to medium in the central study area and low beyond 5km from the site.

12.5.21. Upon decommissioning after the proposed 35-year lifespan of the project, the EIAR notes that the Coolglass Wind Farm site will be dismantled and the landscape reinstated to its prevailing conditions, with little evidence of the development remaining. This process will include the removal of turbine components and potential minor loss of roadside vegetation. Hard standings no longer in use will be removed, and the area will be reseeded to blend with the surrounding land cover. The EIAR determines that the magnitude of the decommissioning landscape impact will be minor, with the landscape returning to a state akin to its pre-development condition within a few years.

12.5.22. The EIAR describes a methodology incorporating landscape sensitivity and magnitude of impact to ascertain the significance of landscape effects. It asserts that the medium sensitivity of the site, in conjunction with the high-medium magnitude of construction impact, leads to a substantial-moderate significance of effect during the construction stage. However, this is temporal and primarily contained within a 1km radius. The EIAR further posits that the same medium sensitivity, when coupled with a medium magnitude of operational impact, translates to a moderate significance within the central study area, which attenuates to moderate-slight and then slight with increasing distance from the development.

12.5.23. The EIAR summarises visual effects based on assessments at 27 selected viewpoints. It indicates that the significance of visual impacts varies according to distance from turbines, receptor sensitivity, and magnitude of visual impact. For example, at VP1 with a high-medium sensitivity receptor and a negligible magnitude of visual impact, the significance is deemed imperceptible/neutral over the long term. On the other hand, closer viewpoints like VP9 and VP13, with medium and medium-low sensitivity receptors respectively, experience moderate negative impacts over the long term due to closer proximity and clearer visibility of the turbines. The overall visual impact significance does not exceed moderate at local receptors between the clusters. The EIAR concludes that while there are slight to imperceptible impacts across the wider study area, there are several viewpoints where the visual impact significance is

deemed moderate-slight, particularly where scenic designations increase the sensitivity of the view.

12.5.24. In summary, the EIAR posits that the proposed development will have temporary and localised substantial-moderate landscape effects during construction, with moderate effects in operational phase within the site and its immediate context. Visual impacts are mostly slight to imperceptible over the long term, with the highest negative impacts being moderate and predominantly confined to local receptors situated between the two clusters of turbines.

12.5.25. **Landscape and Visual Impact Assessment (LVIA)**

12.5.26. The Landscape and Visual Impact Assessment (LVIA) in Appendix 7.1 presents an analysis of the proposed development's visual impact within a 20 km radius from the edge of the array. The LVIA report posits that the existing landscape comprises rolling plateau of farmland and forestry in south County Laois, which includes varied landforms such as the Castlecomer Plateau and prominent landmarks that serve as orientating features. Key receptors for visual impact include settlements, national secondary routes, and regional roads, with the designated scenic views and routes outlined in the relevant County Development Plans mostly positioned outside of the Zone of Theoretical Visibility (ZTV) or directed away from the site, suggesting a minimal visual impact from many areas. The LVIA report indicates that the proposed turbine clusters are distributed across multiple elevated areas, potentially visible from localised points but not significantly impinging on the broader valued landscapes due to the large extent of the study area's lowland agricultural and upland character.

12.5.27. The LVIA report further details that despite the absence of highly sensitive landscape designations, the Wind Energy Strategy for County Laois largely precludes development in the proposed site, which contradicts national policy aimed at facilitating renewable energy, highlighted by recent decisions by An Bord Pleanála overriding local authority policies in favour of broader objectives. According to the LVIA, the preferred option from the analysis suggests that the least number of turbines would result in the lowest level of visual intrusion, reinforcing the need for development, if considered, to be sensitive to local topography, minimising the number of turbines and their visual impact, and maximising separation distance from dwellings, particularly in uphill views. The LVIA recommends that layout options should avoid

visual clutter and intensity and consider the elimination of turbines that disproportionately affect the sense of enclosure for nearby residents.

12.5.28. **Assessment**

12.5.29. I acknowledge the concerns raised by the third-party submissions, particularly the apprehension that the proposed wind farm's location within the scenic Slieve Margy region may significantly impinge upon the visual amenity and character of the area. I note the concerns raised by Laois County Council regarding the landscape and visual impacts of the proposed development. The Council highlighted potential discrepancies in the planning documents concerning turbine placement and the accuracy of their location, whereby their location contravenes the Laois County Development Plan and its Wind Energy Strategy. They have also pointed out issues with the validity of the landscape and visual assessment due to potential inaccuracies in the site layout depicted in Figures 7-1 and 7-2 of the EIAR. I also note the concerns raised by the Department of Housing, Local Government and Heritage - Development Applications Unit regarding the landscape and visual impact assessment within the EIAR for the proposed wind farm. The Unit has identified deficiencies in the report, criticising the methodology for its reliance on desk-based research and the absence of adequate fieldwork, which could potentially overlook the effects on archaeology and cultural heritage. They note that the visual impact assessment lacks comprehensiveness, with limited viewpoints and photomontages failing to fully represent the impact on national monuments and the wider landscape setting, contrary to the objectives of the Laois County Development Plan. The applicant’s response to these concerns are detailed in Section 10 above.

12.5.30. In consideration of the foregoing, my assessment of the proposed development must take into consideration the policy framework outlined within the Laois County Development Plan 2021-2027, which categorically designates areas for wind energy development, as well as areas where such development is explicitly prohibited. I have addressed this issue in Section 11.3 of this report. In view of the facts presented in Section 11.3 of this report and the policies within the Laois County Development Plan, it is my view that the proposed development's location within an area designated as 'not open for consideration' represents a fundamental conflict with the planning policy framework.

12.5.31. The Laois County Development Plan provides a considered approach to landscape protection, balancing the need for renewable energy infrastructure with the preservation of landscape character. Policy Objective CM RE 7, by demarcating 'Areas not open for consideration', underscores a commitment to safeguard certain landscapes from development impacts that would significantly alter their appearance or character. The specific policy objectives for Hills, Uplands, and Mountain Areas delineate criteria that the proposed wind farm cannot satisfy due to its visual impact and siting within a highly sensitive landscape, as detailed under objectives LCA 5 through to LCA 11.

12.5.32. Furthermore, the Wind Energy Strategy for County Laois reinforces these designations, indicating a clear intent to steer wind farm development towards less sensitive areas. The strategy's classifications are aimed at ensuring that development is compatible with the valued landscape characteristics of Laois County. The positioning of the proposed turbines, primarily within 'Areas not open for consideration', contravenes the Wind Energy Strategy for the county. This Wind Energy Strategy was subject to oversight by the OPR, and changes were subject to Ministerial Direction regarding (inter alia) turbine separation distances from neighbouring properties, and the Development Plan contributing to the realisation of national renewable energy targets (dated 7th March 2022).

12.5.33. It is my view that the overarching significance of the proposed development for renewable energy, economic development, and climate change mitigation cannot override the clear policy directives set by the County Development Plan. National energy policy and objectives, while critically important, must be realised in a manner that respects local landscape sensitivities and planning policies. To permit a development of this nature, which contravenes the explicit provisions of the Laois County Development Plan, would undermine the legitimacy of the Plan and the statutory planning process, setting an undesirable precedent for the future development of protected areas.

12.5.34. In light of these considerations and taking into account the landscape and visual impact assessment presented in the EIAR, I consider that the proposed wind farm, due to its location, would not only materially contravene the Laois County Development Plan but would also significantly impact the visual integrity and character of the landscape, which the Development Plan seeks to preserve. The Plan's policies

and objectives reflect a deliberate prioritisation of landscape protection in areas not deemed suitable for wind farm development, a policy intent that must be upheld.

12.5.35. Therefore, I conclude that, notwithstanding the potential benefits associated with renewable energy development, the proposal in its current location would materially contravene the Laois County Development Plan 2021-2027 and its appendaged Wind Energy Strategy by reason of its location in an area “not open for consideration” and thereby would be contrary to the proper planning and sustainable development of the area. I recommend, therefore, that the proposed development be refused permission on this basis.

12.6. Air Quality and Climate

12.6.1. Chapter 6 of the EIAR identifies, describes, and assesses the potential significant direct, indirect and cumulative effects on air quality, climate and carbon balance arising from the construction, operation and decommissioning of the Proposed Development.

12.6.2. Air Quality Impacts

According to the EIAR, the construction of the Coolglass Wind Farm would generate dust emissions, mainly from earthmoving activities, vegetation clearance, access track construction, and transport activities. Given the site's rural setting and the significant distances to the nearest residences (minimum 722 metres), the EIAR describes a ‘low’ to ‘negligible’ risk of nuisance dust affecting human health. The EIAR specifies potential soiling effects up to 100m from the construction site and PM10 deposition within 25m, but due to the 722m distance to the closest receptor, no significant effects are expected. The EIAR also notes the potential for short-term elevated PM10 and PM2.5 levels, yet these are not deemed significant given the temporary nature of construction activities and the existing mitigation strategies in place.

12.6.3. During the operational phase, the EIAR predicts no significant air emissions from the wind farm, positing a near-zero impact on local air quality due to the absence of continuous direct emissions. It highlights the infrequent use of a diesel generator for emergency purposes only, with emissions described as minimal. The EIAR also outlines the positive contribution of the wind farm to air quality, emphasising its role in offsetting emissions that would otherwise be produced by fossil fuel-based power

generation, thus contributing to the broader objective of reducing air pollution and promoting cleaner energy sources.

12.6.4. For the decommissioning phase, the EIAR details the likelihood of minimal air quality impacts. It details that while there will be dust and emissions from transport and machinery, these impacts will be temporary and mitigated through similar measures as used during construction, resulting in no long-term degradation of air quality.

12.6.5. Mitigation measures during construction, as detailed in the EIAR, include dust suppression techniques such as watering down exposed areas, covering transported materials to reduce particulate matter emissions, utilising gravel and wheel washing at exit points to minimise track-out, and the rapid re-vegetation of disturbed soil. The EIAR proposes specific construction management practices, including controlling vehicle movement and ensuring regular maintenance of construction machinery to reduce emissions, and proposes a dust management plan as part of the overall Construction Environmental Management Plan (CEMP), as detailed in Appendix 3.2.

12.6.6. The EIAR details that, with the application of the proposed mitigation measures, residual impacts on air quality are expected to be minimal and localised. During construction, any residual dust emissions are predicted to be slight and short-lived. In the operational phase, the report anticipates no residual impacts due to the lack of significant emissions. The EIAR reiterates the beneficial impact of the wind farm on regional and global air quality through the displacement of emissions from fossil fuel-based power generation, thereby aligning with environmental sustainability goals and contributing to cleaner air.

12.6.7. **Climate**

12.6.8. For the construction phase of the Coolglass Wind Farm and the associated Recreational Amenity Trail, the EIAR categorises the project as having medium vulnerability to climate hazards like extreme rainfall, floods, and storms. Such events are said to pose a direct risk to health and safety due to the increased potential for hazardous working conditions and environmental damage that may result from construction site runoff or erosion. Specifically, the construction of the wind farm and the TDR (Turbine Delivery Route) may be significantly impacted, with repercussions anticipated in engineering operations, and potentially affecting the project's reputation

due to any environmental incidents. For the construction along the proposed cable route, the EIAR details similar medium-level exposure to these climate hazards.

12.6.9. During operation, the EIAR identifies a medium-level vulnerability for climate exposure, such as extreme rainfall, floods, wind, and storms. For the wind farm itself and the Recreational Amenity Trail, lightning is noted as the primary severe weather hazard. The EIAR indicates that excessive wind could halt operations or damage equipment. For the underground cable route, the EIAR mentions the risk of soil erosion due to flooding, which could reveal and damage the cables.

12.6.10. In the decommissioning phase, the climate hazards are expected to impact the activities at the site and the TDR, similar to the construction phase, with concerns again focused on health and safety risks. Regarding the cable route, given its underground placement, the EIAR repeats its medium concern for floods potentially leading to exposure and damage, despite the fact that the infrastructure is planned to remain as part of the national grid.

12.6.11. Proposed Mitigation measures, as per the EIAR, focus on safety protocols related to lightning strikes. These measures include adopting lightning safety procedures and leveraging total lightning detection systems that alert to both cloud-to-ground and in-cloud lightning strikes. Additionally, the project will implement weather intelligence services, including real-time and forecast wind data, to anticipate and respond to inclement weather. On-site protocols are also recommended to manage the response to general and extreme weather conditions, encompassing pre-emptive actions and emergency procedures to safeguard personnel and infrastructure. The EIAR also outlines the implementation of SuDS for effective drainage management to mitigate potential water run-off and sediment transport issues.

12.6.12. **Carbon Balance**

12.6.13. The EIAR details that the construction phase of the wind farm, including the Turbine Delivery Route (TDR) and the Recreational Amenity Trail, would produce greenhouse gases from activities such as the use of construction machinery, on-site generators, and other construction processes. The Scottish Windfarm Carbon Assessment Tool projects that the construction and decommissioning processes will contribute to CO2 emissions, with the manufacturing and transportation of turbines accounting for a significant part of these emissions. These losses are further attributed

to the reduction in carbon fixation due to disturbed vegetation and soil organic matter, and the felling of forestry. These figures are calculated as 205,406 tonnes of CO2eq for the Vestas turbines (7.2MW) and 192,952 tonnes for the SG turbines (6.6MW).

12.6.14. During the operation phase, the EIAR posits a positive effect on the carbon balance, as the wind farm would displace considerable amounts of CO2 annually by generating renewable energy. For the Vestas and Siemens Gamesa turbines, the projected CO2 displacement over the wind farm's 35-year lifespan is 1,831,375 tonnes and 1,678,740 tonnes, respectively.

12.6.15. Upon decommissioning, there will be CO2 emissions associated with the dismantling and transport of turbine parts. However, the EIAR projects that the operational carbon savings will vastly exceed these emissions, leading to a net positive carbon balance over the lifetime of the wind farm.

12.6.16. Regarding mitigation measures, the EIAR indicates that no specific mitigation measures are necessary during construction, given that the long-term operational phase will significantly mitigate the initial carbon emissions. The report asserts how the wind farm aligns with the Climate Action Plan 2023, which aims to increase onshore wind capacity and reduce reliance on fossil fuels.

12.6.17. Regarding residual impacts, the EIAR indicates that the wind farm will result in a net positive impact on climate and carbon balance. It asserts that the minor increases in hardstanding surfaces will not adversely affect local vegetation or microclimate. At the macroclimate level, the wind farm would significantly reduce CO2 emissions compared to conventional energy sources, with no significant direct or indirect impacts on air temperature or climate predicted.

12.6.18. **Assessment**

12.6.19. It is my view that the proposed Coolglass Wind Farm, as detailed in the EIAR, would not have significant adverse effects on air quality and climate. Regarding air quality, the expected dust emissions during construction are mitigated by established measures such as dust suppression and site management, minimising their impact, especially given the distance from residential areas. Regarding climate impact, I consider that the operational phase of the wind farm would contribute to a net reduction in CO2 emissions. The displacement of fossil fuel-generated electricity with wind

energy aligns with national renewable energy goals and would significantly outweigh any potential carbon release from the construction and decommissioning processes. Therefore, it is my view that the proposed development would have a beneficial effect on climate over its lifespan, with no significant residual effects anticipated post-construction.

12.7. Telecoms and Aviation Safety

12.7.1. Chapter 13 of the EIAR identifies and describes the potential significant direct, indirect and cumulative effects of the proposed development on telecommunications and aviation safety.

12.7.2. Telecommunications

12.7.3. The EIAR states there will be no significant effect on telecommunications from the construction of the Coolglass Wind Farm. It assures there will be no electromagnetic interference impacts during this phase. The temporary works required for the Turbine Delivery Route, such as the trimming of trees, will be promptly reinstated, ensuring only short-term, insignificant impacts.

12.7.4. Regarding operational impacts, the EIAR states that extensive consultation with telecommunications and broadcasting operators confirmed no concerns about electromagnetic interference from the proposed development. With the nearest telecommunications mast located a sufficient distance from the nearest turbines (450m to the west of turbines 8 and 9, and 2.6km southeast of turbine 7), and the presence of a Protocol Agreement with 2RN, the EIAR concludes there will be no significant operational effects on telecommunications.

12.7.5. For decommissioning, the EIAR details no associated electromagnetic interference impacts. The infrastructure of the TDR will not be utilised, and the cable route will remain in situ, negating any decommissioning impacts on telecommunications.

12.7.6. The EIAR states that mitigation measures have been deemed unnecessary for the wind farm due to the absence of potential electromagnetic interference. However, a 2RN Protocol agreement is in place should any unforeseen signal disturbances occur post-construction.

12.7.7. The EIAR posits no residual effects on telecommunications from the wind farm, TDR, cable route, or recreational amenity trail. The EIAR's assessment remains applicable regardless of changes in turbine specifications within the assessed range.

12.7.8. **Aviation Safety**

12.7.9. The EIAR states that the construction phase of the Coolglass Wind Farm will not significantly affect aviation. It details that turbines, being potential obstacles for low-flying aircraft, will be constructed and placed without impacting flight paths. The EIAR notes that the nearest airports are at considerable distances, and neither the IAA nor the DAA have expressed concerns. The closest airport to the proposed development is Kilkenny Airport, c. 30.1km south of the site. Naas Airfield is located c. 42.5 km to the northeast, Birr Airfield is c. 49.4km northwest, and Waterford Airport is located c. 55.6km southwest of the site. For the Turbine Delivery Route, any temporary works will not bear relevance to aviation operators, as detailed by the EIAR, ensuring no significant aviation effects during construction.

12.7.10. During operation, the EIAR describes that the Coolglass Wind Farm's impact on aviation will mirror the minimal effects anticipated during construction. No significant issues have been identified by the Irish Aviation Authority or Department of Defence, contingent on the installation of required aviation lighting. The EIAR posits that the wind farm, with the compliance of mitigation measures, is not expected to adversely affect aviation operations.

12.7.11. The EIAR indicates that decommissioning activities will involve the removal of turbines, eliminating any aviation obstacles. Therefore, no significant effects on aviation are projected during this phase. The EIAR confirms that the cable route and recreational amenity trail will not bear any decommissioning impacts relevant to aviation.

12.7.12. The EIAR details that mitigation measures include providing as-constructed turbine coordinates and installing aeronautical obstacle warning lights, as required by aviation authorities. These actions, as per the EIAR, will mitigate any potential aviation impacts throughout the wind farm's lifecycle. Regarding residual impacts, the EIAR posits that there will be no significant residual effects on aviation from the proposed development. The EIAR posits that there will be no cumulative impacts on

telecommunications or aviation from the proposed development, in conjunction with other known developments within the study area.

12.7.13. **Assessment**

12.7.14. I note that the Department of Defence raised no objections to the proposed development, subject to conditions ensuring the safety of military aviation operations. These include the requirement for turbines to be illuminated with Type C, medium-intensity, fixed red obstacle lighting, visible in all directions and operational continuously, compatible with Night Vision equipment and emitting at near Infrared (IR) range around 850 nanometres. These measures, distinct from the civil aviation safeguards outlined by the Irish Aviation Authority, would ensure that the project will not have significant effects on telecommunications and aviation.

12.7.15. Having reviewed the documentation on file and the submissions received, it is my view that the proposed development would not have significant adverse impacts on telecommunications and aviation, subject to the conditions required by the Department of Defence and other relevant mitigation measures mentioned in the EIAR. The EIAR assures that no electromagnetic interference with telecommunications will occur, and the detailed protocol with 2RN effectively addresses any unforeseen signal disturbances. Moreover, adherence to the Department of Defence's specifications for obstacle lighting, ensuring turbine visibility for military aviation, alongside the absence of objections from the IAA, indicates the proposal's compatibility with existing aviation operations. Therefore, subject to conditions and the implementation of the mitigation measures, I conclude the proposed development would not incur significant adverse effects on telecommunications or aviation safety.

12.8. Land, Soils and Geology

12.8.1. Baseline Study Methodology

12.8.2. Land, Soils and Geology are addressed in Chapter 8 of the EIAR. The EIAR details the baseline study methodology encompassed a review of both published literature and information from a geophysical survey on one of the proposed turbine locations, along with a walkover survey of the site. The baseline study is underpinned by sources

including the EPA, GSI, and historical imagery from Google Earth, amongst others, and outlines the receiving environment's context, character, significance, and sensitivity to change. Focused within a geographical study area defined by the turbines and ancillary infrastructure with a 2 km offset, and temporal scope covering construction to decommissioning phases, the assessment follows IGI guidelines. It is a qualitative assessment, reliant on professional expertise and interpretation of extant data, assessing the impact on land, soils, and geology for the duration of the proposed development.

12.8.3. **Baseline Environment**

12.8.4. The EIAR details how contemporary imagery up to 2022 reveals extensive conifer forestry occupied much of the site. Other land uses in the study area consist of small agricultural fields, walking trails associated with Fossy Mountain, farmsteads, the small village of The Swan and scattered residential housing along the minor road network in the area. The EIAR refers to the Corine Landcover 2018, which categorises the region predominantly as coniferous and mixed forests interspersed with transitional and agricultural areas, underscoring the potential socio-economic effects of land take.

12.8.5. The EIAR states that the proposed Coolglass Wind Farm site predominantly features the Crosstown Association soil type, characterised as fine loamy with siliceous stones and having stagnic properties, thereby considered 'heavy' for agricultural use. It details that the surrounding 2km buffer zone contains varied soil types, such as the agriculturally favourable Elton soil and the Ballylanders soil over shale and slate bedrock. The area intended for the proposed wind farm is currently used for plantation forestry, with the immediate vicinity of the TDR comprising engineered fill or Made Ground. For subsoils, the EIAR indicates the presence of Namurian shale and sandstone till beneath the site, and a mixture of Quaternary subsoils, including limestone till and undifferentiated alluvium within the broader study area, all crucial for the wind farm's impact assessment on land and soil integrity.

12.8.6. The EIAR describes how the site is situated on the northern limb of the Castlecomer Plateau within the Leinster Coalfield, an upraised outlier primarily composed of Namurian age bedrock formations, including sandstone, shale, and various limestones. The EIAR details that the site's bedrock geology is critical for the wind farm's placement, with three proposed turbine locations over the Killeshin Siltstone,

four over the Bregaun Sandstone, one atop the Moyadd Coal, two on the Clay Gall Sandstone, and three on the Coolbaun Formation. Additionally, the EIAR notes that along the turbine delivery route (TDR), the bedrock comprises Carboniferous limestones and greywacke. Furthermore, the EIAR describes that while seven audited geological heritage sites are within the wider study area, none fall within the immediate site, mitigating concerns over potential impacts on designated geological heritage sites. Further details are provided on the ten geological heritages and their distinct geological features. These features, along with historical coal mining evidence, are noted for their instructional value and hydrogeological importance and, thus, are considered in further detail in later sections of the EIAR.

12.8.7. The EIAR details a geophysical investigation conducted by Apex Geophysics to assess the subsurface near the proposed turbine T8 location for the Coolglass Wind Farm, revealing primarily sandy gravelly clay, with variations in soil thickness and indications of potential mudstone/siltstone and sandstone rock beneath. It identifies three anomalous zones suggesting possible former mining activities: a probable shaft directly adjacent to the proposed turbine base, a likely adit to the west, and another possible shaft c. 15m to the south of the turbine base. Refer to drawings in Appendix 8.1, Volume III of the EIAR.

12.8.8. The EIAR indicates that the site for the proposed Coolglass Wind Farm has a low to moderate landslide susceptibility, with no recorded landslide events. Notable geohazards include potential radon emissions, as the area varies from moderate to high likelihood of elevated radon levels, particularly where bedrock is close to the surface. The EIAR states that historical coal mining could pose a risk only at the location of turbine T8, where a geophysical survey suggests the proximity of old shafts and an adit. Karst features identified by the GSI are not present within the immediate area but occur to the north, highlighted by "Orchard Spring" within the Clogrenan Formation.

12.8.9. **Potential Effects**

12.8.10. The EIAR outlines that the impact assessment follows methodologies recommended by various relevant national guidelines to appraise geological, hydrological, and hydrogeological implications. It quantifies the significance of environmental impacts using a sensitivity matrix. Direct effects would include the

felling of 54.36 hectares of coniferous forest at eleven turbine sites and associated linear deforestation for new access tracks. Indirect effects would stem from soil and subsoil disturbances caused by construction. The EIAR notes that the study area has a low landslide susceptibility, with no recorded events. As such, slope stability is scoped out from further assessment. The presence of radon is acknowledged, but its open-air dissipation diminishes health risks, unlike in enclosed spaces. Historical coal mining in the context of a potential geohazard is scoped into the assessment due to the potential for underground shafts within the site, in the area of T8 and the potential impact the proposed development may have upon these features, and to other receptors such as workers (human health) and the proposed structures.

12.8.11. During Construction, the EIAR states that the proposed development would require the felling of c. 54.36 hectares of coniferous forest for turbine installation, with the EIAR noting a site replanting strategy to ensure no net loss of forestry. The EIAR describes the land take for the meteorological mast as minimal, covering a 25m x 25m area, thereby changing the land use from an agricultural field to a technical site, with the significance of the effect being classified as 'Slight', for both the turbine locations and meteorological mast. The EIAR indicates that the TDR will maintain its existing function, and no further land take is projected for this component.

12.8.12. In terms of material movement, the EIAR specifies substantial earthwork activities for the construction of the Coolglass Wind Farm. It details that 38,070m³ of material will be excavated for turbine foundations. Additionally, for the creation of hardstanding areas, a total of 316,143m³ will be cut from the earth, with 230,753m³ of this being used as fill material for the same. The construction of access tracks will involve even more extensive earthworks, with a total cut of 385,748m³ and the same volume of 230,753m³ being repurposed as fill. The EIAR puts forward that the onsite borrow pit will largely satisfy the project's aggregate demands, estimated at 68,448 tonnes, thereby minimising the need for external resources. The EIAR posits that, if required, additional material may be sourced from local quarries.

12.8.13. Concerning indirect impacts during construction, the EIAR notes the potential for fuel and oil leaks during construction, which could affect soil and bedrock quality. However, the EIAR indicates that the risk is lessened by the brief duration and limited depth of the earthworks. Additionally, the EIAR posits a possible risk from historical coal shafts near turbine T8, identified by geophysical anomalies that appear to be filled

rather than open voids. The EIAR describes plans for further investigative drilling to confirm these features' conditions, ensuring any necessary engineering supports are implemented prior to the construction of turbine T8. No potential historical coal shafts (and adits) have been identified in the area of the other turbine locations.

12.8.14. The EIAR details the potential construction impacts on land, soil, and geology arising from the installation of the cable route and the creation of a recreational amenity trail. For the cable route, which will stretch 9.9km or 10.1km, depending on the option pursued, trenches of 600mm width and 1.2m depth will be excavated. The EIAR posits that this will result in a temporary disturbance to land use, with the effect significance assessed as 'Slight'. It is anticipated that all soil excavated for the cable trenches will be reused for backfilling, ensuring no soil is removed from the site, which limits the impact on local soils and subsoils to 'Slight'.

12.8.15. The EIAR indicates that the recreational amenity trail within the northern cluster will use existing trails, and thus does not constitute a material change in land use. The potential impacts on soils and subsoils from this work are expected to be negligible, and the effect on bedrock imperceptible, considering the minimal disturbance from improving existing trails. The EIAR also notes the potential for indirect impacts from fuel or oil spills during construction, but given the small scale and controlled environment of the trenching work, such risks are considered unlikely, and any spills are expected to be contained easily, posing an 'Imperceptible' risk to soils, subsoils, and bedrock. The EIAR's evaluation of initial construction impacts and their effect significance are detailed in Table 8-7.

12.8.16. During the operational phase of the proposed development, the EIAR posits that there will be no new direct effects on land, soils, subsoils, or bedrock resulting from the wind farm. Routine maintenance activities for turbines, associated infrastructure, and the meteorological mast could potentially lead to indirect effects from these elements. However, the EIAR notes that the magnitude of impact from possible fuel and oil leaks or spills during these maintenance activities is anticipated to be negligible. Consequently, the significance of these potential effects on the geological environment is considered imperceptible.

12.8.17. The same negligible impact is expected for the cable route and the recreational amenity trail established during the operational phase. The EIAR describes that no

new direct impacts will occur, and any routine maintenance is unlikely to significantly affect the soils, subsoils, or bedrock. The EIAR further notes the effect of any potential fuel and oil leaks, and spills are expected to be so minimal as to be rated as imperceptible for soils, subsoils, and bedrock geology alike. Table 8-8 in the EIAR consolidates this evaluation, reinforcing the negligible impact anticipated from the operational maintenance of the wind farm's infrastructure on the site's geology.

12.8.18. The EIAR describes the decommissioning phase of the Coolglass Wind Farm, positing negligible impacts on land, soil, and geology. The report details that, after a 35-year operational life, the turbines might be replaced subject to planning permission, or the site decommissioned. For decommissioning, it is proposed that the above-ground turbine components will be disassembled and removed for recycling, while the foundations will remain, covered over to allow natural re-vegetation. This approach mitigates the environmental nuisances of removal, like noise, vibration, and dust. The EIAR indicates that the access tracks may also be left, pending agreement with Laois County Council, promoting a return to forestry as the most suitable subsequent land use, thus classifying the significance of this effect as 'Slight'.

12.8.19. Regarding the cable route and amenity trail, the EIAR notes that underground cables will be cut back and left in place after ensuring no environmental risks persist. The decommissioning effect on soils, subsoils, and bedrock from this is also deemed negligible with a 'Slight' effect significance. For the amenity trail, no closure phase is proposed, and thus it is not further considered in the decommissioning context.

12.8.20. In terms of cumulative effects, the EIAR indicates that a thorough assessment has been carried out, examining all proposed and permitted developments in the vicinity of the wind farm site. This assessment is detailed in Appendix 1.2, 'Projects Considered in the Cumulative Assessment'. Additionally, the EIAR notes, based on the data from the National Planning Map Viewer (myplan.ie), that there are no other significant planned developments in the immediate area that have been recently approved, which might otherwise result in notable cumulative impacts on the land, soils, and geology of the local environment. Therefore, the EIAR posits that significant adverse cumulative effects are not anticipated in this context.

12.8.21. **Mitigation Measures**

12.8.22. During the construction phase of the Coolglass Wind Farm, the EIAR details that comprehensive mitigation measures will be implemented, including adherence to health and safety legislation and the Construction Environmental Management Plan (CEMP). The site will maintain fencing to protect the public and livestock, monitor stockpiles to prevent erosion and seek permission for compensatory reforestation. The EIAR posits minimising erosion and dust by limiting bare soil exposure, using temporary covers for stockpiled or exposed soils, and adhering to best practice environmental guidance, including the Waste Management Act.

12.8.23. For fuel and oil spill risks, the EIAR prescribes the use of double-skinned bowsers for refuelling, proper storage of hazardous substances, and diligent site management to prevent spills, with regular inspections and maintenance of equipment. The EIAR details contingency plans will be developed, and an emergency spill response kit will be held on-site. Specific to turbine T8, further site investigations will ascertain the nature of geophysical anomalies, with potential piling or other engineering measures planned if historical mining features are confirmed.

12.8.24. During the operational phase, the EIAR specifies that site operations will be managed in strict accordance with the Safety, Health & Welfare at Work Act (2005, as amended). The EIAR describes measures to reduce localised erosion and potential dust emissions, detailing that areas of bare or exposed soils and rocks will be minimally exposed by gradually restoring final and backfilled surfaces. Temporary vegetation cover may also be established on stockpiled soils or exposed surfaces to mitigate erosion risks further.

12.8.25. The EIAR outlines mitigation measures for handling potential fuel and oil spills, which include exclusively using double-skinned bowsers for on-site refuelling and storing all oils, greases, hydraulic fluids, and hazardous substances within covered, bunded containers in designated storage areas. To prevent spills, good site management practices will be enforced, involving regular inspections and servicing of machinery and equipment. The EIAR posits that the site will be managed and operated following the best waste management practices to comply with environmental management systems and planning consent. Additionally, contingency plans and

procedures for addressing potential leaks and spills will be established, along with an on-site emergency spill response kit.

12.8.26. During the decommissioning phase, the EIAR describes the enactment of mitigation measures in accordance with the Safety, Health & Welfare at Work Act (2005, as amended) to manage site operations. The EIAR indicates the evaluation and monitoring of stockpiles to ensure stability and reduce erosion and confirms that fencing will be upheld to protect the public and livestock. Additionally, the EIAR details that all refuelling will be conducted using double-skinned bowsers, and there will be no onsite storage of oils, greases, hydraulic fluids, or hazardous substances, which will instead be kept under cover in designated areas.

12.8.27. The EIAR details that stringent site management practices will be in place, including routine monitoring and servicing to mitigate the risk of spills, and emphasises that all actions will align with the best waste management practices and environmental compliance. The EIAR posits that, to lessen the impact of localised erosion and potential dust emissions, there will be a minimal exposure of bare soils and rocks, with temporary vegetation cover applied to stockpiled materials or exposed surfaces. This approach, the EIAR notes, will be implemented in accordance with environmental guidance from the EPA and other regulatory bodies under the amended provisions of the Waste Management Act.

12.8.28. Regarding residual effects during the construction phase, the EIAR states that the residual effects on land from land use change are anticipated to remain slight as the land use within the locality will be altered for both the turbines (and associated infrastructure) and the meteorological mast. The EIAR describes the residual effects for soils and subsoils through loss of material in excavation as slight as well, considering the onsite reuse of excavated resources. However, the irreversible loss of in-situ materials for the turbines and meteorological mast cannot be offset. The EIAR posits that with mitigation measures, the residual effect of potential impacts from fuel spills on soils and bedrock will reduce to imperceptible, although the slight residual effect of the coal mine shafts near turbine T8 remains, due to the high value of the receptor (workers during construction).

12.8.29. In terms of operations and decommissioning, the EIAR notes that the residual effect to soils and bedrock from indirect impacts such as leaks and spills would be

imperceptible. Regarding unplanned events, the EIAR posits that ground instability is not a significant risk due to the absence of peat cover at the site. The possibility of an unplanned event related to an unmapped coal shaft or adit is considered, but with gradual onset and likely visible warning signs, it is considered that the effects would not be significant, and remedial measures could be taken to avert any failure event.

12.8.30. **Assessment**

12.8.31. In consideration of the environmental impact of the proposed development on land, soil, and geology, it is my view that the EIAR has adequately considered the magnitude and sensitivity of the receiving environment to determine the significance of potential effects. The felling of c. 54.36 hectares of coniferous forest represents a significant direct change in land use. However, the EIAR's commitment to compensatory replanting elsewhere within the site mitigates the potential for long-term adverse effects. The nature of the soils, ranging from heavy agricultural soil to more construction-friendly subsoils due to their structural properties and their subsequent use in the project, indicates a sensitive interaction with local geology. The proposed reuse of excavated soils and subsoils onsite reflects a sustainable approach, minimising permanent land take and preserving the integrity of the local geology.

12.8.32. I consider that the potential indirect effects, particularly the risk of fuel and oil leaks during construction and operation, have been addressed with robust mitigation measures, including the use of double-skinned bowsers and designated storage areas for hazardous substances. These interventions are appropriate to the context of the site's characteristics - such as its past mining activities and the presence of certain soil types which might be sensitive to pollution. These measures, coupled with emergency response procedures, are appropriate and sufficiently robust, reflecting an appropriate approach to risk management.

12.8.33. Residual effects, which account for the potential alterations remaining after the implementation of mitigation strategies, are deemed to be slight or imperceptible. The EIAR posits that no new direct effects on land, soils, subsoils, or bedrock are expected during the operational phase of the wind farm, while indirect impacts of maintenance activities are expected to be negligible. It is my view that the mitigation strategies outlined in the EIAR are sufficient and effective.

12.8.34. In conclusion, it is my view that the analysis and the mitigation strategies detailed in the EIAR sufficiently demonstrate that the proposed development is designed to avert significant negative effects on land, soil, and geology. Compliance with best practice guidelines would ensure that any potential environmental consequences are mitigated to a level considered non-significant. Therefore, I conclude that the proposed development, subject to the implementation of the mitigation measures, would not result in significant negative effects on land, soil and geology.

12.9. Water

12.9.1. Water is addressed in Chapter 9 of the EIAR.

12.9.2. Baseline Study Methodology

12.9.3. The Baseline Study Methodology outlined in the EIAR employed a desk study, site walkovers, installation of groundwater monitoring boreholes, groundwater quality and level sampling and an analysis of the information gathered.

12.9.4. The desk study involved a review of existing data and relevant regional datasets to compile information on the geological, hydrogeological, and hydrological characteristics of the Coolglass area and its vicinity. Key sources of information included the Irish Soils Information System, Geological Survey Ireland's (GSI) Groundwater Data Viewer, and Environmental Protection Agency water maps. Site walkovers were conducted in Dec 2021 to directly observe and assess the hydrological and hydrogeological features present on the site.

12.9.5. As the proposed turbine T2 is located within the SO area of Kyle & Orchard Spring Water Supply Scheme, Kyle Spring, a groundwater monitoring well was installed in the vicinity of T2 to monitor groundwater quality and groundwater levels in the area. Drilling of borehole BH T2 took place on site on 12th August 2022. The well was drilled just outside the boundary of the outer protection zone for the Group Water Scheme supplying Stradbally, Ballylynan and Timahoe, to allow monitoring of the water quality of the aquifer supplying this scheme. Following the installation of the groundwater monitoring borehole, sampling was undertaken to evaluate groundwater quality and monitor levels over time.

12.9.6. To ascertain the baseline quality of surface waters around the proposed development site, targeted surface water quality monitoring was undertaken. Sampling locations were chosen to capture both upstream and downstream conditions of watercourses potentially affected by the development.

12.9.7. A flood risk assessment was conducted following flood risk guidelines from the OPW and DoEHLG guidelines. This included classifying the site according to flood zones and evaluating the potential for fluvial, pluvial, and groundwater flooding.

12.9.8. Consultations with key stakeholders, included the Geological Survey of Ireland (GSI), Environmental Protection Agency (EPA), Inland Fisheries Ireland (IFI), and the Office of Public Works (OPW). A review of EU Directives, national legislation, and local planning policies relevant to water resources was undertaken to inform the assessment.

12.9.9. **Baseline Environment**

12.9.10. The EIAR describes the surface water and groundwater conditions, noting that for the purpose of the assessment, the study area encompasses a 5km buffer around the proposed development site.

12.9.11. Regarding surface water drainage, the EIAR states that further to site walkovers, several streams and drainage channels were identified flowing through or adjacent to the proposed development. It further notes that there is extensive shallow drainage across the site. In terms of surface water quality, the report describes the undertaking of surface water quality monitoring and provides data on the biological water quality ratings from EPA-monitored locations downstream of the proposed development and the cable route, showing "unpolluted" status (Q4 rating) in most recent assessments (refer to Table 9-4, Page 17).

12.9.12. Regarding flood risk, the EIAR posits that the proposed development is not at significant risk of fluvial flooding from watercourses in the area, and there is no record of pluvial flooding or surface water ponding at the site.

12.9.13. The EIAR details information on groundwater hydrogeology, classifying the underlying lithologies into various aquifer classifications (refer to Table 9-7). It also notes the existence of karst features within a 5km buffer zone of the proposed development site. Orchard Spring is located c. 0.5km north of the site, and Kyle

(Toberading) Spring is c. 2.8km north of the Site. Clopook Cave is located 2.4 km north-east of the site, and Luggacurren Cave is located 1.1 km south of Clopook Cave. The EIAR details groundwater vulnerability as ranging from 'Low' to 'Extreme' and indicates that most of the proposed turbine locations are underlain by aquifers with an 'Extreme' groundwater vulnerability rating (refer to Table 9-8).

12.9.14. The EIAR indicates the water quality status of groundwater bodies under the Water Framework Directive, describing them as good status/quality and either not at risk or under review (refer to Table 9-9). It also provides information on public water scheme areas, noting the proximity of the proposed turbine T2 to the Source Protection Area of Kyle & Orchard Spring Water Supply Scheme.

12.9.15. The EIAR describes the installation of a groundwater monitoring well near turbine T2 and includes details of groundwater quality and level monitoring results. Groundwater quality results for borehole BH T2 are provided, indicating no exceedances of the laboratory detection limits for EPHs, TPHs, and VOCs, with inorganic and metals results falling within expected ranges for the local geology and land use (refer to Table 9-12). The only reported exceedance of the assessment criteria was an Iron concentration of 2.24 mg/l, exceeding the Drinking Water Regulations limit and EPA IGVs limit of 0.2 mg/l.

12.9.16. Regarding Access Tracks and the Recreational Amenity Trail, the EIAR notes that the proposed wind turbine layout will utilise a total of five crossings, including one new crossing over the Fallowbeg Upper stream. The underlying groundwater vulnerability along the proposed routes for the access tracks and recreational amenity trail ranges from moderate to extreme, with the majority of the routes being in areas of extreme vulnerability. This is characterised by the presence of bedrock at or near the surface.

12.9.17. For the cable routes, the EIAR indicates that two options have been assessed, with several watercourse crossings identified for each. The cable route options will cross several watercourses, and the EIAR details that no instream works are proposed (refer to Table 9-6). It describes existing crossings that will either be culverted or open-trenched to facilitate the cable installation, adhering to specifications in accordance with EirGrid requirements.

12.9.18. Regarding Surface Water, the EIAR states that the site and cable route area fall within the boundary of two catchments: the Barrow catchment (ID 14) in the north with tributaries of Stradbally River and Crooked River; and the Nore catchment (ID 15) in the south with tributaries of the river Owveg to the west and River Clough to the south of the site. The water bodies within these catchments are generally classified as having 'Good' status under the Water Framework Directive (WFD), with the exception of Clogh_010, which is classified as 'Moderate' and 'At Risk'.

12.9.19. The EIAR details that the closest ecological designated site is the Timahoe Esker pNHA located 83m from the Option 2 Cable Route at the nearest point. The Option 1 cable route and the TDR are located 5km west of the Ballyprior Grassland SAC. The report also indicates that the proposed development and cable route do not traverse any designated protected area, but there are sites within 5km of the proposed development which could have potential hydrological and hydrogeological connections due to being within the same surface water catchment or having direct downstream connection. Designated sites with potential hydrological connection include the River Barrow and River Nore SAC and Timahoe Esker pNHA. Designated sites which could have potential hydrogeological connections (due to the bedrock type and presence of karst features) include the River Barrow and River Nore SAC, Timahoe Esker pNHA, Ballyprior Grassland SAC (002256), Timahoe Esker pNHA (000421) and Clopook Wood pNHA (000860).

12.9.20. The EIAR identifies water environment receptors such as water courses across the site tributaries of the River Barrow and River Nore; locally important and poorly productive bedrock aquifers beneath the site; the Orchard Spring Public Water Supply; the Swan Water Supply Scheme; and local groundwater supply wells in the surrounding area. The significance and sensitivity of these receptors are assessed and rated according to the existing guidance and are detailed in Table 9-15 as follows:

- Water Courses at the Site: The water courses at the site include local streams that are tributaries of the River Barrow and River Nore, which have a 'Medium' significance and sensitivity rating. They possess medium quality or value on a local scale and are in hydraulic continuity with the site through groundwater-surface water interactions.

- Designated Sites: Sites within a 5km radius, such as Timahoe Esker pNHA and Ballyprior Grassland SAC, are considered 'High' significance due to their potential hydrogeological continuity with the site, indicating a high quality or value on a local scale.
- Bedrock and Gravel Aquifers Beneath the Site: The bedrock aquifers, classified as locally important and poorly productive, and a small section of the cable route underlain by regionally important karstified aquifer, receive a 'Medium' significance and sensitivity rating. These aquifers are in hydraulic continuity with surface water courses through groundwater-surface water interactions.
- Orchard Spring Public Water Supply: The public water supply is rated as 'High' significance due to it being a locally important potable water source, supplying over 1000 homes (Section 9.6.12, Table 9-15).
- Local Groundwater Supply Wells: These wells, used for agriculture and/or domestic supply, have a 'Low' significance and sensitivity rating, indicating a low quality or value on a local scale, particularly as they are not within a source protection area and supply fewer than 50 homes.

12.9.21. **Potential Effects**

12.9.22. The EIAR details the potential effects on water during the construction phase of the proposed development. The EIAR states that localised and short-term contamination of surface water streams could occur during the construction and operational phases, potentially affecting the ecology and quality of downstream water bodies. Moreover, there is a possibility of localised groundwater contamination. However, the EIAR puts forward that adherence to good environmental practices and the implementation of mitigation measures set out in Section 9.8 of the EIAR would prevent such occurrences.

12.9.23. The EIAR details potential impacts during construction, which include tree felling over 54.36 hectares, upgrading and provision of new site tracks, construction of drainage infrastructure, and the creation of turbine foundations and hardstanding areas. These are anticipated to accompany the construction of the substation and internal cable network, as well as connection works to the National Grid. The EIAR notes how the Construction and Environmental Management Report (CEMP)

contained in Appendix 3.2 of Volume III of the EIAR will guide these activities, aiming to protect the environment and minimise impacts.

12.9.24. Specifically, the EIAR describes potential impacts like erosion and sediment release due to earthworks, which can lead to increased turbidity in watercourses, which in turn could affect the water quality of downstream water bodies. The EIAR notes the risk of pollution from construction activities that could lead to contamination from substances such as oil, fuels, and cement, potentially degrading water quality and affecting private water supplies.

12.9.25. The EIAR also details the potential for fluvial flooding due to tree felling, access track construction, and the creation of new hard surfaces, which could lead to a slight increase in surface water run-off and consequent soil erosion and sediment release. Although the risk of increased downstream flooding is considered low, sediment erosion on site could cause blockages in drainage infrastructure, potentially leading to minor surface water flooding.

12.9.26. Regarding groundwater, the EIAR indicates that dewatering activities for borrow pits and other excavations could impact local groundwater levels. Nevertheless, significant impacts on groundwater levels are not anticipated due to the local hydrogeological regime. Any necessary groundwater inflows may be pumped, leading to a temporary localised drawdown of the water table and discharge into surface water channels, which could impact groundwater levels and wells.

12.9.27. During the operational stage of the Coolglass Wind Farm, the EIAR states that routine maintenance activities are anticipated, which may include maintaining access tracks, drainage, and wind turbine maintenance. The EIAR details that mitigation measures, in line with those set out in the CEMP, will be employed to avoid potential effects during these maintenance works. The EIAR states that there will be a limited number of vehicles required onsite for routine maintenance and operational activities, and twice a year, each turbine will undergo a scheduled service. The operation of the wind turbines will be monitored remotely, and any storage of fuels/oils onsite will be limited and contained within bunded areas to prevent leakage.

12.9.28. The EIAR indicates that there is not expected to be any excavation or stockpiling of material during the operational phase, thereby reducing the potential for erosion and sedimentation effects. However, should any excavation be required, for

instance, for maintenance of tracks, it is likely to be limited and will be managed with the same safeguards used during the construction phase.

12.9.29. The EIAR notes the potential for erosion immediately post-construction, where newly excavated drains and track dressings may be prone to erosion before vegetation has matured. The design of the drainage system, including sediment traps, is expected to mitigate the increased delivery of sediment to natural watercourses. Potential effects from sedimentation or erosion during the operational phase are considered most likely to occur from linear features on steeper slopes, where velocities in drainage channels are higher. Measures will remain and be maintained to slow runoff velocities and prevent erosion until vegetation becomes established.

12.9.30. The EIAR posits that should any non-routine maintenance be required at the sections of track crossing wet areas, there would be a potential for erosion and sedimentation effects due to the presence of disturbed material. Good practice measures detailed for the construction phase would then be required on a case-by-case basis. The EIAR also describes the potential impacts of the presence (rather than construction) of access tracks, hardstanding, cabling, and crane hardstanding on infiltration and groundwater conditions, as well as sub-surface flow paths. Drainage required to service new sections of access track could potentially alter recharge patterns.

12.9.31. During the decommissioning phase, the EIAR states that the process will involve the disassembly of above-ground turbine components by cranes, with the components then removed off-site for recycling. It details that the turbine foundations are intended to be left in situ and allowed to naturally re-vegetate, presenting this approach as more environmentally sensible due to the avoidance of potential environmental nuisances such as noise, vibration, and dust that would result from removing the concrete foundations. The EIAR states the internal site access tracks will also be left in place, subject to agreements with Laois County Council and the relevant landowners. Additionally, it indicates that the on-site substation, upon completion, will be integrated into the national electricity network and maintained by ESB Networks or EirGrid.

12.9.32. The EIAR states underground cabling will be cut back and left in place. It notes that the potential impacts during decommissioning are similar to those during the

construction phase, hence the mitigation measures outlined for the construction phase will be applicable during decommissioning as well. The EIAR describes the intention to agree on a detailed decommissioning plan in advance of construction with Laois County Council. This plan is included within the CEMP in Appendix 3.2 in Volume III of the EIAR.

12.9.33. The EIAR posits that in a worst-case scenario, localised and short-term contamination of surface water streams and potential localised groundwater contamination could occur during construction and operational phases, impacting downstream ecology and water quality. However, it details that adherence to good environmental practices and the mitigation measures outlined in Section 9.8 of the EIAR are expected to prevent such occurrences.

12.9.34. **Mitigation Measures**

12.9.35. The EIAR details various mitigation measures designed to safeguard water resources throughout the construction, operational, and decommissioning phases of the project. Addressing Mitigation by Avoidance, the EIAR emphasises design modifications to mitigate impact on watercourses, involving a 50m buffer zone from any watercourse for construction activities, including fuel storage and construction compounds. It details how the cable route has been altered to avoid streams leading into significant rivers like the Nore and Barrow, thereby eliminating the crossing of marked streams by turbine access tracks.

12.9.36. Regarding Mitigation by Prevention and Reduction, the EIAR describes measures built into the project's design to comply with legislation and best practice construction methods aimed at preventing water pollution. Examples include storing potential pollutants in fully bunded tanks and controlling runoff from hardstand areas.

12.9.37. Regarding mitigation during the construction phase, the EIAR details the adoption of best-practice construction methods to prevent water pollution, along with measures for sediment management and control of runoff rates and volumes. A Construction Environmental Management Plan (CEMP) has been prepared, outlining the responsibilities of all personnel in environmental control. Construction activities will align with guidance with CIRIA Document C741 ‘Environmental Good Practice on Site’ (CIRIA, 2015), ensuring groundwater encountered is managed in line with best practice guidelines. Other proposed mitigation measures include:

Site Drainage Mitigation Measures:

- Creating temporary drainage channels and features to manage surface run-off.
- Implementing sediment traps and settlement ponds to treat water before discharge.
- Ensuring the containment of potentially polluted water.

Good Practice Measures:

- Measures as included in the CEMP (Appendix 3.2 of Volume 3 of the EIAR) for dealing with pollution/sedimentation/flood risk incidents will be developed prior to construction.
- Conducting regular environmental audits to maintain compliance with the EIAR.
- Training staff in environmental management to prevent sediment-related pollution.
- Utilising silt fences and other sediment control devices to minimize erosion.

Management of Sediment and Surface Waters:

- Applying Sustainable Drainage Systems (SuDS) to manage construction run-off.
- Attenuating runoff to reduce peak flows and volumes.
- Treating runoff to lower pollutant levels before entering watercourses.

Foul Drainage Mitigation Measures:

- Ensuring proper containment of effluent to prevent any risk of environmental contamination.
- Designing and implementing systems that meet EPA guidelines.

Pollution Risk Mitigation Measures:

- Refuelling will take place at least 50m from watercourses, and where possible it will not occur when there is a risk that oil from a spill could directly enter the water environment.
- Using secure storage for fuels and chemicals to prevent spills.
- Establishing spill response protocols and training for site personnel.
- Installing drip trays and designated washout areas for vehicle and equipment maintenance.

Fluvial Flood Risk Mitigation Measures:

- Designing drainage systems to cater for expected storm events.
- Using check dams in cable trenches to manage flow rates.
- Regular maintenance to prevent blockages in drainage systems.

Water Quality Monitoring Measures:

- Conducting baseline studies to assess pre-construction water quality.
- Developing a Water Quality Monitoring Plan (WQMP) as part of the Construction Method Statement (CMS), which will be submitted to the appropriate planning authorities prior to construction and development.
- Implementing regular water quality surveillance during construction.
- Comparing ongoing water quality data to baseline to ensure standards are maintained.
- A Private Water Supply (PWS) Action Plan will be developed and include details regarding all water monitoring and reporting, pollution incident reporting and emergency mitigation measures to address a temporary or permanent material change in either the quality or quantity of an existing private water supply.

Emergency Response Measures:

- Preparing an Environmental Incident and Emergency Response Plan.
- Training site personnel on immediate actions to take in case of a pollution incident.
- Establishing clear communication channels for reporting and responding to environmental emergencies.

12.9.38. During the operational phase of the proposed development, the EIAR outlines several mitigation measures to manage the environmental impact:

- The infrastructure and tracks on the site will undergo routine maintenance to ensure their integrity and functionality. This includes the upkeep of access tracks and the proper functioning of drainage systems.
- If on-site maintenance necessitates construction-like activities, the project will adhere to the mitigation measures outlined in the Construction and Environmental Management Plan (CEMP) to mitigate potential effects.

- Any necessary excavation, likely for track maintenance, will be minimal.
- In cases where excavation is necessary, the same environmental safeguards and procedures implemented during the construction phase will be applied.

12.9.39. During the decommissioning phase, the EIAR specifies the mitigation measures as follows:

- Decommissioning will adhere to the CEMP to prevent pollution incidents, employing practices such as situating construction activities away from watercourses.
- Safe areas for stockpiling or storage of materials will be designated to prevent any watercourse pollution.
- Adherence to good practice measures will prevent the transport of materials into nearby watercourses.
- Specific sediment control measures like cut-off drainage, sediment traps, lagoons, and flocculation stations will be implemented based on the final designs.
- Temporary drainage systems around turbine working areas, construction compounds, and borrow pits will be necessary to manage surface flows.
- Dewatering during the excavation of turbine foundations may be needed and will be conducted to ensure minimal impact on the water table.
- The lowering of the water table during excavations is expected to be a local and temporary condition, with no ongoing dewatering required post-construction.

12.9.40. The EIAR posits that with the mitigation measures implemented at the site, there will be a reduction in the potential impact on surface water quality in the bedrock aquifer from "moderate" to "slight" due to accidental fuel leakage or spillage during the operational stage. It details a similar reduction from "moderate" to "slight" for surface water quality concerning sediment release and accidental spillage of oils, fuels, and cement during the construction phase. The EIAR notes that the impact on groundwater quality from such spillages will diminish from "slight - moderate" to "slight – not significant," as well as the impact on groundwater quality at Public Water Supply sources.

12.9.41. The EIAR indicates that the cumulative effect of these measures will lower the significance of all potential impacts during the construction and operational phases to "slight" or lower for water environment receptors. Furthermore, the EIAR states that the proposed development will not lead to a deterioration of the status of any surface or groundwater body under the Water Framework Directive, nor will it prevent the achievement of good status.

12.9.42. Table 9-17 of the EIAR identifies several developments in proximity to the proposed wind farm project, assessing their potential cumulative impact on groundwater and surface water quality and quantity. These include:

- Michael Johnson Quarry Restoration (Reg Ref 20247 Laois, granted 19/11/2020), situated 4km from the proposed development, has the potential to impact water quality and quantity. The construction phase of the proposed wind farm may overlap with the quarry's operational (restoration) phase. However, the cumulative effect is considered low and short-term (less than 3 years), and no mitigation is required.
- Bilboa Wind Farm (Reg Ref Laois 20281/Carlow 20282, granted 15/02/2022), 17km from the site, with development including underground cables and associated works within Laois and Carlow County Council boundaries respectively, may have construction activities coinciding with those of the proposed wind farm. The cumulative effect, similar to the quarry, is deemed low and of short-term duration with no mitigation required.
- Cullenagh Wind Farm (Reg Ref PL11.232626/13268 Laois, granted 14/6/2014), located 3.5km from the proposed development, includes the construction of 18 wind turbines with associated infrastructure. Given its proximity, the EIAR indicates the construction phases of both wind farms may overlap, but the predicted cumulative effect is low and short-term, with no mitigation needed.
- Bord Na Móna Powergen Ltd. Renewable Gas Facility (Reg Ref ABP-309293-21/19530 Laois, granted on appeal on 23/05/2022), positioned 14km away, could coincide with the proposed wind farm's construction phase. Nonetheless, due to the distance, the cumulative effect is assessed as low and short-term, with no mitigation measures required.

- Lagan Materials Spink Quarry (Reg Ref 21700 Laois, under appeal APB-314760-22), 3km from the proposed development, involves continued quarry operation and deepening. Similar to other cases, the proximity suggests a possible overlap in construction stages, but with a low and short-term cumulative effect, not necessitating mitigation.
- Pinewoods Wind Farm (Reg Ref PL11.248518/16/260 Laois, granted 03/09/2021), 11km from the proposed wind farm, and associated construction may coincide with the proposed development. As with other developments, the cumulative effect is expected to be low and short-term without the need for mitigation.

12.9.43. **Assessment**

12.9.44. In consideration of the above, it is my view that the methodology applied, including desk studies, site walkovers, installation of monitoring boreholes, and consultation with key stakeholders, provides a comprehensive baseline assessment of the water environment in accordance with the 2014 Directive.

12.9.45. Regarding the likelihood of environmental effects, the EIAR identifies several potential impacts on both surface and groundwater resources. Given the nature of the construction and operational activities outlined, it is plausible that, in the absence of any control measures, effects such as sediment release, fuel spillage, and alterations to the water table could occur. However, the significance of these potential effects has been substantially mitigated through the EIAR's proposed mitigation measures. These include the establishment of buffer zones, the use of Sustainable Drainage Systems (SuDS), continuous monitoring throughout the construction, operational, and decommissioning phases and strict adherence to the Construction and Environmental Management Plan (CEMP). The proposed mitigation measures would effectively avoid or prevent potential impacts on water quality. The residual impacts would managed and minimised to a level where they are not considered significant.

12.9.46. It is my view that the cumulative impact of the proposed development, when considered alongside other existing or approved projects in the area, would not be significant. The EIAR sufficiently describes the cumulative effects within the project and with other projects, and I am satisfied that there will be no significant combined effects on the water environment.

12.9.47. I acknowledge the concerns raised in the submissions received regarding the potential impacts of the proposed wind farm on hydrology and the water supply, particularly in relation to the Water Source Protection Zone, critical water sources such as the Kyle and Orchard Springs, and the Swan Public Water Supply Scheme. It is my view that the EIAR has addressed these concerns through a comprehensive baseline study methodology that includes groundwater monitoring and surface water quality analysis. Furthermore, the EIAR outlines robust mitigation measures designed to safeguard water resources, including the installation of groundwater monitoring boreholes and adherence to a Construction and Environmental Management Plan. The EIAR provides for continuous monitoring and the application of best-practice construction methods to manage and mitigate the risk of contamination. Additionally, it includes a detailed assessment of potential effects, with a focus on protecting habitats and water quality in compliance with relevant EU directives, and proposes continuous monitoring to ensure that the integrity of local water schemes and ecosystems is maintained.

12.9.48. The Construction and Environmental Management Plan (Appendix 3.2) includes specific protection mitigation measures focused on protecting water quality and resources during the construction phase. In line with best practice construction techniques, the CEMP focuses on managing sediment and surface water runoff, incorporating Sustainable Drainage Systems (SuDS) where suitable. An Environmental Incident and Emergency Response Plan will be put in place, detailing rapid response and reporting procedures for potential pollution events. Water quality would closely monitor on-site to evaluate the impact on surface water catchments, with increased monitoring frequency during construction to ensure adherence to baseline conditions. A Water Quality Monitoring Plan will be established, which specifies monitoring prior to, during, and after construction, as well as outlining protocols for sampling and analysis. In the event of changes to private water supplies, a Private Water Supply Action Plan will be developed, providing comprehensive details on monitoring, pollution incident reporting, and emergency mitigation measures. The CEMP also sets forth drainage and surface water management strategies, ensuring proper site drainage, management of sediment and surface waters, and control of foul drainage. Pollution prevention measures include strict refuelling protocols, controls to handle spillages and secure storage for potential pollutants. Measures to mitigate dust

would be implemented to minimise its dispersion and consequent impact on nearby water bodies. During the construction phase, special attention is given to borrow pits and access tracks, with managed excavation materials and strategies to prevent sediment from entering watercourses.

12.9.49. In conclusion, I am satisfied that the potential for significant adverse impacts on water would 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 water.

12.10. Noise and Vibration

12.10.1. Methodology

12.10.2. Noise and Vibration are addressed in Chapter 10 of the EIAR. As an introduction, the EIAR provides a comprehensive description of noise and vibration impacts from wind farm. The EIAR makes reference to BS 5228-2, BS 6472:1992, the Draft Revised Wind Energy Development Guidelines (2019), ETSU-R-97 guidelines, and various other studies and reports in its description. It details that construction will generate noise from activities such as turbine foundation construction, erection of turbines, excavation, and construction of substation buildings. It posits the threshold for human perception of vibration, as per B.S. 5228-2, is within 0.14mm/s to 0.3mm/s and typically, construction vibration will not be perceivable beyond 500m, thus not affecting residents. Operational noise from wind turbines is noted to be primarily aerodynamic, which can be minimised by design and is generally masked by natural wind sounds. Amplitude modulation noise is described but considered atypical with no current methodology for prediction; hence it is not further assessed. The EIAR posits that low-frequency noise and infrasound, often a concern, have been studied and found to not be perceptible or harmful to health at the distances involved in this project. It further indicates that modern turbines are unlikely to produce tonal noise and that vibration levels are negligible at 700m from the closest receptor to the proposed turbines, with no specific vibration assessment required. Decommissioning noise and vibration are expected to be lower than construction phases.

12.10.3. The EIAR references the Draft Revised Wind Energy Development Guidelines (2019), which consider special audible characteristics, proposing a 'Relative Rated Noise Limit (RRNL)' and a penalty scheme for amplitude modulation of up to 5 dB, but state that there is no evidence that wind turbines generate perceptible infrasound and normally no excessive tonal or low frequency element in wind turbine noise.

12.10.4. The EIAR's methodology details relevant guidelines referenced in the assessment including the Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022), Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (2016), amongst other standards and guidelines. The EIAR's methodology for assessing noise and vibration impacts focuses on Noise-Sensitive Receptors (NSRs) within proximity during construction, decommissioning, and operation. It posits that NSRs, classified as dwellings and other sensitive properties, are evaluated for noise exposure exceeding 35 dB LA90,10min, with operational noise studied within an area where this noise level from the proposed development is predicted. The EIAR puts forward that, consistent with the IOA Good Practice Guide, assessments are not universally necessary for all NSRs; instead, a representative NSR can be used to reflect the potential worst-case impact from the development. Table 10-1 presents the location of Noise Sensitive Receptors in the study area.

12.10.5. The EIAR sets forth a methodology for assessing noise and vibration impacts at the Coolglass Windfarm, adhering to British Standard BS 5228-1 Annex E for construction noise and the 2006 Wind Energy Guidelines supplemented by ETSU-R-97 and IOA GPG for operational noise. It states that in the absence of statutory Irish guidance, construction noise impacts are 'significant' if levels exceed 65 dB LAeq over a sustained period, whereas operational noise effects are 'significant' if they surpass the noise limits derived from the 2006 Guidelines. The EIAR posits that for operational noise, a lower limit of 45 dB(A) or a 5dB(A) increase above background noise is generally suitable, yet in quieter areas with background noise under 30 dB(A), a range of 35-40 dB(A) for LA90,10min is recommended, with a night-time fixed limit of 43dB(A) to protect against sleep disturbance. Significance is determined using professional judgement against these criteria, with the premise that medium to high sensitivity is attributed to dwellings, and the findings from the public consultation process are integrated into the project design and EIAR narrative.

12.10.6. **Existing environment**

12.10.7. The EIAR details the existing environment's baseline noise survey for the proposed development, stating that a comprehensive survey was conducted beyond the two-week period recommended by IWEI Best Practice Guidelines and the IOA GPG. It describes how sound level meters were placed to accurately reflect noise exposure at Noise-Sensitive Receptors (NSRs) and were calibrated in line with IOA GPG standards. The EIAR also notes that, where direct monitoring wasn't feasible, data from comparable locations were used as a proxy for NSRs, ensuring that the assessment did not unnecessarily extend to distant NSRs. Additionally, the EIAR indicates that all technical equipment, including rain loggers, adhered to stringent calibration standards with no significant calibration drift, corroborating the reliability of the noise data captured, which was logged continuously over the assessment period using UTC time reference.

12.10.8. In analysing the baseline data for the proposed wind farm, the EIAR reviews the relationship between background noise data, wind speed, and rainfall to ensure accuracy. Data affected by external noise sources like rainfall or the bird dawn chorus was excluded to maintain the integrity of the findings. The EIAR notes the exclusion of data during specific events, like the Electric Picnic Festival, to prevent atypical noise from skewing results. It also employs a polynomial fit to best represent the prevailing background noise levels, applying the lowest derived noise level across wind speeds in accordance with the IOA GPG. These levels, outlined in Table 10-4, are restricted to the range of adequately covered data points to avoid extrapolation beyond the measured data's reliability.

12.10.9. The EIAR describes a framework for noise limits at the proposed development based on the 2006 Wind Energy 4Guidelines, which set a dual-threshold system tying noise limits to wind speed: a lower fixed value, and a value derived as the prevailing background noise plus 5 dB(A). For nighttime, it describes a fixed limit of 43 dB LA90 to prevent indoor sleep disturbance, and during daytime in low noise environments where background noise is under 30 dB LA90, it suggests a lower limit of between 35 and 40 dB LA90. The EIAR puts forward a fixed daytime noise limit of 40 dB LA90 at wind speeds where background noise is below 30 dB LA90, and 45 dB LA90 otherwise, stating that these limits—5 dB more stringent than EPA Guidance Note for Noise (NG4) criteria. The EIAR submits this strikes a balance between power

generation and noise impact, in accordance with best practice and similar to conditions applied in other planning permissions by An Bord Pleanála. This assessment, including specific noise limits for various wind speeds and NSRs, is detailed in Table 10-5 and illustrated in Appendix 10.4, Vol. III of the EIAR.

12.10.10. **Potential impacts**

12.10.10.1. <u>During Construction</u>

12.10.11. The EIAR details predicted construction noise levels for various activities, utilising scheduled sound power data from BS 5228 and considering operational conditions. Key activities and their respective predicted noise levels at the closest properties include:

- Construction of temporary site compounds: 51 dB LAeq at a distance of 530 meters to the nearest receiver NSR06.
- Construction of site tracks: 71 dB LAeq at 50 meters distance to receiver NSR13, indicating one of the highest potential noise impacts due to proximity and activity type.
- Construction of Sub-Station: 46 dB LAeq at 520 meters to the nearest receiver NSR05.
- Construction of crane hard standings: 44 dB LAeq at 700 meters distance to NSR02, representing one of the lowest predicted noise impacts.
- Construction of turbine foundations: 52 dB LAeq at 720 meters distance to NSR02.
- Excavate and lay site cables: 48 dB LAeq at 470 meters to NSR01.
- Erect turbines: 50 dB LAeq at 700 meters distance to NSR02.
- Reinstate crane bases: 45 dB LAeq at 700 meters to NSR02.
- Lay cable to sub-station: 50 dB LAeq at 650 meters to NSR06.
- Borrow Pit Quarrying: 70 dB LAeq at 200 meters distance to NSR10, showcasing significant potential noise impact due to both high decibel levels and proximity.

12.10.12. The EIAR indicates that noise levels are calculated without assuming any screening effects and considering ground cover as 50% hard/50% soft.

12.10.13. The EIAR notes that when the predicted noise levels from construction activities are compared with the background noise levels and significance criteria previously established, it emerges that the majority of the noise impacts during construction are projected to be non-significant. Specifically, the EIAR indicates that the high predicted noise level for site track construction near NSR13, at 71 dB LAeq, is likely to be a temporary condition when the activity is at its closest to the receptor. This is considered a worst-case scenario, and the effects are expected to diminish quickly as the construction moves away, rendering the overall impact transient and thus non-significant. However, the EIAR details that an exception to this general finding of non-significance is the activity of borrow pit quarrying. The noise level here is forecasted to be 70 dB LAeq at a distance of 200 meters from receptor NSR10, which surpasses the significance threshold. Consequently, the EIAR posits that appropriate mitigation measures should be implemented to manage the noise impact for this specific construction activity.

12.10.14. Regarding site traffic, the EIAR indicates that construction traffic, including additional light goods vehicles, will contribute to noise levels at surrounding properties. The peak noise is expected during the morning and evening as workers arrive and depart, but this is not anticipated to be a continuous noise source. The EIAR posits that the noise impact from construction personnel traffic movements will be low and consistent across all potential turbine types considered in the EIA Report.

12.10.15. For the laying of underground cables, the EIAR details predicted noise levels at various distances from the operations. Notable examples include a mini excavator with a hydraulic breaker expected to produce a noise level of 77 dB LAeq at 10 meters, reducing to 56 dB LAeq at 100 meters. Similarly, a hand-held circular saw is predicted to generate 76 dB LAeq at 10 meters, diminishing to 55 dB LAeq at 100 meters. The EIAR notes that these noise levels may only affect a very limited number of dwellings and for brief periods. The EIAR states that the predicted noise levels for cable route construction may exceed the noise limit of 65 dB LAeq,1hr at the closest dwellings, but these instances are expected to be short-lived and affect a limited number of properties. Since the construction will progress along the roads, the noise impact will not be prolonged at any single location. Despite the transient nature of these impacts, the EIAR puts forward that mitigation measures are recommended to manage potential noise effects, as outlined in Section 10.5.5 of the report.

12.10.15.1. During Operation

12.10.16. The EIAR details the operational noise impact assessment of the proposed wind farm using the ISO 9613-2 model as recommended by the IOA Good Practice Guide (GPG). The report states that this model incorporates attenuation due to geometric spreading, atmospheric absorption, and barrier and ground effects, with all attenuation calculations made on an octave band basis to account for the sound frequency characteristics of the turbines.

12.10.17. The EIAR describes that noise level predictions were conducted at a receiver height of four meters above ground level, which is typical of first-floor windows and results in slightly higher predicted noise levels than if a lower height were used. The report puts forward that the attenuation due to terrain screening has been limited to a maximum of 2 dB(A), and where propagation occurs above concave ground, a correction of +3dB was added, aligning with IOA GPG recommendations.

12.10.18. The EIAR notes that while the exact turbine model for the site will be decided through a competitive procurement process post-consent, two potential turbine models have been assessed: the Siemens Gamesa SG155 6.6MW and the Vestas V162 7.2MW. Both models have been evaluated for their noise emission levels, which are considered comparable to other turbines of similar scale and capacity.

12.10.19. The EIAR indicates that a total of 13 turbines, variable speed and pitch-regulated, have been modelled, with the SG155 having a rotor diameter of 155 meters and a hub height of 102.5 meters, while the V162 has a rotor diameter of 162 meters and a hub height of 99 meters. It is stated that the turbines will be quieter at lower wind speeds due to their variable speed operation. Furthermore, the EIAR posits that noise-reduced modes are available for the candidate turbines and are considered during the operational phase to minimise noise impacts.

12.10.20. For the uncertainty in the noise emission data, the EIAR details that a correction factor of +2 dB was added to the Siemens Gamesa data, and a correction of +1 dB was added to the Vestas data, in line with the IOA GPG and manufacturer warranties. This ensures that the predicted noise levels do not underestimate the potential impact.

12.10.21. Tables within the EIAR present the overall sound power levels and the sound power frequency distribution for both turbine models, providing a comprehensive set of data to be considered for the noise impact assessment. These tables indicate the

noise levels at various operational modes and wind speeds, which are critical for understanding the potential noise environment during the operational phase of the wind farm.

12.10.22. The EIAR sets out the operational noise immission levels for the proposed Coolglass Windfarm, as presented in Table 10-12 and Table 10-13, assessing the noise impact for two potential wind turbine models: the SG155 and the V162. The EIAR indicates that a negative exceedance value means the turbine immission level is below the appropriate limit. It states that for the highest predicted wind turbine immission levels at Noise Sensitive Receptors (NSRs), which serve as proxies for survey locations, compliance at these NSRs would ensure compliance at all receptors within the same group. The report posits that the worst-case scenario assumptions include downwind propagation and unconstrained operation of the turbines. The EIAR notes that, in reality, not all NSRs will simultaneously be downwind of all turbines, and actual noise levels will, therefore, likely be lower than those predicted.

12.10.23. The EIAR details that the noise immission levels are given in terms of LA90,T, in line with IOA GPG recommendations, by subtracting 2 dB(A) from the calculated LAeq,T noise levels based on turbine sound power levels. In assessing the potential noise impact, the EIAR describes that for the SG155 machine, for example, the predicted noise immission levels at standardised wind speeds from 4 m/s to 10 m/s do not exceed either daytime or nighttime noise limits for any of the listed NSRs. For instance, at NSR06, which corresponds to NML1, the daytime noise limit ranges from 40 to 53 dB LA90, while the predicted wind turbine immission levels range from 33 to 40 dB LA90, resulting in a negative exceedance across all standardised wind speeds. The night-time limits and exceedances follow a similar pattern, indicating compliance with the set limits.

12.10.24. The EIAR similarly puts forward that for the V162 machine, the predicted noise immission levels do not exceed the noise limits under any wind speed conditions at the surveyed locations. As with the SG155, the predicted immission levels for the V162 are within acceptable limits, such as at NSR05 (NML2), where the daytime exceedance ranges from -12 to -4 dB LA90, and the nighttime exceedance ranges from -15 to -5 dB LA90.

12.10.25. The EIAR posits that the operational noise impacts are influenced solely by the hub height within the turbine range parameters proposed. The assessment considered the highest hub height, 102.5m, for the SG155 machine and the lowest, 99m, for the V162 machine, encapsulating the range of potential noise impacts due to variations in hub height. The EIAR notes that sound power level and sound power frequency distribution are factors affecting operational noise effects. It concludes that whichever turbine model is selected will be within the assessed range, ensuring that operational noise levels do not exceed the limits set out in the report and do not result in any significant operational noise effects.

12.10.26. Regarding the substation, the EIAR describes that the transformer noise levels are likely to vary with the electrical load, which correlates with the wind speed, as turbines generate more power at higher wind speeds. The EIAR states that calculations for transformer noise are based on the Siemens TLPN7747 model, which has a maximum sound power level of 93 dB LWA when the turbines are at rated power. The EIAR details that the predicted noise level from the substation at the nearest Noise Sensitive Receptor (NSR), NSR05, is 29 dB LAeq, which corresponds to 27 dB LA90. It puts forward that the wind turbine noise at NSR05 is predicted to be higher at 39 dB LA90 for the SG155 machine and 40 dB LA90 for the V162 machine when operating at rated power.

12.10.27. The report posits that since the substation noise level is at least 10 dB lower than the wind turbine noise level, the substation's contribution to the overall noise at NSR05 is not expected to increase the predicted noise level from the turbines, which is already at 39 dB LA90 or higher. Therefore, the EIAR concludes that the noise from the substation at this location will not be significant and will not contribute to an increase in the overall noise environment.

12.10.27.1. <u>During Decommissioning</u>

12.10.28. The EIAR indicates that upon decommissioning of the Coolglass Windfarm, noise impacts are expected to be less than during the construction phase and, therefore, not significant. The report posits that the process will involve disassembling wind turbines during daytime hours and removing all above-ground components for recycling, while turbine foundations will be left underground, covered, and reseeded. For site access tracks, the EIAR notes that if they are not required for other purposes,

they could be removed, involving the extraction of hardcore materials and reapplication of topsoil. The underground cables will be cut back and left in-situ, with associated works expected to have a negligible impact.

12.10.29. **Mitigation Measures**

12.10.30. During construction, the EIAR posits that while the predicted noise levels from the proposed development are largely within acceptable limits, certain tasks may temporarily exceed these thresholds at their nearest Noise Sensitive Receptors (NSRs). To mitigate the potential effects of construction noise, the EIAR outlines a set of mitigation measures that will be fully implemented as part of the Construction Environmental Management Plan (CEMP) in Volume III. These include:

- Audible noise and heavy goods vehicle deliveries will be confined to 07:00-19:00 on weekdays and 07:00-13:00 on Saturdays, with turbine deliveries outside these hours requiring prior consent from the Council and the Police.
- The EIAR indicates that activities not expected to produce audible noise at the site boundary may continue outside of these hours. Night-time turbine deliveries would necessitate agreements with the planning authority to ensure minimal disturbance, such as preventing engines from idling near residential properties and informing residents about any out-of-hours activities.
- Traffic from construction works will be restricted to approved access routes.
- All construction will follow best practice as outlined in BS 5228.
- Equipment maintenance will be upheld to ensure noise attenuation features, such as engine casing and exhaust silencers, are in place.
- Activities will be placed as far from residential areas as possible where flexibility allows.
- A site management regime will be established to regulate vehicle movement to and from the site.
- Construction plant known to generate notable noise and vibration will be operated to limit the duration of higher magnitude levels.

12.10.31. Proposed mitigation measures during the operational phase include the possibility of operating turbines in noise-reduced modes should the need arise, as

detailed in the EIAR. The assessment, conforming to current best practice, reveals that operational noise levels from SG155-6.6 MW and V162-7.2 MW turbines are within established criteria, negating the necessity for mitigation under standard conditions. The EIAR describes that adjustments to hub height will not necessitate mitigation, given that they do not alter the significance of operational noise effects. It further posits that the selection of turbine models will consider sound power levels and frequency distribution to maintain adherence to the noise levels outlined in the chapter. If the chosen turbine model potentially exceeds noise limits, it will operate in a noise-reduced mode, utilising computer-controlled adjustments to blade pitch or rotational speed to balance noise emission and power generation, activating only when specific wind conditions dictate.

12.10.32. **Monitoring and Residual Impacts**

12.10.33. The EIAR indicates that post-commissioning noise surveys will be conducted by a qualified acoustician in coordination with Laois County Council to verify compliance with the prescribed noise limits. In the event that noise criteria exceedances are detected, the EIAR posits that the procedure detailed in the IOA GPG and Supplementary Guidance Note 5 will be followed, with necessary corrective actions taken, such as the potential implementation of noise-reduced modes for turbines under specific wind conditions.

12.10.34. Regarding construction noise residual impacts, the EIAR describes that with the full implementation of the proposed mitigation measures, the noise levels are anticipated to remain below the noise limit of 65 dB LAeq,1hr for operations lasting over a month. Consequently, the residual construction noise impact is expected to be not significant. For operational noise residual impacts, the EIAR notes that the assessment of the two candidate machines confirms that no mitigation measures are required to comply with current best practice guidelines, leading to a non-significant residual impact. Should the selected installed turbines exceed limits, the EIAR details that mitigation measures would be enacted to ensure compliance, thereby the residual impact would remain not significant.

12.10.35. **Assessment**

12.10.36. I acknowledge the concerns raised by third-party submissions regarding noise impacts associated with the proposed wind farm. Submissions highlight the possibility that the proposed setback distances of turbines, influenced by the area's topography, may not sufficiently mitigate noise at nearby homes and sensitive locations such as schools. There is concern about construction noise, including potential blasting near residences, notably in the Wolfhill area, and the impact on the local community's daily life, sleep, and stress levels. Criticism is levelled at the noise impact assessment for not fully encompassing noise-sensitive receptors and not accounting for worst-case scenarios, which may underestimate the noise pollution's impact on the quality of life for residents. Concerns are also voiced over the continuous noise and infrasound from turbine blades affecting mental health and the wellbeing of vulnerable groups, including children and those with hearing impairments using hearing aids. The reliability of desktop noise impact studies without on-site validations is questioned, and the absence of comprehensive assessment and mitigation strategies for noise and shadow flicker is considered a significant oversight. Furthermore, there are doubts about the developer's ability to mitigate noise impacts effectively, with specific scepticism towards the developer's claims on wind farm noise and distancing being challenged for lack of empirical evidence and potentially misleading subjective language.

12.10.37. Having reviewed the Environmental Impact Assessment Report, it is my view that the report adequately addresses noise and vibration impacts. The adoption of BS 5228 for construction noise and the IOA GPG for operational noise is appropriate. Mitigation measures during construction, such as restricted operational hours for noisy activities and vehicle movement controls, are directly linked to reducing noise levels at nearby receptors. Specifically, the EIAR's commitment to limiting audible construction activities to daytime hours mitigates potential sleep disturbance and chronic stress in the Wolfhill area, where proximity to residences is a concern.

12.10.38. For operational noise, the EIAR's reliance on the ISO 9613-2 model for the assessment of noise immission levels, while conservative in assuming downwind propagation from turbines, ensures that the worst-case noise impact is considered. The selection of the SG155-6.6 MW and V162-7.2 MW turbines is predicated on their compliance with established noise criteria, reflecting alignment with current guidelines.

The EIAR's approach to hub height variation within the turbine parameters demonstrates an understanding of its non-significant effect on noise impact, substantiating the claim that no additional mitigation is necessary. Moreover, the EIAR details the incorporation of noise-reduced operational modes to be employed reactively if the installed turbines risk exceeding noise limits, demonstrating a proactive noise management strategy. The strategy provides for the adjustment of blade pitch and rotational speed by the turbines' computer-based controllers, minimising the loss of power generation while maintaining noise within acceptable levels. The EIAR's outlined post-commissioning monitoring, entailing noise surveys and alignment with the IOA GPG, further substantiates compliance. It provides for corrective action, such as operational adjustments in turbine modes under certain wind conditions, should exceedances occur.

12.10.39. The proposal accords with the Wind Energy Development Guidelines (2006) regarding noise impacts. It adopts turbine models SG155 6.6MW and V162 7.2MW that embody current engineering practices such as variable speed operations to minimise noise emissions, in line with the technological advancements noted in the guidelines. The specified turbine designs ensure compliance with the fixed lower limit of 45 dB(A) and the 5 dB(A) maximum increase above background noise levels at noise-sensitive locations. In quieter areas, where background noise falls below 30 dB(A), the proposal adheres to recommended noise levels between 35-40 dB(A) for daytime and maintains a night-time limit of 43 dB(A) to prevent sleep disturbance, meeting the Guidelines' criteria. Furthermore, the proposal maintains a minimum separation distance greater than 500 metres from the nearest noise-sensitive receptor, thereby complying with the Guidelines which stipulate this distance as a threshold where wind turbine noise is typically not considered a significant concern.

12.10.40. In conclusion, it is my view that the proposed wind farms adherence to established industry standards and wind energy guidelines, along with the implementation of detailed mitigation measures would prevent potential significant noise and vibration impacts on the environment. Furthermore, the commitment to ongoing monitoring would ensure the development's capacity to manage and mitigate any potential adverse noise and vibration effects.

12.11. Cultural Heritage

12.11.1. Cultural Heritage is addressed in Chapter 11 of the EIAR.

12.11.2. **Existing Environment**

12.11.3. The EIAR assesses the cultural heritage within and around the Proposed Development Site, stating that no known prehistoric cultural heritage assets have been recorded within the site itself. However, it notes the presence of ten prehistoric sites within a 1km buffer zone, including megalithic structures, barrows, and burnt mounds (Fulacht fia), hinting at localised prehistoric activity. Despite this, the EIAR suggests a low potential for unknown prehistoric assets within the site, given the absence of visible earthworks that typically indicate such sites. The EIAR further details that early medieval cultural heritage assets are unlikely within the site, supported by the absence of such assets in the immediate vicinity. Similarly, it posits a very low potential for medieval assets within the site, as none were identified in the surrounding 1km area. For the post-medieval period, the EIAR acknowledges six documented assets within the search area but maintains a low potential for unknown post-medieval assets within the site, likely due to the detailed historic and modern mapping available. Undated assets are also considered, with five identified within the 1km buffer zone. Yet, the potential for discovering unknown undated assets within the site is considered low.

12.11.4. **Potential impacts**

12.11.4.1. <u>During Construction</u>

12.11.5. The EIAR indicates there are no known direct construction impacts on archaeological remains within the Proposed Development Site. The probability of uncovering unrecorded archaeology during construction is considered low, with any such finds expected to be of low significance. Nevertheless, the EIAR identifies that in the event that remains of low significance are present and that the magnitude of impact, in the worst case, was high, the significance of impact would be significant.

12.11.6. Regarding cable routes, potential direct impacts are identified for the cultural heritage town of Timahoe. Although direct effects on buildings within the candidate Architectural Conservation Area (ACA) are not expected, the R426 road through

Timahoe may be affected. Works within an ACA must respect the area's special character. The cable route's physical impact, limited to modern road/footpath alterations, is predicted to be neutral with no substantial change to Timahoe's cultural significance, rendering the significance of effect as Not Significant/Imperceptible.

12.11.7. The recreational amenity trail, utilising existing paths, is not expected to affect any cultural heritage assets. A zone of notification surrounds the enclosure LA024-038, located 45m west of the proposed Option 1 cable route, indicating where works should be reported to the Minister for Housing, Local Government, and Heritage, per Section 12(3) of the National Monuments (Amendment) Act 1994. The EIAR confirms that all necessary notifications and consents will be secured prior to construction within this zone.

12.11.7.1. <u>During Operation</u>

12.11.8. The EIAR posits that due to the topography and dense forestry of the landscape, indirect effects from the operation of the proposed wind farm on cultural heritage are expected to be limited. The intervisibility between cultural heritage assets and the wind farm is mostly negated, maintaining their current settings of enclosure and isolation. Hence, the EIAR notes the introduction of turbines is deemed imperceptible, preserving baseline conditions and rendering further discussion on the majority of assets within proximity to the site unnecessary as per the EPA Guidelines (2022). However, concerns raised during public consultation about potential impacts on Wolfhill Coal Mine and The Swan Brickworks led to design alterations to respect their local historical significance. The EIAR notes that the removal of a turbine cluster near Wolfhill and community engagement to improve and preserve The Swan Brickworks ensure the mitigation of adverse impacts on these local heritage sites.

12.11.9. The EIAR details that Timahoe Ecclesiastical Complex, specifically Timahoe Round Tower (LA018-031005), Timahoe Church (LA018-031001), Castle/Tower House (LA018-031006), and also Fossy Church (LA019-016), Ringfort – Rath (LA024-015001), Castle – Motte and Bailey (LA024-015002), and Saint Mogue's Church, Timogue (12801929) are identified as potentially susceptible to indirect impacts due to changes in setting.

12.11.10. The EIAR notes that the proposed wind farm development is likely to have a very low adverse impact on the Timahoe Ecclesiastical Complex. It details that the

direct effects on the cultural heritage, specifically on the Timahoe Round Tower and adjacent ecclesiastical structures, are considered moderate due to their national monument status and the mitigating presence of natural screening provided by trees. It considers the visibility of the wind turbines from certain vantage points would not significantly detract from the cultural value or appreciation of the site. The EIAR posits that the indirect effects, such as the change in setting and potential distraction to the silhouette of the historical site, are offset by the distance of 2.4km from the nearest turbine and the enclosure of the complex by tree lines, ensuring the continued distinction of the asset within the landscape. The EIAR notes that although seven turbines are expected to be visible from the site, the impact is quantified as neutral due to the substantial existing tree coverage and the current condition of the ruins, which allows appreciation of the monuments only at ground level. Consequently, the report states that the significance of effects on the heritage assets is imperceptible, with the historical appreciation of the monuments remaining largely intact post-development.

12.11.11. The EIAR describes Fossy Church (LA019-016), a 16th-century parish church near Timahoe, as a high-sensitivity National Monument (114.02) with its significance derived from its architecture and its setting within the parish and townland. The EIAR posits that the proposed wind farm, while making seven turbines visible from the church, will not impact the appreciation of the church's architecture due to their distance. Furthermore, the EIAR indicates that the majority of southern views from the church will include these turbines, but asserts that there will be no change affecting the understanding of the cultural significance of Fossy Church. It submits that the significance of the effect on the church is imperceptible, with the asset's connection to its setting and views from surrounding settlements remaining largely unaffected by the development.

12.11.12. The EIAR posits that the Ringfort – Rath (LA024-015001) and Castle – Motte and Bailey (LA024-015002), both situated within a valley in the Timahoe Hills and protected under a Preservation Order (4/1981) as National Monuments, will experience a neutral impact from the proposed wind farm development. The report states that while eight turbines are anticipated to be visible from these assets, their presence will be peripheral due to the valley's north-to-south/southwest orientation and will not impede the long-distance views vital to the site’s cultural significance.

Furthermore, the EIAR suggests that the development will not affect the intervisibility with other nearby historical assets, thus maintaining the integrity and significance of the monument's setting, and therefore, the significance of the effect on the Ringfort and Motte and Bailey is deemed imperceptible.

12.11.13. The EIAR indicates that Saint Mogue's Church in Timogue, an 18th-century ecclesiastical structure of high cultural heritage sensitivity and national significance, will not suffer any impact to its cultural significance from the proposed wind farm development. The church's importance lies in its architectural preservation and the social interest of the RMS Lusitania inscription, which the EIAR suggests will remain unaffected, as the immediate setting of the church is the primary contributor to its significance rather than the wider landscape. Although seven turbines may be visible in long-distance views to the south, their presence is deemed a minor intrusion and is not expected to detract from the appreciation of the church or its setting. The report posits that both the approach to the church and views from the church are expected to remain unimpacted, and hence, the magnitude of the development's effect is considered neutral, with the significance of this effect being imperceptible.

12.11.14. The EIAR states the cable route associated with the development is expected to have no operational effects on any cultural heritage assets, indicating no negative or beneficial outcomes. The EIAR states that there would be no additional direct or indirect impacts to cultural heritage assets during the decommissioning phase of the proposed development.

12.11.15. **Mitigation Measures**

12.11.16. The EIAR details mitigation measures for the proposed wind farm development, particularly focusing on safeguarding cultural heritage during ground-breaking works. It recommends that all such activities within the development site be subject to archaeological monitoring, proposing a watching brief to record any archaeological remains that could be affected. This measure is to be carried out by a qualified archaeologist, and the extent of the mitigation is to be agreed in liaison with the Minister for Tourism, Culture, Arts, Gaeltacht, Sport and Media through a Written Scheme of Investigation.

12.11.17. For the cable route, specifically concerning the Enclosure (LA024-038), the EIAR puts forward that the Minister must be notified two months prior to any works in

the Zone of Notification as per legislative requirements. In Timahoe, the EIAR indicates that any damage to the roads from the development works must be repaired to match the existing style. These mitigation measures, to be outlined in a Written Scheme of Investigation, will be agreed upon with the Minister, ensuring that the cultural heritage within the affected area is appropriately managed and preserved.

12.11.18. **Residual and Cumulative Impacts**

12.11.19. The EIAR states that the implementation of the archaeological mitigation measures for both the wind farm and cable route would offset direct adverse impacts on any archaeological remains discovered during the works. This mitigation, through detailed archaeological investigation and reporting, would provide informational benefits that somewhat compensate for the disturbance. The EIAR notes a moderate, but not significant, residual impact on Timahoe Round Tower which does not require additional mitigation and will be temporary, ceasing once the development is decommissioned. For the cable route, similar mitigation efforts will balance any impacts on buried archaeological remains, with the significance of these impacts to be viewed in the context of the resulting archaeological knowledge enhancement.

12.11.20. The EIAR posits that the cumulative impacts of the proposed wind farm development, in conjunction with other developments like the consented Pinewood Wind Farm (PL11.248518) located 7km southwest, are not anticipated to have any additional effects on the cultural heritage site of Timahoe Round Tower (LA018-031005). The report states that due to substantial tree screening, the Pinewood Wind Farm, consisting of 11 turbines, is unlikely to be visible from Timahoe Round Tower or from the northern approach to the monument, and therefore it concludes that there will be no cumulative effect on the significance of the Round Tower.

12.11.21. **Assessment**

12.11.22. I have taken into consideration the third-party submissions received expressing concerns regarding the potential impacts of a proposed wind farm on Cultural Heritage. These submissions outline concerns regarding the site’s proximity to ancient cultural heritage assets, such as the Druids Altar, and the inadequate archaeological report from the developer, which fails to fully recognise the significance of sites like the Monamanry Megalithic structure and St Mary's Church, Wolfhill. It is asserted that

the proposed development's proximity to these sites could disrupt their astrological, spiritual, religious, and ceremonial relevance. Further concerns arise from the disregard for local worship places and the intangible cultural heritage of the community, as well as a failure to adhere to legal obligations for preserving archaeological heritage as per the European Convention on the Protection of the Archaeological Heritage.

12.11.23. I have also taken into consideration the submission from the Department of Housing, Local Government and Heritage - Development Applications Unit, which outlines several deficiencies in the EIAR for the proposed wind farm with regard to cultural heritage. The EIAR is criticised for its inadequate assessment of impacts on archaeology and cultural heritage, relying too heavily on desk-based research rather than comprehensive fieldwork. Despite the opportunity for partial fieldwork in non-forested areas, it was not undertaken, and the EIAR lacks important supporting documentation such as a gazetteer of heritage assets and relevant historical mapping. The Visual Impact Assessment provided within the EIAR is considered limited and fails to fully consider the visual impact on significant monuments like Timahoe Church and Round Tower, and Fossy Church, underestimating the importance of their landscape setting. The submission also notes that the development is contrary to the objectives of the Laois County Development Plan 2021-2027, and the location is in an area not designated for wind energy development due to cultural sensitivities. Consequently, the DAU recommends refusing planning permission unless the EIAR's shortcomings are rectified, and a revised version is submitted.

12.11.24. I note the applicant's response to the submissions received regarding the proposed wind farm's impact on cultural heritage. The applicant acknowledged conducting a site survey on 6th April 2022, limited to non-forested areas due to health and safety concerns. The survey reportedly found no archaeological remains, and an assessment of impacts on cultural assets, including Timahoe Church and Round Tower, has been carried out. In response to the DAU's requests for additional information and enhanced landscape photomontages, the applicant has expressed willingness to provide further details as necessary. The Applicant submits that Chapter 11 of the EIAR accords with the Laois County Development Plan 2021-2027, which advocates for the preservation and sustainable development of cultural heritage. The applicant asserts that a thorough assessment has been made, assuming a worst-case

scenario, and proposed mitigation measures are outlined for direct impacts during construction, particularly on an enclosure and the town of Timahoe. Indirect impacts on National Monuments and cultural heritage assets are deemed non-significant for EIA purposes, and the applicant proposes to agree on mitigation measures with the planning authority for different project phases. The Department's request for additional information to address their concerns is noted by the applicant, who seeks the opportunity to provide a comprehensive response.

12.11.25. Having reviewed the EIAR, supplementary documentation, and taking into consideration the concerns raised in submissions from third parties and the Development Applications Unit (DAU), it is my view that the proposed development has been subject to an adequate cultural heritage impact assessment. Direct impacts on cultural heritage during construction are projected to be low, due to the absence of known archaeology within the immediate development site. The EIAR's proposed mitigation measures for direct impacts, which include monitoring during ground-breaking works by a licensed archaeologist, would ensure that any previously unrecorded archaeological remains are identified and preserved. This approach would mitigate potential damage to subsurface heritage assets effectively.

12.11.26. Indirect impacts, particularly during the operational phase, relate primarily to the visual setting of the heritage assets, notably the Timahoe Ecclesiastical Complex and the Round Tower. Given the existing natural vegetative screening and the 2.4km distance from the nearest proposed turbine, it is my view further to inspection of the site and surrounding area, including the Timahoe Ecclesiastical Complex, that the potential for any significant visual impact would be minimal. In terms of cumulative effects, the addition of the proposed wind farm to the existing consented developments like Pinewood Wind Farm would not result in additional significant impacts. This is due to the existing natural screening provided by the landscape itself, which would obscure any potential additive visual effects.

12.11.27. In my view, the EIAR addresses the DAU's concerns through its proposed mitigation measures, which include detailed monitoring commitments and adherence to statutory notification requirements. Specifically, the EIAR's outlined approach for managing potential impacts on the Enclosure (LA024-038) demonstrates compliance with the obligations under Section 12(3) of the National Monuments (Amendment) Act 1994, by committing to providing the Minister of Tourism, Culture, Arts, Gaeltacht,

Sport and Media with a two-month notification of any intended works. Furthermore, the EIAR's provisions for the town of Timahoe ensure that any public realm works, including those affecting roads within the Architectural Conservation Area (ACA), will be conducted in a manner that preserves the area's distinctive character. The commitment to engage a suitably qualified and licensed archaeologist for any monitoring or further mitigation and the commitment to formulate these measures in a Written Scheme of Investigation (WSI), negotiated with the relevant Minister, would mitigate cultural heritage impacts. I conclude, therefore, that subject to the implementation of the proposed mitigation measures, significant effects on cultural heritage assets would not occur.

12.12. Traffic and Transportation

12.12.1. Methodology

12.12.2. The EIAR sets out a structured approach to evaluating the environmental impact of traffic movement changes due to the proposed development. The EIAR notes that as per the IEMA guidelines (1993), traffic flow variations of +/- 10% are typical and increases less than this are considered to have negligible environmental impact. The EIAR identifies key potential environmental effects such as noise, vibration, driver and community severance, traffic hazard and dust/dirt, which may result from changes in traffic flows due to the wind farm's construction.

12.12.3. The methodology uses established criteria to assess the sensitivity of receptors, such as local communities and road users, to changes in traffic. Sensitivity levels range from low to high and are evaluated in context with the area’s characteristics. The guidelines suggest a detailed assessment is necessary if traffic increases by 30% or more, or by 10% or more in areas identified as sensitive. The EIAR notes the EIMA does not define a sensitive area; thus, the assessor's judgement is vital, based on professional experience. In assessing the significance of effects, Table 12-2 of the EIAR details the sensitivity of the receptors and the magnitude of change. Significant effects are categorised as 'major' or 'moderate' as per the EIA Regulations. The EIAR includes a detailed Construction Traffic Management Plan to mitigate potential traffic-related impacts.

12.12.4. Consultation with local authorities and stakeholders formed part of the scoping and assessment process. Table 12-4 sets out key issues raised in consultations and where they are addressed in the Chapter. The EIAR states that for operational effects, since the impact of the development is deemed negligible, no further assessment is undertaken. The EIAR examines potential residual effects post-mitigation, such as wear and tear on roads. The EIAR concludes with a statement of significance summarising the overall assessment and reporting the residual effects' significance in compliance with EIA Regulations. Decommissioning effects are anticipated to be less impactful than construction and are therefore not included in the assessment.

12.12.5. **Existing Environment**

12.12.6. The EIAR details the proposed wind farm is situated 11km southeast of Portlaoise, with the site spanning across Fossy Mountain and Wolfhill. The local road network includes the R426 and L3851, which are projected to experience traffic increases due to the development. Baseline traffic flow surveys, absent of holiday distortions, present an average weekday two-way flow on the R426 below 1,000 vehicles - HGVs constitute 3% of this. A recorded 85th percentile speed was 89.4 km/hr. The L3851 showed even less traffic, with 135 vehicles over a 24-hour period, and 5 HGVs, reflecting 4% of total traffic. Both R426 and L3851 are identified to have substantial spare capacity, over 95% each.

12.12.7. The EIAR states Personal Injury Accident (PIA) data could not be sourced due to the RSA's policy review, thus precluding specific study area road safety assessments. However, national and County Laois statistics from 2015 to 2019 show a decrease in road casualties, indicating an improving trend in road safety. The death toll in road collisions in County Laois in 2019 was notably low, with only one recorded death.

12.12.8. **Proposed Development**

12.12.9. The EIAR describes that access to the proposed Coolglass Wind Farm will be via two points on Luggacurren Road, leading onto existing tracks, which will be upgraded and utilised for the project. Approximately 13.8 kilometres of internal access tracks will be upgraded, and 5.2 kilometres of existing tracks will be reused. The development's construction haul routes have been designed so all vehicles enter from

the west via Knocklead Road from the R426. HGVs are expected to arrive mainly from Portlaoise to the north, while light vehicles will come from both directions along the R426.

12.12.10. The turbine delivery route, presented in Figure 12-2 of the EIAR, is planned from Dublin port, travelling via the M50, and exiting at Junction 16 of the N7, continuing through Timahoe on the R426, and then accessing the site clusters. The EIAR states the delivery route accommodates turbine components within the specified dimensions (tip height of 180m, a rotor diameter up to 162m and a hub height up to 110m) and will follow the assessed route irrespective of the final turbine model chosen by a competitive tender process.

12.12.11. For cabling, there are two underground cable route options discussed, not part of the current planning application but part of the overall EIAR consent process. Trenching for the cables, extending approximately 10 kilometres, could prompt either lane or road closures for up to 6 months.

12.12.12. The construction phase is expected to last 18-24 months, with the peak period of vehicle trips anticipated during months 5 to 18, aligning with wind turbine deliveries and erection. Key construction activities include site preparation, access track establishment, turbine foundation construction, substation works, cable installation, and wind farm commissioning.

12.12.12.1. Site Construction Traffic Generation

12.12.13. The EIAR details how the construction activities for the proposed Coolglass Wind Farm will necessitate substantial transportation of materials, predominantly sourced locally. Construction phase working hours are set from 07:00 to 19:00 Monday to Friday and 07:00 to 16:00 at weekends, with potential for activities such as wind turbine component (WTC) deliveries to occur outside these hours, subject to Laois County Council approval. The EIAR indicates that the transportation demands have been assessed over a typical 12-hour weekday to align with peak road usage.

12.12.14. The EIAR details that construction materials such as aggregates will be required in significant quantities, estimated at 68,448 tonnes, which will be transported from nearby quarries. In addition, concrete and other construction-related materials will be brought to the site from external sources. The report notes that while there is

potential for on-site materials to be used, it has been presumed for a robust assessment that materials will be imported. Specific construction activities that will generate vehicular trips are listed in the EIAR, including site establishment, site access improvements, access track upgrades, construction of turbine foundations, substation works, and electrical installations. The EIAR posits that the most substantial vehicle trips will be associated with the delivery of wind turbine components, which will include abnormal loads and require escort vehicles.

12.12.15. The EIAR provides an estimation of the total number of HGV trips expected during the construction phase of the proposed Coolglass Wind Farm, using a two-way movement calculation to account for deliveries to and from the site. This assessment is informed by the estimated material quantities outlined in Table 12-13 of the EIAR.

12.12.16. Based on the load size and the number of loads for various construction activities such as on-site aggregate importation, felling operations, and the installation of turbine foundations, a total of 5,566 loads are predicted, resulting in 11,132 two-way movements. The EIAR details that these movements are distributed throughout the construction timeline, with the number of trips per month adjusted to reflect the phased nature of the construction activities. Specifically, the EIAR posits:

- Site establishment and restoration will entail a modest number of HGV deliveries.
- Access track construction is anticipated to require significant aggregate importation from external locations.
- Substation and compound construction will necessitate various materials, including aggregates.
- Concrete pouring will be conducted on isolated, non-sequential days for each turbine foundation, resulting in specific 'pour days.'
- Cabling work will include the delivery of electrical connection materials.
- Turbine foundations will involve multiple components and materials, excluding the delivery of the turbines themselves.

12.12.17. The assessment considers the peak 'worst case' scenario for daily traffic generation, as recommended by IEMA guidelines, which occurs when multiple construction activities are undertaken concurrently. Tables 12-15 and 12-16 of the EIAR provide a daily breakdown of HGV trips for both concrete pour days and non-

pour days across the construction period. These tables illustrate the varying levels of HGV trip generation that can be expected throughout the different phases of the development's construction.

12.12.18. The EIAR describes the traffic generation for the proposed wind farm, particularly focusing on HGV, light vehicle, and staff trips during the construction and decommissioning phases. Regarding HGV Trip Generation, the 'worst case' scenario predicts the peak HGV trip generation during the early construction months, particularly months 5 and 6, with up to 140 two-way trips on concrete pour days and 119 on average construction days. This equates to 12 trips per hour on pour days and 10 per hour on average days.

12.12.19. The EIAR posits that the delivery of wind turbine components (WTCs) will necessitate a series of specialised haulage trips. Each turbine's components will require seven AIL deliveries. It's assumed that these deliveries would be spread over a seven-month period, equating to approximately four delivery days per month during the peak phase. The maximum number of staff on-site at one time is expected to be 274, typically travelling in 14-seater minibuses provided by the contractor. The prediction includes 20 minibus trips and an additional 20 light vehicle trips at the peak construction period, totalling 100 two-way movements per day.

12.12.20. The EIAR details that the daily and hourly two-way movements during the 'worst-case' scenario for months 5 and 6 of the construction phase will result in 250 two-way vehicle trips per day during concrete pour days and 229 on non-pour days. It's assumed that the majority of vehicles, both HGVs and light, will access the site from the north via the R426, with a small percentage coming from the south.

12.12.21. The EIAR indicates that decommissioning activities will involve fewer vehicle movements than the construction phase. Above-ground turbine components will be disassembled and removed for recycling without requiring transport as abnormal loads. Foundations will be covered and allowed to re-vegetate, and internal access tracks may remain subject to local authority and landowner agreement. The on-site substation will become part of the national electricity network, and no import of materials such as concrete or aggregate will be required, reducing the overall number of HGVs compared to the construction phase. Underground cabling will be cut back and left in situ.

12.12.22. **Potential Impacts**

12.12.22.1. <u>During Construction</u>

12.12.23. The EIAR describes the potential impacts of the proposed wind farm on traffic and transportation, focusing on construction effects and the embedded measures to mitigate potential effects. Regarding embedded measures, the EIAR details that a range of mitigation measures are embedded within the design of the proposed development, as described in Chapter 3 of the EIAR. A detailed Construction Traffic Management Plan (CTMP) will be implemented, agreed upon with Laois County Council and Garda Síochána. This plan includes measures such as road widening, vehicle swept path analysis, structural assessments, and dust management, as well as community engagement efforts to alleviate stress and anxiety, particularly in relation to abnormal load deliveries.

12.12.24. Regarding direct effects, the EIAR posits that direct effects include increased traffic flows during construction, particularly during peak construction activities like concrete pouring. Traffic increases have been calculated against baseline levels with a detailed assessment of the significance of effects made against established criteria. The EIAR indicates that while there will be an increase in HGVs on the L3851 and R426, the overall capacity of the roads is not expected to be significantly impacted, with both retaining at least 95% spare capacity. Indirect effects may also include temporary disruptions and the need for road improvements. The EIAR notes a significant increase in HGV traffic, exceeding IEMA thresholds during both the average and maximum construction days. Specifically, on the R426, HGV traffic is predicted to rise by 441% on the maximum day and 379% on average days. However, the total traffic increase remains below the 30% threshold set by IEMA.

12.12.25. Cumulatively, the EIAR states that the increase in HGVs is significant in percentage terms but asserts that the capacity of the local road network remains largely unaffected, maintaining a high level of spare capacity. The assessment anticipates that with the implementation of the CTMP and good construction practices, the cumulative impact on the road network's overall capacity and function will be negligible. The EIAR suggests that the identified increases in traffic are likely to occur, given the scale of the proposed construction activities. However, it is considered in the report that the effects, while significant in relative terms to the baseline, will not

materially impact the road network capacity, as the overall spare capacity remains high.

12.12.26. The EIAR assesses the potential impacts on road safety associated with the construction phase of the proposed development, considering the lack of specific road accident data for the study area and employing professional judgment as per IEMA guidelines. The assessment recognises the inability to obtain specific injury accident data for the study area, which includes the R426 and the L3851. National data indicates a reduction in accidents within County Laois, suggesting no significant road safety issues county-wide. Due to the absence of localised road safety data, the study area is considered highly sensitive to road safety impacts. The EIAR describes the increased HGV movements as significant but contends they will be accommodated within the road network's capacity without compromising safety. The construction period is temporary, anticipated to last around 18 months, and therefore, the impacts on road safety are deemed to have a low magnitude.

12.12.27. The EIAR posits that driver severance and delay will be negligible, citing the road network's capacity to absorb the predicted increase in traffic. The R426 is reported to have 95% spare capacity, and the L3851 has 97%, suggesting that the traffic from the proposed development would not materially affect road capacity.

12.12.28. The potential for community severance is considered low, with the EIAR noting that the L3851 does not divide any communities significantly and that the R426 has a minimal number of such severance points. The additional traffic is expected to have a low magnitude of impact.

12.12.29. Given the proximity of residential properties to the R426, the study area is classified as moderately sensitive to noise and vibration. Predicted traffic increases are above the 25% threshold that would normally necessitate a quantitative noise assessment; however, since the effects will be temporary, they are considered negligible.

12.12.30. The EIAR states vulnerable road users account for less than 1% of total traffic within the study area. The EIAR suggests a moderate sensitivity to the increased HGV traffic during construction but anticipates that the impact will be minor and not significant, given the temporary nature of construction activities.

12.12.31. The impact of construction traffic on dust and dirt is predicted to be minor, with mitigation measures such as wheel and body washes at the site to ensure that materials are not transferred onto the public highway.

12.12.32. Movements of abnormal loads are expected to cause temporary driver and pedestrian delays, with mitigation measures such as traffic management procedures in place. The significance of the impact is deemed moderate and significant, but limited to turbine delivery days.

12.12.33. According to the EIAR, traffic generation during decommissioning is anticipated to be significantly less than during construction, resulting in low and not significant impacts.

12.12.34. **Mitigation Measures**

12.12.35. The EIAR details a set of mitigation measures to address the potential impacts of the proposed wind farm on traffic and transportation during the construction phase. Proposed mitigation measures include:

- Prior to the movement of abnormal loads, there will be extensive public awareness to minimise disruption. The haulage contractor will obtain all necessary permits, and the timing of loads will be managed to avoid heavy traffic flow periods.
- Contractors with experience in wind farm construction will provide method statements including mitigation measures. A Principal Contractor and Environmental Clerk of Works will oversee the works.
- Appropriate warning signs in accordance with the 'Traffic Signs Manual' will be installed in consultation with the local Roads Authority.
- Site traffic control measures will be in place, including inductions, vehicle permits, and site rules, with heavy traffic equipped with audible reversing warnings and visual aids.
- High-visibility clothing, head protection, and other safety gear will be mandatory, and workers will be briefed on emergency procedures and their responsibility for safety.
- Dedicated parking areas with safe barriers will be provided, and no parking on public roads will be permitted.

- A wheel and body wash will be used to prevent the transfer of materials from the site onto the highway, with local road cleaning as necessary.

12.12.36. The EIAR states that the Construction Traffic Management Plan (CEMP) included in Appendix 12.3 will ensure the implementation of these mitigation measures. The CTMP covers aspects such as waste management, dust mitigation, vehicle washing, and noise management.

12.12.37. **Residual Effects:**

12.12.38. Road safety impacts are anticipated in the EIAR to be significant due to increased traffic but will not be long-term, with a Traffic Management Plan and a trial run for abnormal loads reducing the significance to not significant. Driver severance and delay are considered to have negligible sensitivity and are not anticipated to be significant. Community severance and delay are predicted to have negligible impacts due to low traffic increase in sensitive areas. Noise and vibration impacts on residential properties are considered moderate sensitivity but are expected to be temporary and not significant. The impact on vulnerable road users, while moderate, is deemed low due to the temporary nature of construction and not significant. Dust and dirt impacts are considered low sensitivity and magnitude, resulting in non-significant residual effects.

12.12.39. **Cumulative Impacts**

12.12.40. The EIAR details that simultaneous major developments in the area and along the access route could lead to an increase in traffic flows due to the construction of the Proposed Development. Specifically, the EIAR posits that the cumulative impact assessment, encapsulated in Table 12-22 and derived from various sections of the EIAR, considers vehicle trip generation from several nearby granted developments within the Coolglass study area. Notably, the EIAR indicates that developments such as the Michael Johnson site, Bilboa Wind Farm, Bord Na Mona Powergen Ltd, Spink Quarry, Pine Wood Wind Farm, and Pine Wood Substation, despite their proximity and granted statuses, are not expected to increase traffic on the R426 road, as detailed traffic assessments for these sites do not predict any significant new vehicle movements on this route. Consequently, the EIAR concludes that there is no anticipated cumulative traffic increase on the R426 from these developments, thereby

suggesting minimal cumulative traffic impacts within the study area related to the Proposed Development.

12.12.41. **Assessment**

12.12.42. I have taken into consideration the third-party submissions received expressing concerns regarding traffic and road safety, which submit the proposed development would cause a distraction to motorists caused by the movement and presence of the turbines, particularly along the L3858 from Wolfhill to The Swan, potentially jeopardising road safety. Additionally, the safety of vulnerable road users such as cyclists, walkers, and runners is raised, indicating the necessity for a comprehensive road safety impact assessment. There are also concerns regarding the capacity of the local road network to accommodate increased construction traffic, impacting the local road network.

12.12.43. I note the local authority inter-departmental reports concerning traffic and transportation raised no objections to the proposed development subject to standard conditions. I have also taken into consideration the issues raised in the submission from TII regarding the proposed development. TII's concerns primarily relate to the adequacy of the EIAR and the Construction Traffic Management Plan (CTMP) in addressing the impact of the development on Ireland’s national road network, particularly the M7 and N80, which are crucial to both regional and international access and part of the TEN-T Comprehensive Network. TII points out discrepancies in the EIAR, such as the "no response" record to EIA Scoping, whereas detailed engagement did occur. Significant is the necessity for road safety and network capacity to be maintained, with TII stipulating the need for adherence to their publications and standards, particularly regarding abnormal loads, utility diversions, and construction impact mitigation. TII require pre-consultation for any temporary works affecting the national roads, including specific plans for earthworks and landscaping at strategic junctions, along with the requirement for a Road Safety Audit. TII emphasise the need for rectifying any damage to the road surface according to TII Pavement Standards and for all proposed works to secure additional approvals and permits, ensuring no detrimental effects on the network’s operational integrity and safety.

12.12.44. I also note the concerns raised in the submission from the Department of Transport, particularly in relation to the embedding of cables within the public road network. The Department highlights the potential for such installations to impede the Road Authority's capacity for road maintenance and construction, possibly elevating maintenance costs and compromising road stability, especially on older roads with inadequate substructures. They request considering alternative routes for the cables to reduce impact, ensuring power to the cables can be disconnected as necessary for road works, and detailed planning to preserve road space for future utility needs. The report also recommends avoiding placing cable jointing bays beneath road surfaces, to steer clear of attaching cables to bridges and culverts, and to rationalise the number of cables, potentially by consolidating them into a single trench.

12.12.45. Having reviewed the EIAR and supplementary documentation, it is my view that the proposed Coolglass Wind Farm development will not significantly affect traffic and transportation. In terms of direct effects, I acknowledge the increased volume of HGVs on roads like the L3851 and R426. However, considering the local road networks spare capacities, the impact is mitigated to below the threshold of significance. The CTMP's mitigation measures, including road widening and traffic management and scheduling during turbine delivery, would further minimise direct effects. Indirect effects would include temporary disruptions due to traffic management/scheduling, road improvements and increased maintenance. While these effects are likely to occur, they are predicted to have a negligible environmental impact due to their temporary nature and the proposed mitigation measures.

12.12.46. Cumulative effects in the context of other local developments are unlikely to add significant traffic to the R426. Therefore, I consider that the cumulative impact on traffic and transportation would be minimal, and the proposed development would not materially impact the overall capacity and function of the road network. Residual impacts, such as wear and tear on roads and potential impacts on road safety, would not be significant following the implementation of the CTMP.

12.12.47. In consideration of the submissions received from the Department of Transport, Transport Infrastructure Ireland, as well as concerns expressed in third-party submissions, it is my view that the EIAR adequately evaluated potential impacts on traffic and road safety. The two proposed cable route options to an offsite substation are not included in the current planning application and will be subject to a future

application and assessment therein to ascertain the most suitable path for a separate planning application. The concerns regarding the potential distraction to motorists from turbine movement, the safety of vulnerable road users, and the capacity of the local road network to accommodate increased traffic are addressed through the proposed mitigation measures. These measures are detailed within the Construction Traffic Management Plan (CTMP), which provides for road widening, careful traffic management, and scheduling to mitigate the impact of construction traffic, particularly during the transportation of abnormal loads. This plan will be developed in consultation with Laois County Council and An Garda Síochána, and will include extensive public awareness campaigns to minimise disruptions and ensure safety. This would ensure the safety of all road users, including cyclists, walkers, and runners, is maintained throughout the development phase. The local authority's inter-departmental reports, which raised no objections subject to standard conditions, support this consideration.

12.12.48. Transport Infrastructure Ireland's (TII) concerns about the national road network are addressed by ensuring strict adherence to TII's publications and standards. The applicant has committed to pre-consultation for any temporary works affecting the national roads, which will ensure the safety and integrity of the road network. Furthermore, the applicant has committed to undertaking a Road Safety Audit as required by TII, alongside measures to rectify any damage to road surfaces according to TII Pavement Standards.

12.12.49. I conclude, therefore, that subject to the implementation of the proposed mitigation measures, the identified traffic and transportation effects—both direct and indirect—are unlikely to be significant. Cumulative effects with other developments in the region would be negligible. Therefore, the proposed development would not have a significant adverse impact on the environmental factors of traffic and transportation.

12.13. Shadow Flicker

12.13.1. Shadow Flicker is addressed in Chapter 14 of the EIAR.

12.13.2. **Methodology**

12.13.3. The EIAR details relevant policy and guidelines with regards to the assessment and management of shadow flicker impacts caused by wind turbines, including the Irish Wind Energy Association Guidelines (2012), the Laois Wind Energy Strategy, the Wind Energy Development Guidelines (WEDG, 2006) and the Draft Revised Wind Energy Development Guidelines (2019). The EIAR details its assessment process, following the Irish Wind Energy Association (IWEA) Guidelines (2012) and the Wind Energy Development Guidelines (2006), which recommend evaluating shadow flicker at sensitive locations within ten rotor diameters from the turbines. Building data was sourced from the 2022 Geodirectory and validated with aerial imagery. For a comprehensive analysis, two turbine models with different rotor diameters were considered, ensuring all potential impacts within the study area are accounted for. A total of 169 receptors within the study area were identified, with the closest being 722 metres from the nearest turbine. The report asserts alignment with the draft 2019 Wind Energy Development Guidelines, advocating for automatic shutdown to prevent shadow flicker, and commits to post-construction monitoring to confirm impacts and implement mitigation if necessary.

12.13.4. The EIAR assesses shadow flicker impacts with a study area extending to ten rotor diameters from the turbines. The assessment encompasses two scenarios that account for all potential impacts within the study area, utilising models based on turbines with rotor diameters of 155 m and 162 m for Scenario 1 and 2, respectively. It acknowledges that no receptors were identified within the immediate 500m range as per the 2006 Wind Energy Development Guidelines, while 169 receptors fall within the 1,550m and 1,620m shadow flicker study areas.

12.13.5. The EIAR methodology for shadow flicker analysis utilises ReSoft Wind Farm software to model potential impacts on receptors within a defined study area for two turbine scenarios. The parameters assume the worst-case scenarios, with constant sunlight, absence of obstructive features, and perpetual rotor motion. The EIAR notes that despite this conservative approach, which overestimates shadow flicker by treating entire building facades as windows, actual occurrences are expected to be significantly lower. Influencing factors include Ireland's average of 28.6% sunlight during daylight hours and the reduced duration of flicker when turbine rotors are not perpendicular to a property. The EIAR notes that this 'greenhouse' modelling strategy does not account for natural or built screening features that would typically diminish

flicker effects, providing a deliberately cautious estimate pending more refined post-construction assessments.

12.13.6. The EIAR details the shadow flicker assessment under the 'Existing Environment' for two scenarios based on proximity and potential impact. The first scenario identifies 143 residential properties within a 1,550m radius that could experience shadow flicker, with the closest receptor being 719m from the nearest turbine. In the second scenario, an additional 26 properties fall within a larger 1,620m study area. These findings, including the precise locations and distances of the properties from the turbines, are tabulated in Table 14-3 of the EIAR and elaborated in Appendix 14.1, Shadow Flicker Modelling Input Data Results by House/Window.

12.13.7. **Potential Impacts**

12.13.8. The EIAR details the potential impacts of the proposed wind farm on shadow flicker in Scenario 1, where it states that using a worst-case predictive model, a maximum of 134.3 hours per year of shadow flicker could affect receptor 70, with 44 out of 143 receptors experiencing no shadow flicker at all. This assessment is based on the presumption that the sun shines during all daylight hours and the wind constantly blows at operational speeds, not accounting for average sunshine hours or any obstructions. The ‘likely’ scenario, accounting for an average of 28.6% sunshine hours recorded at the nearest meteorological station, suggests that the actual hours of shadow flicker would be considerably lower.

12.13.9. The EIAR posits in Scenario 2 that the shadow flicker effects, based on the predictive modelling technique, could result in up to 139.4 hours per year at the most affected receptor, number 70 in Crissard, Wolfhill, Co. Laois. Out of 169 receptors within the study area, 61 would experience no shadow flicker effects during the operational phase of the wind farm. These figures are derived from a ‘worst-case scenario’ that does not account for average sunshine hours and assumes continuous wind and sunlight during daylight hours. The 'likely' scenario, considering an average of 28.6% sunshine hours from the nearest Met Éireann Met Station, indicates that actual shadow flicker hours would be significantly lower.

12.13.10. Regarding Annual Impacts, the EIAR describes under Scenario 1 that, although no turbines are sited within 500m of any receptor, the worst-case theoretical model suggests 50 receptors could be subjected to shadow flicker beyond the threshold of

30 hours per year. Specifically, receptor no. 70 is estimated to encounter 134.3 hours annually in this model. When adjusting for actual average sunshine hours, the model anticipates a significant decrease, with only 5 properties potentially exceeding the 30-hour guidance, and receptor no. 70's exposure reducing to 38.4 hours per year. For Scenario 2, similarly, no turbines are within the 500m proximity threshold. However, the worst-case theoretical model predicts the same number of receptors—50—might experience shadow flicker exceeding the 30-hour annual guidance. Receptor no. 70 is projected to experience the most considerable impact at 139.4 hours annually. Adjusting for average sunshine hours, the number of impacted properties marginally increases to 6, with receptor (house) no. 70 potentially subject to 139.9 hours of shadow flicker annually. These findings suggest a direct effect on a limited number of properties, with house no. 70 being the most impacted, although the real-world impact is likely to be less severe due to environmental factors taken into account in the 'likely' scenario.

12.13.11. Regarding Daily Impacts, the EIAR posits for Scenario 1 that, under the worst-case theoretical scenario, 20 receptors would experience shadow flicker effects exceeding the 30-minute daily threshold. House number 24 is highlighted as the most affected, with 53.4 minutes of shadow flicker per day, despite being over 500m from the nearest turbine. Incorporating actual sunshine durations reduces this figure significantly, suggesting no property would likely exceed 15.3 minutes of daily shadow flicker without mitigation measures. For Scenario 2, the EIAR indicates a slight increase in potential impact, with 22 receptors theoretically experiencing over 30 minutes of shadow flicker daily. Again, house number 24 faces the greatest impact, with 54.6 minutes per day under worst-case assumptions. However, accounting for average sunshine reduces this likelihood, with no property expected to exceed 15.6 minutes of shadow flicker daily.

12.13.12. **Mitigation Measures**

12.13.13. The EIAR states that shadow flicker control modules, replete with light sensors and advanced software, will be integrated into all turbines to preclude operational periods that could precipitate shadow flicker at adjacent dwellings, post-construction. This system, designed to be adaptive, will mitigate direct effects by halting the turbine or turbines when specific conditions conducive to shadow flicker are met, irrespective

of the turbine model installed. The EIAR posits that with the proper functioning of these shadow flicker control measures, there will be no discernible impact from shadow flicker on the environment, thus signifying a significant mitigation measure. The measures' effectiveness and operation will be under continuous scrutiny to ensure zero shadow flicker impact, aligning with the applicant's commitment to a zero-shadow flicker strategy. The EIAR asserts that such control measures will ensure no shadow flicker effects from the Coolglass Wind Farm, negating potential cumulative impacts with neighbouring wind farms. The specifics of potential turbine shutdown times are detailed in Appendix 14.2 and 14.3 for Scenarios 1 and 2, respectively.

12.13.14. **Assessment**

12.13.15. I have reviewed the EIAR, taking into account the technical data presented and the proposed mitigation measures. I also note the concerns raised in third-party submissions regarding shadow flicker and the proximity of the turbines to residential dwellings, where it is submitted the proposal could lead to shadow flicker affecting five homes for more than 30 hours a year, leading to doubts over the efficacy of the proposed mitigation measures.

12.13.16. The Wind Energy Development Guidelines 2006 recommends that shadow flicker should not exceed 30 hours per year or 30 minutes per day at neighbouring dwellings within 500 meters. As per note 11 in the guidelines, these shadow flicker recommendations are based on research by Predac, a European Union sponsored organisation promoting best practice in energy use and supply, which draws on experience from Belgium, Denmark, France, the Netherlands and Germany.

12.13.17. In consideration of the foregoing, it is my view that the direct effects of shadow flicker, as posited in the EIAR, have been adequately investigated through the adoption of predictive modelling that errs on the side of caution by assuming worst-case scenarios. This methodology is in accordance with the Irish Wind Energy Association’s Best Practice Guidelines (2012), which requires the assessment of potentially sensitive locations or receptors within a distance of ten rotor diameters from proposed turbine locations for EIA purposes. Given that no receptors are identified within the 500m range as stipulated by the 2006 Wind Energy Development Guidelines, the proposal is inherently compliant with the guidelines, which recommend that shadow flicker at neighbouring dwellings within 500m should not exceed 30 hours

per year or 30 minutes per day. As the closest receptor is located 722 meters away, it is situated beyond the distance where shadow flicker issues are most acute, further diminishing the potential for significant effects.

12.13.18. The EIAR includes predictive modelling for two scenarios, considering turbine models with 155m and 162m rotor diameters, encompassing a study area extending to ten rotor diameters, i.e. 1,550m and 1,620m, respectively. The EIAR's use of a worst-case predictive model, which implies continuous sunlight and wind, estimates that the most affected receptor, no. 70, could experience a maximum of 134.3 and 139.4 hours per year of shadow flicker under Scenario 1 and 2, respectively. However, the EIAR's findings indicate that the real-world impact of shadow flicker is anticipated to be considerably less severe than the modelled worst-case scenarios. This is attributed to environmental factors such as natural and man-made obstructions and actual sunlight hours, which are considerably lower than the assumed constant levels used in the models.

12.13.19. Proposed mitigation measures include the installation of shadow flicker control modules on all turbines. These modules would proactively prevent shadow flicker by automatically shutting down turbines when conditions conducive to flicker are predicted. This approach accords with the 2006 Guidelines, which state that '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'. These measures, coupled with ongoing monitoring to assess and adapt as necessary, would ensure the minimisation of shadow flicker impact on the environment and nearby receptors. Cumulative impacts would be negligible subject to the implementation of the proposed mitigation measures. I conclude, therefore, that the proposed development, subject to the implementation of the proposed mitigation measures, would not have significant shadow flicker effects on the environment or potential receptors in the surrounding area.

12.14. Biodiversity

12.14.1. Methodology

12.14.2. The EIAR evaluates the impact of proposed wind turbine configurations, with hub heights ranging from 99m to 102.5m and rotor diameters from 155m to 162m. It focuses on the 'worst-case' scenario to highlight the most significant potential impacts on biodiversity. The assessment aligns with an extensive array of environmental regulations and policies, including global treaties like the UN Convention on Biological Diversity and the Ramsar Convention, EU Directives such as the Habitats and Birds Directives, and national legislation including the Wildlife Acts. The EIAR also takes into consideration the Laois and Kilkenny County Development Plans and the Eastern & Midlands Regional Assembly and Southern Regional Assembly. It posits that, although various turbine permutations have been studied, the disparities in their impacts on biodiversity are mostly negligible, except for notable exceptions that are thoroughly explored.

12.14.3. The EIAR includes a process of scoping based on consultations initiated on 6th July 2022. The scoping exercise solicited input from multiple stakeholders, detailed in Table 15-1 of the report. Most consultees, including An Taisce, Birdwatch Ireland, and the Department of Agriculture, Food and the Marine, did not respond, necessitating no further action. Inland Fisheries Ireland, however, responded with specific requirements for surveys and reporting to ensure that the proposed development does not deteriorate named waterbodies and provided a comprehensive set of instructions for impact assessments on aquatic habitats, especially concerning the River Barrow and River Nore Special Area of Conservation (SAC). The EIAR addresses these points with baseline ecological surveys and mappings, an assessment of potential adverse effects on aquatic receptors, and a mitigation and monitoring regime. The mitigation measures include adherence to fisheries guidelines during construction, minimal interference with watercourses, and implementation of Sustainable Urban Drainage Systems (SuDS) principles. Kilkenny County Council highlighted the proximity of the River Barrow and River Nore SAC, a designated Natura 2000 site, insisting that the EIAR ensures no significant impact on its conservation objectives. The EIAR states that this was confirmed in the Natura Impact Statement (NIS), stating that the development will not undermine these objectives, considering both the current project and potential cumulative effects with other plans. Laois County Council cited legal precedents to ensure that mitigation measures are not considered at the screening

stage of Appropriate Assessment, which was adhered to in the preparation of the EIAR.

12.14.4. The EIAR outlines the need to identify lands for replanting equivalent to the areas clear-felled, choosing to select these closer to the development's commencement for environmental suitability and adherence to latest standards. Felling licences, governed by the Department of Agriculture, Food and the Marine, hinge on planning permissions and are thus deferred to ensure relevancy to up-to-date legislation and best practices. The EIAR commits to preventing significant cumulative effects between the wind farm and replant lands, incorporating appropriate mitigation measures at the licensing stage, such as good forestry and afforestation practices, and avoiding disturbance to wildlife. Consequently, specifics of replant lands are not discussed further.

12.14.5. The EIAR conducted a desktop assessment to gather existing ecological data around the project area, utilising resources such as satellite imagery, EPA maps, and databases from the National Biodiversity Data Centre and the National Parks and Wildlife Services. Specific data requests to the NPWS and Bat Conservation Ireland complemented this information, alongside reviews of relevant avian studies and surveys. While these resources informed the scope of subsequent field surveys, only site-specific data like the winter 2017/18 bird survey were deemed suitable for direct impact assessment due to the granularity required for wind farm impact analysis. Spatial data collation used a 10 km grid for the site, with a more focused 2 km grid for off-road cable route options. Desktop searches for minor accommodation works, like vegetation trimming along the Turbine Delivery Route, were not performed. Designated sites information was sourced from NPWS and NBDC for areas within a 20 km radius of the proposed development, identifying European and national conservation sites to establish the baseline for ecological considerations.

12.14.6. Ecological field surveys were conducted to acquire data for the EIAR, encompassing a range of habitats, flora, and fauna. These included walkover surveys for habitats and flora in July 2022, using Fossitt's guidelines, and extensive bird surveys spanning vantage point observations and breeding wader surveys across multiple seasons from 2017 to 2022, guided by NatureScot standards. Terrestrial mammals were surveyed in both winter and summer of 2022, with trail cameras also deployed. Bat assessments took place over multiple sessions within the year,

employing both static detectors and transect methods, and an emergence survey was conducted for a derelict building in August 2022. Aquatic ecology surveys were completed on a catchment-wide scale focusing on fisheries potential and protected species, such as the white-clawed crayfish and freshwater pearl mussel, alongside assessments of macro-invertebrates and invasive species. The timing of these surveys was chosen to capture seasonal variations and provide a comprehensive overview of the ecological baseline and potential impacts of the wind farm. Data from these surveys are further detailed in respective technical appendices of the EIAR.

12.14.7. Surveys covered the wind farm site, adjacent lands for cable routes, and the turbine delivery route (TDR), examining areas within 50 meters of proposed infrastructure for mammal signs and habitat suitability for amphibians and reptiles. Ornithological assessments followed NatureScot guidance, applying various buffer distances to turbines and infrastructure to gauge impacts on bird species, focusing on those with high conservation priority. Bats were surveyed using methodologies endorsed by NatureScot, considering species most likely to be affected by wind farm operations. Aquatic ecology surveys adopted a catchment-level approach for a comprehensive assessment. For habitats and flora, Fossitt guidelines were used for terrestrial habitat mapping, and GPS was utilised to record rare or invasive plant species, with surveys timed optimally for accuracy. Birds were studied across seasons from 2017 to 2022, distinguishing between primary target species, which included legally protected and red-listed species due to their conservation significance, and secondary targets, which, while possibly affected by wind farms, had lower conservation priorities. This differentiation allowed for a focused approach to monitoring species most susceptible to wind farm impacts. Non-passerines were primarily targeted due to their vulnerability, while passerines were recorded as incidental to provide a complete ornithological overview.

12.14.8. The EIAR incorporates detailed baseline surveys adhering to NatureScot guidance. Bird flight activity surveys spanned several seasons, ensuring a minimum of 36 hours of observation at multiple vantage points to track avian movements accurately. For terrestrial mammals, dedicated surveys identified key resting and breeding sites, employing GPS mapping for precise documentation and trail cameras to monitor activity. Bat surveys included habitat appraisals and emergence studies to identify roosting and foraging activities, with activity surveys using both transect walks

and static detectors to capture a full spectrum of bat calls throughout various seasons. Fisheries and aquatic ecology assessments were carried out with a catchment-level perspective, looking at physical watercourse characteristics and fish stocks. Notably, a targeted search for the white-clawed crayfish and a precautionary eDNA analysis for freshwater pearl mussels were conducted to ensure these sensitive species were accounted for. The report states that Otter and Kingfisher surveys coincided with aquatic studies, recording signs and feeding evidence, which was important for understanding these species' interactions with the proposed development. Macrophyte surveys and biological water quality assessments provided insights into the riverine ecosystems' health and biodiversity.

12.14.9. The EIAR acknowledges certain constraints and limitations in data collection and analysis for ecological receptors. The desk study data, while setting a context, may not be exhaustive and field surveys were designed to complement this. For ornithological surveys, accepted methodologies were followed, and while some winter surveys were slightly short of the recommended hours, the coverage was considered adequate for a robust assessment. Suboptimal weather conditions occasionally affected visibility but were not deemed to significantly compromise data validity. The EIAR notes that a single year of breeding wader surveys was deemed sufficient due to the habitat's limited suitability. Nocturnal surveys were omitted based on evidence suggesting a lower collision risk for nocturnal migrants at wind energy facilities. In bat surveys, changes in the site layout after the deployment of static detectors and the inability to access some houses for roost surveys were noted. The Ecobat tool's unavailability was mitigated by adapting NatureScot's guidance to assess the collision risk to bats. For fisheries and aquatic ecology, some riverine sites were dry, preventing electro-fishing, and low summer river levels may have influenced biological water quality samples. Despite these challenges, the EIAR aimed to provide a comprehensive ecological assessment, with detailed descriptions of the methodologies and their adaptability to constraints found in the technical appendices.

12.14.10. The EIAR utilises CIEEM guidelines to assess the significance of ecological impacts, focusing on Important Ecological Features (IEFs) that could be affected by the development. These assessments are based on a defined Zone of Influence (ZoI), which considers direct and indirect connections between the development and ecological receptors. This includes hydrological and hydrogeological pathways,

determining the extent of both direct effects (up to 50 m from infrastructure) and indirect effects, which vary based on receptor sensitivity.

12.14.11. The importance of ecological receptors is evaluated within various geographical contexts, from local to international, using criteria such as legislative designation and ecological value. For instance, sites like SACs or SPAs are considered internationally important. The evaluation also considers ecological trends and published lists to determine the conservation status and distribution of species, applying a '1% criterion' for significant populations. Impact characterisation follows CIEEM and EPA guidelines, describing impacts in terms of quality, extent, context, magnitude, and more, to precisely define their ecological significance. This methodology allows for an understanding of how the proposed development might alter ecological conditions. Significant effects are defined per BS42020 standard, necessitating comprehensive assessment for informed decision-making. For birds, the Band Collision Risk Model is used to estimate potential collision risks based on species activity and turbine characteristics. Similarly, for bats, risk assessments include habitat and activity evaluations, supplemented by the Ecobat tool when available, to gauge collision risks accurately. Cumulative impacts are also considered, identifying potential additive or connected effects from concurrent projects or those in temporal proximity. This approach ensures that the assessment accounts for all possible environmental alterations caused by the proposed development. The mitigation hierarchy is applied where significant effects are identified, prioritising impact avoidance, followed by mitigation measures to minimise unavoidable impacts, and compensation where necessary. Enhancement measures are also proposed to provide additional biodiversity benefits beyond basic mitigation or compensation.

12.14.12. **Existing Environment**

12.14.12.1. Designated Nature Conservation Sites

12.14.13. The EIAR describes that the proposed wind farm and its associated cable route options are not situated within any SAC or SPA, nor do they adjoin any, with the exception of Option 1 Cable Route's adjacency to the River Barrow and River Nore cSAC (now designated). The EIAR indicates hydrological connections between the development sites and the River Barrow and River Nore cSAC, particularly affecting

riparian habitats and species with potential for ecological connectivity. Despite the presence of six SACs within a 20 km radius, only the River Barrow and River Nore cSAC has direct relevance to the development due to these connections. The River Nore SPA is linked hydrologically downstream, and while the Slieve Bloom Mountains SPA, also within 20 km, is home to the hen harrier, its ecological connection to the site is considered weak, with only occasional sightings during winter. The EIAR notes there is no connectivity beyond 20 km to any international site, and connectivity or potential connectivity that requires further consideration has been highlighted in bold within Table 15-5 of the EIAR.

12.14.14. The EIAR clarifies that for National Sites, the same criteria used for evaluating ecological connectivity to SACs and SPAs were applied to NHAs and pNHAs, considering sites within a 20 km radius of the proposed development and cable route options. It was determined that none of the NHAs have a source-receptor connection to the proposed development. Amongst the 31 pNHAs in proximity, Timahoe Esker pNHA, Clopook Wood pNHA, and Grand Canal pNHA were identified as having potential source-receptor links. The EIAR posits that Timahoe Esker pNHA has a downstream hydrological connection, although its habitats are not aquatic or water-dependent. Clopook Wood pNHA could have an ecological link through foraging badgers, while the Grand Canal pNHA is connected hydrologically to habitats, potentially impacting protected species such as otters.

12.14.15. The EIAR details that only pNHAs like Timahoe Esker and Clopook Wood, in proximity to the development, might be affected by air emissions such as dust. Light or noise emissions were not considered a disturbance risk due to the distance from the proposed development. The report states that where pNHAs coincide with SACs or SPAs, the latter's designation takes precedence, and any effects are assessed in the NIS, not in the EIAR biodiversity chapter, unless the pNHA extends beyond the Natura site boundaries, which is not the case here. The EIAR also notes that certain pNHAs overlapping with SACs/SPAs are also designated as nature reserves, such as Timahoe Esker, Slieve Bloom Mountains, and Grantstown Wood and Lough pNHAs. The EIAR states that qualifying interests with actual connectivity to the proposed development or cable route options are highlighted in bold within Table 15-6, indicating their inclusion in the Zone of Influence.

12.14.15.1. Habitats

12.14.16. The EIAR's existing environment assessment establishes that no Annex I habitats are present within the project's footprint or along the cable route options, substantiated by both desktop and field survey data. The Southern Cluster, forming a substantial part of the site, contributes minimally to ecological networks, indicating a lower biodiversity significance. The Northern Cluster has a slight contribution to one ecological network. Habitats surveyed include conifer plantations, predominantly Sitka spruce, which cover a major part of the site and cable routes and where key development infrastructure is planned. These plantations are not on peatland, ruling out the possibility of peat habitat restoration post-deforestation. Varied habitats such as improved agricultural grassland, amenity grassland, dry meadows, and drainage ditches were recorded, with a comprehensive breakdown provided in Table 15-7. The table also details the extent of these habitats within the project's area and their association with potential European Annex I habitats. Connectivity to ecological networks was evaluated, revealing that most land within the site has limited ecological significance. No Annex I habitats were detected adjacent to the development, and detailed habitat mapping further informs the assessment with visual aids like Figure 15-5, which positions habitats in relation to the development's blueprint. The cataloguing of these habitats, their location, and coverage forms a critical part of the baseline environment assessment for the proposed wind farm development.

12.14.16.1. Rare Flora and Invasive Non-native Plants

12.14.17. The EIAR states that the desktop study and field surveys found no records of rare or protected flora at the proposed wind farm site, along either of the Cable Route Options, or the TDR. The study area, predominantly a conifer plantation and agricultural land, is considered to offer limited potential for such species. Regarding invasive non-native plants, the EIAR details seven species identified in the desktop study with the potential to be present on the site. Field surveys confirmed the presence of species like Japanese knotweed and cherry laurel within the site, and others, including Himalayan honeysuckle, adjacent to Cable Route Options and the TDR. The EIAR notes that among these, Japanese knotweed and Canadian pondweed are listed on the Third Schedule of the European Communities (Birds and Natural Habitats)

Regulations, with knotweed found at quarry edges and pondweed at aquatic sites related to the project.

12.14.17.1. Birds

12.14.18. The EIAR indicates through BirdWatch Ireland's sensitivity mapping that the proposed development poses a low sensitivity to at-risk avian populations concerning wind farm developments. The data, which encompass a period from 2012 to 2017 and includes opportunistic records, reveal the presence of 34 species of conservation concern. This tally includes six Annex 1-listed species, such as the hen harrier and the peregrine falcon, and a range of 13 red-listed species, like the barn owl and common snipe, suggesting their potential presence within or in proximity to the site.

12.14.19. The EIAR further details the outcomes of flight activity surveys within the Collision Risk Zones (CRZs), determining a sparse incidence of 'at risk' flight activity, even among species that typically fly in formations, which is pivotal in assessing collision risk with wind turbines. Notably, the hen harrier, an SCI species for nearby Special Protection Areas (SPAs), was observed only commuting through the area. Tables within the EIAR summarise the flight data, providing evidence that actual collision risks are minimal, as the majority of flights occur outside the rotor-swept area. Additionally, the EIAR notes the absence of significant records for avian activity along the proposed Cable Route Options, except for isolated records of species such as the little egret and the barn swallow.

12.14.20. The EIAR summarises the findings of the breeding wader and raptor surveys, which demonstrate a potential for breeding but a lack of definitive evidence. The 2022 wader surveys reported no sightings of breeding waders within the site, yet the drumming of a common snipe nearby suggests possible breeding activity. For raptors, while several territories were recorded in 2021 and calls heard from common buzzards, kestrels, and sparrowhawks indicative of breeding, no nests were found on or near the site. Peregrine falcons were observed, and a quarry nearby was identified as a potential roost, but again, no conclusive signs of breeding were detected. Additionally, the winter surveys for swans and geese in 2021/22 noted an absence of these birds within the surveyed areas.

12.14.21. The EIAR's winter walkover surveys and incidental sightings provide a snapshot of bird activity around the proposed development site. The surveys, detailed

in Appendix 15.2, recorded various Annex I, red-, and amber-listed species, with notable counts for common snipe, goldcrest, and common starling, among others. The incidental sightings indicate probable but unconfirmed breeding activity for species like Eurasian woodcock, while a range of other species, including mallard and grey heron, were observed outside the primary survey area. No evidence of breeding was detected for species like the northern lapwing and barn owl, and habitats were deemed limited for kingfishers.

12.14.21.1. Terrestrial Mammals (Excluding Bats)

12.14.22. The EIAR states that nine species of rare and/or protected mammals and five species of invasive or non-native mammals have the potential to be present at the site, as indicated by desktop data. Field surveys recorded eight mammal species directly and inferred the likely presence of six additional species, including the Eurasian pygmy shrew and the European rabbit, based on suitable habitat availability. Notable observations included badger signs but no setts within 100 meters of the project, two pine marten sightings and associated roadkill, signs of red squirrel foraging, Irish hare sightings, and one greater white-toothed shrew carcass. Fallow and sika deer were noted for their presence and foraging evidence, and red foxes were detected throughout the turbine cluster areas. No direct threats to breeding sites were observed, as no dens or dreys were found within the immediate vicinity of the project area.

12.14.22.1. Bats

12.14.23. The EIAR indicates that the proposed wind farm area hosts a moderate-risk habitat for bats, consistent with findings from the bat landscapes suitability index. The recorded mean scores for the Northern and Southern Clusters suggest the presence of foraging and commuting habitats but are not indicative of high suitability. The data search identified eight bat species that could inhabit the site, reinforced by historical records from 2018 surveys showing actual bat activity in the area. Eleven bat roosts have been identified within a 10 km radius, with the closest mixed-species roost exhibiting ecological connectivity to the site, located 2.6 km away.

12.14.24. Field surveys have confirmed the presence of eight bat species, including those at high risk of collision with wind turbines, with common pipistrelles, Leisler's bats, and soprano pipistrelles being the most commonly detected. High activity for these species

was recorded in forest edge habitats during spring and summer, with a notable peak in activity on certain nights. The EIAR details that no roosting bats were found within 100m of the Northern Cluster, and only one ash tree with moderate roosting potential was identified 80m near turbine T12 in the Southern Cluster. Structures along the Cable Route Options were assessed for roost potential, revealing that most had low to moderate suitability, with one sandstone bridge on Option 2 identified as having high potential for roosting bats due to its crevices.

12.14.25. The habitats within the project site, characterised by linear features like hedgerows and streams, contribute to ecological connectivity, enhancing the site's value for bat foraging and commuting. The transect surveys indicated regular commuting and foraging activities of common and soprano pipistrelles along the forest edges, particularly near significant trees and over watercourses, with less frequent observations of other species like Leisler's and Nathusius' pipistrelles. The overall bat activity showed a marked seasonal variation, with autumn activity levels being significantly lower than those in spring or summer. Additionally, the location of the site on the range edge of Nathusius' pipistrelle suggests a geographical limitation to the species' regular occurrence. Despite the absence of comparative data from the Ecobat tool, the EIAR utilises the vulnerability of bat populations as a justified categorisation for assessing the site, which is supported by the guidance from NatureScot.

12.14.25.1. Other Protected Fauna

12.14.26. The EIAR indicates that, based on desktop data, the site's native reptile, the common lizard, is unlikely to be present due to the absence of its typical coastal and heathland habitats. For amphibians, the common frog has been recorded, with the site providing suitable foraging and breeding habitats. Although no records exist for the smooth newt, limited suitable habitats are present, which could suggest its potential presence. In the invertebrate category, while the rare marsh fritillary butterfly is unlikely to be found due to the absence of the caterpillar's food plant, Devil's bit scabious, the endangered Gooden's nomad bee could potentially inhabit the site, as suitable habitats are present. Field surveys corroborated the presence of the common frog and incidentally detected the smooth newt. No rare, threatened, or invasive invertebrate species were observed during field surveys, which aligns with the unsuitability of habitats for the marsh fritillary. However, the presence of Gooden's nomad bee is

deemed probable based on available foraging and breeding habitats, despite not being recorded in field surveys.

12.14.26.1. Fisheries and Aquatic Ecology

12.14.27. The EIAR details historical records of several fish species within the survey area, including brown trout, stone loach, minnow, three-spined stickleback, Atlantic salmon, dace, and lampreys, along with white-clawed crayfish and otter. Notably, the freshwater pearl mussel, an ecologically sensitive species, has been historically recorded mainly upstream of the site and Grid Route Options. Field surveys confirmed the presence of the common frog and various fish species, with salmonids present at 15 survey sites, albeit in small populations. Lamprey ammocoetes were found at a few sites, but optimal conditions for lamprey were limited, and European eel was recorded in low densities at two sites. No significant populations of white-clawed crayfish were detected, though environmental DNA analysis confirmed its presence in the Owveg and Clogh rivers. Otter signs were scarce, found at only four sites, with no breeding areas identified close to the survey sites. Invasive Canadian pondweed was recorded at two river sites, indicating its widespread presence in Irish waters.

12.14.28. Table 15-12 of the EIAR provides an evaluation of ecological features within the Zone of Influence (ZoI), identifying 'Important Ecological Features' (IEF) that are protected and warrant impact assessment. These include designated conservation sites such as the River Barrow and River Nore cSAC and SPA due to potential hydrological connections impacting qualifying species and habitats. Locally significant habitats providing connectivity and ecological corridors, such as eroding/upland rivers, drainage ditches, and various woodland types, are recognised for their value in supporting a diverse range of species. Specific species of birds, mammals, and aquatic life, including those of conservation concern like the European golden plover and white-clawed crayfish, are noted for their regional or national significance. The EIAR indicates that certain modified habitats and widespread species do not constitute IEFs due to their lesser ecological value or abundance in the wider landscape.

12.14.29. **Potential Impacts on Biodiversity**

12.14.29.1. Potential Impacts during Construction Phase

12.14.30. The EIAR details that during the construction phase, potential environmental impacts are expected to include habitat loss and disturbance, primarily from infrastructure work such as trench excavation for cabling and vegetation felling for mitigation efforts. The construction phase is set to last 18-24 months. The report states that direct effects will arise from the clearance of natural elements for site access and turbine foundations, as well as from temporary construction works. Indirect effects may result from on-site material management, dust emissions, altered water runoff and hydrology, introduction of invasive species, and disturbances from construction activities to local wildlife. Both direct and indirect impacts are anticipated to be short-term, aligning with the construction timeframe.

12.14.31. **Designated Conservation Sites:** The EIAR notes that while Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are thoroughly addressed within the Natura Impact Statement, non-overlapping Natural Heritage Areas (NHAs) or proposed NHAs (pNHAs) like Clopook Wood pNHA and Grand Canal pNHA warrant separate assessment. The EIAR states that there are no direct effects on these sites from the proposed wind farm development, as construction is neither within nor adjacent to them. The report describes potential indirect effects on the Grand Canal pNHA, especially through hydrological connections, which could, without mitigation, lead to low-level sedimentation affecting habitats and species such as opposite-leaved pondweed, otters, and smooth newts. The EIAR posits that significant adverse effects are not anticipated on Clopook Wood pNHA, owing to a lack of significant effects on badgers - a species with a remote ecological connection to the area. Additionally, the EIAR puts forward that possible water quality reduction from sedimentation or pollution due to construction activities could negatively impact aquatic life; however, no invasive species from the project are likely to spread to these pNHAs.

12.14.32. **Habitats and Flora:** The EIAR posits that the construction of the proposed wind farm would result in the direct loss of habitats; predominantly those of lower ecological value and common in the wider landscape, with no rare or threatened plant species affected. Significant direct effects at a local scale would arise from the permanent loss of habitats like mixed broadleaved woodland and temporary loss of hedgerows and scrub, whereas the removal of conifer plantation is seen as potentially positive, enhancing biodiversity. No riparian habitats would be lost. Indirectly, potential effects include sediment smothering and soil compaction adjacent to valuable

ecological corridors like hedgerows, which could impact plant health. The spread of invasive species, particularly Japanese knotweed, presents a significant risk to a variety of habitats if mitigation measures are not implemented. With variations in turbine locations resulting in minimal habitat losses, the report indicates that effective mitigation is crucial to prevent significant negative impacts on local biodiversity during construction.

12.14.33. **Birds**: Regarding potential construction effects on birds within the proposed wind farm site, the EIAR details that direct effects such as nest damage or destruction, habitat loss, and disturbance or displacement would be minimal. The EIAR posits that no nests for IEF bird species were found within the surveys. The report details how the construction of the proposed development is projected to cause habitat loss totalling 73.4 hectares, mainly of low-value habitats which are not unique and are common in the wider landscape. Thus, the report states this loss is not expected to significantly impact sensitive bird groups, and any incidental habitat loss will have negligible changes in direct effects across different turbine permutations.

12.14.34. The EIAR indicates that the most notable habitat losses include commercial conifer plantation (46.1 ha) and improved agricultural grassland (9.8 ha), which could displace wintering species such as redwing and meadow pipit. However, sufficient alternative habitats nearby render these effects insignificant. Woodland birds may experience habitat displacement, but this is mitigated by ex-situ and in-situ habitat replacement. Additionally, no significant construction impacts are foreseen for IEF bird species like the European golden plover, hen harrier, and common kestrel, with the possibility of positive effects due to habitat improvements following forestry clearance.

12.14.35. Disturbance or displacement from construction noise and visual effects are considered unlikely to result in significant impacts due to the implementation of buffer zones and timing construction to avoid sensitive periods. In the EIAR's analysis, disturbance effects during construction are unlikely to be significant for all identified bird species, and the EIAR posits that any effects are mitigated with appropriate measures. The EIAR posits that indirect effects such as pollution or dewatering of wetland habitats will not lead to significant habitat loss for bird species due to effective mitigation measures in place. Therefore, no significant indirect effects on birds are expected from the proposed development. Any variance between turbine options will yield negligible changes to the predicted indirect effects for birds.

12.14.36. **Terrestrial Mammals (Excluding Bats):** The EIAR states that the direct effects on terrestrial mammals (excluding bats) from the construction of the proposed wind farm may include the destruction of or damage to resting, hibernating or breeding sites, leading to potential harm or mortality to various species during sensitive periods such as hibernation or breeding. Specifically, arboreal species like pine martens and red squirrels, as well as ground-dwellers such as badgers and hedgehogs, could be affected by habitat destruction due to tree or vegetation removal and ground works. However, no mammal dwellings were recorded within the immediate vicinity of the work's footprint, indicating a reduced likelihood of disturbance.

12.14.37. The EIAR notes that the Zone of Influence (ZoI) for significant effects is defined at varying distances for different species, suggesting that, with appropriate mitigation, there should be no likely direct effects on badgers, red squirrels, or pine martens. Nevertheless, the EIAR posits that hedgehogs, which hibernate and thus are immobile, could be significantly affected at the local scale if construction occurs in winter without mitigation. Indirect effects identified by the EIAR include loss of foraging, commuting, and sheltering habitat due to construction. Despite the potential habitat reduction for arboreal species, the EIAR finds no significant indirect effects for these mammals due to the availability of displacement habitats within and beyond the study area. Moreover, the EIAR indicates that other species, such as badgers, Irish hares, hedgehogs, and fallow deer, are unlikely to experience significant indirect effects as their habitats are common and widespread.

12.14.38. The EIAR describes the risk of disturbance from noise and increased human activity, which could potentially displace foraging individuals or cause mammals to abandon breeding sites. However, the EIAR details that due to the absence of dwellings within 100 meters of the development and the presence of abundant alternative foraging habitats, significant effects from such disturbance are unlikely for most species. The exception is the hibernating hedgehog, which the EIAR suggests could experience significant indirect effects in the absence of mitigation measures. The EIAR posits that any changes in the turbine permutations assessed will not significantly alter the direct or indirect effects predicted for the identified terrestrial mammals.

12.14.39. **Bats**: The EIAR details how the proposed wind farm development is unlikely to result in direct effects on bat species as no bat roosts have been confirmed within the

construction footprint. The report details that an abandoned farm shed, initially a potential concern for roost disruption, was not utilised by bats. Additionally, the EIAR describes that cabling and tree trimming activities have been assessed, revealing no significant potential for roost disturbance due to either a lack of bat roost features in the trees or the cabling works being confined to areas unlikely to affect bats. The EIAR describes how indirect effects might include loss of habitats used for foraging and commuting, particularly affecting species such as the common pipistrelle, soprano pipistrelle, and Leisler's bat. The EIAR notes that linear features like hedgerows and watercourses, important for bat movement and feeding, will be impacted by the development. The EIAR states that the variability in turbine permutations would have a negligible influence on the effects on bats.

12.14.40. **Other Protected Fauna:** The EIAR indicates that direct effects on other protected fauna, such as amphibians, from the proposed wind farm development, are likely to be negligible, given that habitats for species like the smooth newt are situated sufficiently away from the construction zone, mitigating the risk of significant mortality. While spawning common frogs might be negatively impacted where they breed on forestry tracks without mitigation, no other protected or rare species, including Gooden's nomad bee, are expected to suffer notable effects due to their absence in the surveys or their widespread habitat. Indirect effects, particularly the loss of foraging habitats for amphibians and the nomad bee, are considered unlikely to be significant given the prevalence of such habitats in the study area and landscape, and variations in turbine layout are assessed as having an inconsequential impact on these fauna.

12.14.41. **Fisheries and Aquatic Ecology:** The EIAR states that direct impacts on fisheries and aquatic ecology may include the loss of natural watercourses, water quality degradation, and loss of freshwater habitats, which can arise from watercourse crossings and culverts, and the addition of pollutants like suspended solids, hydrocarbons, and cement leachate within watercourses. However, since there are no identified important ecological features (IEF) within the proposed development boundary, significant direct effects on key species such as Atlantic salmon, lampreys, European eel, white-clawed crayfish, and otter holts are not anticipated. Indirect effects might include the release of pollutants that could reduce water quality and negatively affect downstream habitats and species, with consequential significant impacts at the county/regional level for certain species and habitats if unmitigated.

Particularly for salmonids, indirect effects like increased turbidity, siltation, and acidification could substantially impact life cycles, habitat quality, and prey availability, ultimately affecting populations and predators like the otter. The EIAR posits that the impact of turbine permutations on these ecological aspects is likely negligible, with mitigation being crucial to avoid significant adverse effects.

12.14.41.1. Potential Impacts during Operation Phase

12.14.42. **Designated Sites:** The EIAR evaluates the potential operational phase impacts on designated sites, including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), as well as nationally designated potential Natural Heritage Areas (pNHAs) such as Clopook Wood and Grand Canal. The EIAR details that no significant direct effects are expected on any NHAs or pNHAs within the Zone of Influence (ZoI), as the development is not situated in these areas, and various turbine configurations are unlikely to alter this assessment. Indirect effects primarily concern the management of runoff and potential sedimentation from areas cleared for bat mitigation, which might impact nearby watercourses over the short term. Although no significant effects are anticipated on badgers, and hence on the integrity of Clopook Wood pNHA, there is a precautionary concern about potential acidification from felled conifers affecting pH-sensitive aquatic receptors downstream, with possible significant unmitigated effects on diverse habitats and species at a national scale including tall herb, reed fringe and open water habitats, otter, smooth newt and opposite-leaved pondweed species.

12.14.43. **Habitats and Flora:** The EIAR underlines that the potential direct effects on habitats and flora primarily involve the clearance of vegetation necessary to mitigate collision impacts on bat species, a measure initially assessed during the construction phase. The EIAR indicates that, due to the absence of groundwater-dependent habitats within the site, significant indirect effects on terrestrial habitats during the operational phase are unlikely. Furthermore, the EIAR posits that variations in turbine configurations will not significantly alter the assessment of indirect effects on Integrity Effect Feature (IEF) habitats.

12.14.44. **Birds**: The EIAR evaluates the operational phase effects on bird species, specifically addressing potential disturbances, displacement, barrier effects, and collision risks associated with wind turbines. The EIAR indicates that operational

activities could potentially disturb or displace birds due to the noise and physical presence of wind turbines and maintenance activities. Such disturbances are typically reduced after construction as birds may become habituated to the turbines. Barrier effects are also noted, where turbines could alter the natural movement patterns of birds, potentially forcing them into less optimal habitats, thereby increasing their energy expenditure and affecting their survival or breeding success. Impact on specific species are detailed as follows:

- Common Snipe and Eurasian Woodcock: The EIAR describes that while the displacement and barrier effects for foraging snipe and woodcock are considered negligible due to the abundant displacement habitats in the landscape, their breeding activities could be subtly impacted. However, with snipe and woodcock not at carrying capacity within the site and ample similar habitats available nearby, significant impacts are unlikely.
- Peregrine Falcon: The assessment acknowledges a quarry approximately 3.3 km from the nearest turbine as a probable breeding site for peregrine falcons. Given advised buffer distances, direct disturbance to breeding falcons is unlikely, and any barrier effects are expected to be minimal due to the availability of optimal habitats outside the site.

12.14.45. The EIAR recognises that collisions are deemed almost certain to be fatal for birds involved, with raptors and larger birds at higher risk due to their lower population densities and slower reproductive rates. The EIAR employs Collision Risk Models (CRM) to predict the frequency of such incidents, factoring in bird behaviour, turbine layout, and environmental conditions. The EIAR uses precautionary principles in its analysis, assuming significant impacts if additional mortality exceeds 1% of the existing background rates. For instance, the avoidance rates applied are conservatively high to potentially overestimate the true collision risks. Species-Specific Collision Risks are detailed as follows:

- European Golden Plover: Despite low flight activity near turbine areas and a high avoidance rate, the predicted collision rate is extremely low, suggesting negligible impacts on the regional population.

- Common Kestrel: With slightly higher flight activity, the predicted collision rates for kestrels are higher, yet still represent a minor increase in background mortality, which may not signify a significant impact at the regional level.
- Peregrine Falcon: Given their infrequent flight activities through the site and high avoidance rates, collisions are predicted to be rare, with minimal impact anticipated on the regional peregrine population.
- Northern Lapwing: The collision risk analysis for Northern Lapwing indicates a very low frequency of collisions, with an estimated mean annual collision rate suggesting an occurrence every 8.08 years. Given the species' background mortality rate and the minor predicted increase due to collisions, the impact on both the ROI and county/regional populations is considered not likely to be significant. This aligns with the general rarity of reported collisions involving this species at wind farms across Europe.
- For Common Snipe, data indicates a slightly higher likelihood of collision, with a collision predicted approximately every 2.3 years. Despite this frequency, the impact on the population, measured against background mortality rates, suggests that the increase in mortality is minor and unlikely to significantly affect the population at the county/regional scale. The ample alternative habitats available mitigate the potential loss of individuals due to turbine collisions, further reducing the overall impact on the species.

12.14.46. The EIAR assesses the indirect effects on birds as primarily associated with potential habitat changes and pollution incidents such as hydrocarbon spills during the operation phase. However, the EIAR posits that with the implementation of mitigation measures, significant indirect effects on bird species are unlikely. The report submits that any differences between the range of turbine permutations will result in negligible changes to the indirect effects for IEF birds.

12.14.47. **Terrestrial Mammals (Excluding Bats):** The EIAR details that direct effects, such as inappropriately timed vegetation removal within bat mitigation buffers, could potentially impact breeding or resting sites for arboreal mammals like red squirrels and pine martens, as well as ground-dwelling mammals, including badgers and hedgehogs. However, the EIAR indicates that no mammal breeding or resting sites were recorded during surveys in these areas, thus significant direct effects are

considered unlikely. Indirect effects could arise from the displacement of mammals due to vegetation removal for bat mitigation buffers. This may particularly affect hedgehogs, which could experience significant local impacts if their hibernacula are disturbed, leading to premature awakening and potential mortality in the absence of adequate food. Nevertheless, the EIAR posits that, given the abundance of suitable habitats in the wider area, significant displacement or disturbance to other mammals such as badgers, pine martens, red squirrels, Irish hares, and fallow deer is unlikely. The report submits that any variations in turbine configurations would result in negligible changes to both direct and indirect effects predicted for these mammals.

12.14.48. **Bats:** The EIAR states that the direct effects on bats, primarily collision with turbines and barotrauma, are influenced by the proximity of turbines to key habitat features like hedgerows, treelines, or forest edges. According to NatureScot (2021) guidelines, reducing vegetation near turbines mitigates the likelihood of such incidents. The report details that high-risk species like the common and soprano pipistrelle, and Nathusius' pipistrelle, are particularly vulnerable due to their flying patterns and habitat usage, with recorded fatalities supporting this concern. However, mitigation measures and site management practices are expected to reduce these risks. Indirect effects, such as disturbance from operational lighting, are noted but considered not significant due to minimal additional lighting on turbines and careful placement at the substation to minimise impact on light-sensitive species. The EIAR posits that, with ongoing mitigation measures, significant impacts on bat populations during the operational phase of the wind farm are unlikely.

12.14.49. **Fisheries and Aquatic Ecology:** The EIAR states that no Integrity Effect Feature (IEF) aquatic habitats or species are located within the red-line boundary of the project, leading to the conclusion that significant direct effects on aquatic ecology are unlikely during operation. It notes that variations in turbine configurations would result in negligible changes to this assessment. However, the EIAR describes potential indirect effects such as the release of suspended solids or hydrocarbons into watercourses, which could affect downstream aquatic habitats and species, including Annex 1 floating river vegetation, Atlantic salmon, brook and river lamprey, European eel, white-clawed crayfish, and otter. It posits that without appropriate mitigation measures, these releases could have significant effects at the international scale for most species and at the national scale for the European eel. The report details that,

as with the direct effects, variations in turbine configurations are not expected to alter the scale of indirect impacts significantly.

12.14.49.1. Potential Impacts during the Decommissioning Phase

12.14.50. The EIAR details that the potential decommissioning phase impacts on biodiversity are predicted to be similar to those experienced during the construction phase. The EIAR notes that activities such as ground clearance, increased noise, light levels, and the presence of construction personnel, which initially disturbed IEF birds, bats, and mammals, will recur, albeit at a slightly lower magnitude, due to fewer materials being needed and less habitat being removed. It describes that surface water quality could again be compromised by ground disturbance and the accidental release of hazardous materials, affecting designated aquatic sites and fish ecology. The report also mentions the risk of spreading invasive plant species during this phase. The EIAR posits that while the effects during decommissioning will mirror those during construction, the overall intensity of these impacts will be reduced, and any variations in turbine configurations are expected to have negligible changes on the assessed effects for all IEF receptors.

12.14.51. **Cumulative Impacts**

12.14.52. The EIAR includes an analysis of cumulative impacts, focusing particularly on potential hydrological and hydrogeological interactions with nearby developments within a 20 km radius, as outlined in the IWEA (2012) guidelines. The EIAR details various other planned and existing projects, such as Cullenagh, Pinewoods, and Gortahile wind farms, which share similar drainage basins and bedrock aquifers, raising concerns about the combined effects on watercourses feeding the Rivers Barrow and Nore. It posits that projects like Lisdowney, Seskin, and Farranrory wind farms lack hydrological or hydrogeological connections.

12.14.53. The EIAR identifies potential cumulative impacts during the construction phase, primarily concerning water quality changes in watercourses draining from the development site. The EIAR notes that without mitigation, these changes could significantly affect downstream nature conservation sites like the River Barrow and River Nore SAC, and River Nore SPA, as well as aquatic species including Atlantic salmon and white-clawed crayfish. The report highlights the proximity and hydrological

connections of other operational, consented, and proposed developments, which could exacerbate these impacts if constructed simultaneously without adequate mitigation measures. Particularly, projects in the planning stages, such as the White Hill wind farm, pose a risk of significant negative cumulative effects on water quality. The EIAR describes the current water quality status in the affected areas, indicating varied ecological statuses across different sites, with some achieving good status and others poor. It also mentions specific discharges and licences within the catchment that could influence water quality. Despite these potential cumulative impacts, the EIAR concludes that with effective mitigation strategies, there would not be an adverse effect on the integrity of Natura 2000 sites, suggesting that significant cumulative effects on these sites are unlikely during the construction phase.

12.14.54. The EIAR evaluates the potential cumulative impacts during the operational phase, focusing particularly on long-term effects given the project's proposed 35-year lifespan. The EIAR indicates that operational impacts stem from the turbines, hardstands, access tracks, and substation. With the grid connection being underground, it notes that there are no expected impacts from underground cabling/ducting. The report describes that, within the context of a landscape heavily modified by agriculture and forestry, habitat changes due to the development are considered fully reversible. However, in the absence of mitigation, the EIAR puts forward concerns about several potential cumulative impacts: deterioration of water quality in the River Barrow and River Nore SAC, River Nore SPA, and Grand Canal pNHA, which could affect Qualified Interest (QI) species and habitats; increased collision risk and barrier effects for sensitive bird populations; habitat loss and disturbance impacts on local bird and bat populations; and heightened collision risks for bats.

12.14.55. The EIAR details the potential impacts on water quality, noting significant sources of concern during both construction and operation phases. The EIAR identifies the main risk to water quality as likely stemming from runoff from bare ground exposed by felling to create bat mitigation buffers, which could lead to sedimentation and contamination issues, particularly if infrastructure such as turbine hardstands and access tracks are poorly designed or constructed. Additionally, improper reinstatement of the cable route and accidental hydrocarbon spills from service vehicles pose potential risks to watercourses and aquatic receptors. Without

appropriate mitigation, these activities could have significant negative effects on downstream designated sites such as the River Barrow and Nore SAC, River Nore SPA, and Grand Canal pNHA, affecting sensitive species and habitats, including Annex 1 floating river vegetation, Atlantic salmon, and various lamprey and crayfish species. The report details that these effects might be significant at regional or county scales, with potential for local impacts on Atlantic salmon and national impacts on the Grand Canal pNHA. However, the EIAR posits that with effective mitigation measures in place, as outlined in the Natura Impact Statement (NIS) included in Appendix 15.10, there should not be an adverse effect on the integrity of any Natura 2000 sites.

12.14.56. The EIAR assesses the cumulative impacts on bird populations, particularly focusing on displacement, collision, and barrier effects due to the operational phase of nearby wind farms. The EIAR details that while eight wind farms are in proximity to the proposed development, only some have completed collision risk assessments, showing generally low risk for significant cumulative effects. For instance, the EIAR describes the Cullenagh Wind Farm as having a low collision risk for predominantly passerine or corvid species, and similar conclusions are noted for other developments like Pinewoods and Gortahile Wind Farms, where operational displacement or significant barrier effects on IEF bird species are unlikely due to separation distances. Furthermore, the EIAR outlines quantitative assessments from Bilboa Wind Farm indicating very low predicted collision rates, suggesting long-term imperceptible impacts on species such as the common buzzard, common kestrel, and others. It posits that the cumulative collision risk, even when summed across developments, is overestimated due to precautionary assumptions used in modelling. The EIAR states that with mitigation measures, there would not be adverse effects on the integrity of Natura 2000 sites, indicating no likely significant cumulative effects on these sites from the proposed development in combination with other projects.

12.14.57. The EIAR assesses likely significant cumulative impacts on bats, primarily from collision and barotrauma due to operational wind farms. The report highlights that the eight nearby wind farm developments could contribute to these impacts, with varying degrees of risk assessment undertaken for each. For example, the Cullenagh Wind Farm, as noted in its EIS, recorded several bat species with the common pipistrelle most frequently encountered, indicating a potential for cumulative collision effects,

though considered low. The EIAR for Pinewoods Wind Farm reported only low numbers of bats, suggesting negligible cumulative effects.

12.14.58. The report emphasises the importance of implementing bat mitigation buffers, ensuring a minimum 50-meter separation from turbine blade tips to key bat habitats, which is expected to significantly mitigate collision risks throughout the proposed development's 35-year operational phase. However, despite these mitigation measures, the EIAR acknowledges the difficulty in predicting post-construction bat behaviour and admits that residual effects of low significance might still occur on local populations of high-collision risk species like Leisler's bat and common, soprano, and Nathusius' pipistrelle. Overall, the EIAR posits that while the cumulative impact from the Proposed Development and other nearby wind farms could potentially affect local bat populations, the implementation of mitigation measures such as bat buffers should effectively reduce these risks. It concludes that any differences in turbine configurations would result in negligible changes to the cumulative collision risk assessments for bats, ensuring minimal impacts on these species.

12.14.59. **Mitigation Measures**

12.14.59.1. Construction Phase

12.14.60. The EIAR outlines comprehensive mitigation measures during the construction phase to safeguard biodiversity, with a particular focus on protecting designated nature conservation sites, fisheries, and aquatic ecology. The measures include the implementation of a Construction Environment Management Plan (CEMP) and a Surface Water Management Plan (SWMP), which incorporate guidelines from multiple sources such as CIRIA and IFI to prevent deterioration of water quality and protect aquatic habitats. These measures aim to ensure compliance with the conservation objectives for the River Barrow and River Nore SAC, the River Nore SPA, and the Royal Canal pNHA. Key mitigation strategies involve the following:

12.15. Erosion and Sediment Control:

- Install interception drains upslope of proposed work areas to manage water flow.
- Position silt traps at discharge points from trackside swales.
- Block drains that discharge directly into watercourses from roadside swales.

- Equip perimeter swales with check-dams and cross-drains.
- Use sediment traps and specific discharge points to manage runoff from critical areas.
- Create settlement ponds to treat silt-laden water.
- Apply a protective layer of crushed limestone or sandstone to all access tracks to prevent sedimentation from traffic on the underlying shale.

12.16. Best practice pollution control measures:

- Control the release of suspended solids through interception.
- Manage site run-off using silt traps and settlement ponds.
- Locate straw bales or silt fences near watercourses to filter run-off.
- Secure all hazardous materials in bunded areas to prevent leaks.
- Position site machinery and storage at least 50 meters from any watercourse.
- Keep fuels, lubricants, and other fluids securely and manage spills promptly.
- Adhere to guidelines prioritising the protection of aquatic life and habitat integrity during construction near watercourses.
- Use clear span bridges over culverts where feasible to minimize impact on watercourses.
- Ensure any construction in watercourses is done in a manner that minimizes ecological disruption.
- Design temporary crossings to allow natural water flow and fish passage.
- Implement rigorous measures to prevent siltation and pollution during construction activities near watercourses.

12.17. Conserving water quality and aquatic life:

- Use Disturbed Sediment Entrainment Mats (SEDIMATS) in all watercourses draining from the site to enhance silt control.
- Follow manufacturer guidelines and coordinate with NPWS, IFI, and the Planning Authority for the installation of SEDIMATS.

- Integrate lagoon-type sediment traps and plant filtration beds into the Storm Water Management Plan (SWMP), as recommended by Altmüller and Dettmer (2006).
- Outline in the Construction Environmental Management Plan (CEMP) the use of machinery and methods to minimize ecological disturbance.
- Ensure secure storage of materials and equipment and careful site access.
- Use biodegradable oils in machinery to reduce environmental impact.
- Regularly inspect machinery for leaks and maintain to prevent pollution.
- Include a method statement for cleaning machinery to avoid the spread of non-native invasive species.
- Ensure equipment previously exposed to invasive species is cleaned and disinfected before use.
- Manage stockpiling of materials to minimize soil and spoil contamination.
- Erect temporary fencing to contain construction activities and reduce disturbance.
- Manage the removal of vegetation near watercourses to prevent acidification and protect water quality.

12.18. Habitats:

- Cable routes will mostly utilise existing roads, with only minor sections crossing through conifer plantation, grassland, and arable cropland.
- Construction will primarily upgrade existing forestry and farm tracks.
- To facilitate bat mitigation, felling will be confined to areas of commercial conifer plantation and some non-native mixed broadleaved woodland.
- Efforts will be made to minimise the extent of tree and hedgerow removal.
- Removed treelines or hedgerows will be replanted at suitable locations within the site using native species to enhance ecological connectivity.
- Access within the site will be limited to designated work corridors to prevent habitat disturbance.
- An Environmental Clerk of Works (ECoW) will oversee construction to ensure there is no unnecessary encroachment into sensitive habitats.

12.19. Invasive Plants:

- The Habitat and Species Management Plan (HASMP) outlined in Appendix 15.11 of Volume III of the EIAR includes specific measures to prevent the spread of invasive and non-native species during construction.
- Treat quarry materials to prevent the dispersal of invasive plants such as third-schedule Japanese knotweed.
- Ensure that construction activities near watercourses do not spread third-schedule Canadian pondweed.

12.20. Birds:

- Restrict access to the designated works corridor to minimise disturbance.
- Conduct vegetation clearance, including trees and hedgerows, outside the main breeding season from March to September to avoid damaging occupied bird nests.
- If necessary, perform pre-commencement surveys during the breeding season to ensure nests are not disturbed or destroyed.
- Maintain cleared areas in a way that deters nesting for the duration of construction, such as keeping the ground unsuitable for ground-nesting birds.
- Have a qualified ecologist oversee the construction process, informing contractors of ornithological sensitivities.
- Conduct regular bird nesting surveys and implement exclusion zones as needed.

12.21. Terrestrial Mammals (Excluding Bats):

- Although some woodland will be removed, connectivity for mammals will be maintained throughout the development phases.
- Conduct a pre-construction survey to identify any mammal resting or breeding sites.
- Establish exclusion zones and time construction activities to avoid sensitive periods like breeding or hibernation.
- Restrict construction activities to daylight hours to minimize disturbance to nocturnal mammals.

- Provide escape routes from excavations to prevent mammals from becoming trapped.
- Employ a qualified ecologist to monitor mammalian activity and enforce exclusion zones: 50 meters for red squirrels and badgers, 100 meters for pine martens, and 150 meters for otters.
- If exclusion zones are not feasible, consult with the National Parks and Wildlife Service (NPWS) to implement appropriate mitigation measures and potentially obtain a derogation licence.

12.22. Bats:

- All hedgerows and treelines removed during construction will be replaced within the site to maintain bat commuting and foraging routes.
- Prior to construction, ecologists will conduct detailed surveys of potential bat roosts in structures and trees along the cable route, adhering to Collins (2016) guidelines.
- Although no active bat roosts have been identified to date, pre-construction surveys will be conducted to identify and protect any newly occupied roosts.
- For trees with moderate to high potential roost features, further emergence, re-entry surveys, or roost inspections using tools like endoscopes and thermal imaging cameras will be carried out to assess bat occupancy and roost characteristics.
- If occupied roosts are found, the findings will guide the application process for a derogation license from the National Parks and Wildlife Service (NPWS), ensuring necessary mitigation measures such as bat exclusion or alternative roost provision are in place before vegetation removal.
- In cases where bat roosts are not detected, trees will be "soft felled"—carefully dismantled to avoid harming potential undetected roosts, with sections left intact for a minimum of 24 hours under suitable conditions to allow any bats to exit.
- For trees not scheduled for removal, exclusion zones proportional to construction disturbance will be established to avoid disturbance, with specific measures tailored to the type of roost and its usage pattern.

- To further protect bats, no night-time lighting will be used during construction to reduce potential disturbances to bat species.

12.22.1.1. Mitigation Measures During the Operation Phase

12.23. Designated Nature Conservation Sites, Fisheries and Aquatic Ecology:

- Maintain the wind farm's drainage system in accordance with the CIRIA C697 Sustainable Urban Drainage Systems (SuDS) and Maintenance Manual to ensure its effectiveness.
- Restrict site access with gates to prevent illegal activities such as dumping and unauthorized vehicle use.
- Securely store any stockpiled material within the proposed site compound or at least 50 meters away from any surface water drainage, preventing negative impacts on downstream aquatic receptors and designated conservation sites.
- Conduct a review of ecological mitigation measures during the operational phase to adapt and implement specific mitigation as needed to prevent significant environmental effects.

12.24. Birds:

- Maintain uniformly short vegetation heights within a 96 m to 103 m radius around each turbine to deter kestrels from foraging in the area. This will be achieved through infrequent mowing or trimming.
- Remove timber and brash from felling activities to reduce habitat attractiveness.
- Chip tree stumps to ground level, and spread and compact chipped wood along with spoil to create flat surfaces that discourage rapid vegetation regrowth.
- Modify open field and forestry drains by piping or filling them to make the habitat less attractive to kestrels and other foraging birds.

12.25. Terrestrial Mammals (Excluding Bats):

- Maintain connectivity between woodland habitats and linear features throughout the Proposed Development to support the movement and habitat use of terrestrial mammals.

- Replant any treelines and hedgerows removed during construction elsewhere on the site with similar vegetation, ensuring no net loss of linear habitats.
- Implement mitigation measures as detailed in Chapter 9 and Appendix 3.2 (CEMP) of the EIAR to protect water quality, thereby preventing significant adverse effects on species such as otters that rely on downstream habitats.

12.26. Bats:

- Create bat mitigation buffers by felling vegetation around turbines to make the environment less attractive to bats, thus avoiding collision and barotrauma.
- Maintain a 50 m distance from the blade tips of the turbine to the nearest habitat feature, free of trees and shrubs for the duration of wind farm operation.
- Implement feathering of blades to reduce rotation speeds below 2 r.p.m. during low wind speeds based on the results of the post-construction monitoring program. This measure is intended to prevent 'idling' that could harm bats.
- Curtailment involves raising the cut-in speed to reduce power generation and blade rotation, which will be implemented if feathering alone is not sufficient to reduce risk to bats.
- Post-construction monitoring to detect bat carcasses. If fatalities are notable, implement additional measures like adjusting feathering or curtailment settings.
- Bat activity seasons (April-October) and optimal temperature conditions will determine the timing for implementing these measures.

12.27. The EIAR outlines specific compensation measures to mitigate biodiversity loss due to development activities, as detailed in the Habitats and Species Management Plan (HASMP) in Appendix 15.11. The EIAR states that c. 52.78 hectares of woodland will be replanted ex-situ, in line with DAFM (2017) guidance, to compensate for the woodland habitats permanently removed. Additionally, to counter the loss of linear features, 141 metres of treelines and 938 metres of hedgerows will be replanted in situ, designed to enhance connectivity between existing habitat features, thus ensuring no net loss of these habitats.

12.27.1. **Biodiversity Enhancement**

12.27.2. The EIAR includes a variety of biodiversity enhancement measures detailed in Technical Appendix 15.11 of Volume III. These measures aim to support and enrich local wildlife populations and habitat diversity including:

- One swift tower will be erected to support nesting swifts.
- A total of eight insect hotels will be established across the site, with a minimum of three hotels per 35 hectares.
- A 5-meter-wide rough grassland buffer will be maintained around the borrow pit to serve as a habitat for pollinators.
- The project will create eight log or brash piles from hardwood trees and shrubs removed during site clearance for hedgehogs, and an additional eight for reptiles and amphibians.
- New and existing drainage ditches will be managed to benefit amphibian populations.
- Invasive plants will be prevented, contained, treated and eradicated.

12.27.3. These initiatives are part of a broader strategy, detailed in the HASMP, to compensate for habitat losses and enhance the site's ecological features, as summarized in Table 15-19 and illustrated in Figure 15-8 of the EIAR.

12.27.4. **Monitoring**

12.27.5. Prior to construction, ecological walkover surveys will confirm the absence of resting mammals, reassess potential bat roosts, check for nesting birds, and implement exclusion zones as necessary. If exclusion zones are infeasible, further mitigation will be advised by the NPWS with appropriate licences sought. Post-construction, water quality will be regularly monitored to assess the effectiveness of mitigation measures. For birds, the EIAR notes that flight activity surveys and collision monitoring will occur during the first three years to gauge turbine collision rates, with further measures developed if significant impacts are detected. Proposed mitigation and monitoring measures will be agreed upon with the planning authority prior to implementation. Similarly, bat interactions with turbines will be monitored through static detector surveys and potentially fatality monitoring, following the latest NatureScot guidance, to adapt management strategies effectively.

12.27.6. **Residual Effects**

12.27.7. No significant residual effects are identified in the EIAR.

12.27.8. **Assessment**

12.27.9. I have taken into consideration the issues raised in the Planning Authority report, departmental reports, and elected members' meetings, as detailed in Sections 8.0 above. I have also taken into consideration the issues and concerns raised in the observations received, the submissions from Prescribed Bodies, and the applicant's response to these submissions. As detailed above, I have undertaken a comprehensive review and analysis of the EIAR provided for the proposed wind farm development regarding biodiversity. My assessment focuses on the direct, indirect, cumulative, and residual impacts of the proposed development on biodiversity, with particular attention to species and habitats potentially affected by the project.

12.27.10. Regarding direct effects on biodiversity, the construction of the proposed wind farm would lead to the direct loss of habitat, primarily through the clearance of land for turbine bases, access roads, and infrastructure such as substations. This habitat loss predominantly affects commercial conifer plantations and improved agricultural grassland. Although these are not of the highest ecological value, they do serve as habitat for various wildlife species. To mitigate this effect, the proposed development includes habitat restoration and creation measures post-construction, such as replanting native species and enhancing existing hedgerows and scrubland to improve ecological connectivity.

12.27.11. Direct effects on species during the construction phase include potential mortality or displacement due to machinery movement and increased human activity. Specifically, species like the peregrine falcon, bats, and ground-nesting birds might suffer during these activities. The EIAR outlines measures such as limiting construction during sensitive breeding periods and implementing exclusion zones around known nesting sites to minimise these impacts. Moreover, construction protocols have been proposed to include speed limits, and the use of wildlife-awareness training for workers to reduce accidental harm.

12.27.12. During the operation phase, the primary direct impact on biodiversity is the risk of bird and bat collisions with turbine blades. This risk is particularly pronounced for

species that utilise the area for migration or have established flight paths that intersect with the turbine locations. The EIAR employs a Collision Risk Model to estimate and mitigate these risks. Mitigation measures proposed include the careful siting of turbines away from known flight paths and adjusting turbine operations during the bat activity season.

12.27.13. Direct effects on aquatic habitats are anticipated due to potential alterations in watercourses and increased sediment loads during construction. The EIAR details the use of silt traps, sediment ponds, and other water management techniques to prevent sedimentation and pollution of nearby streams and rivers, which are critical habitats for species like fish and amphibians.

12.27.14. The direct effect of increased noise and artificial lighting during both construction and operation could significantly impact wildlife, particularly nocturnal and crepuscular species such as bats and owls. To address this, the project proposes to restrict night-time construction and restrict nighttime lighting during construction.

12.27.15. Regarding indirect effects on biodiversity, the alteration of landscape and ground surfaces due to construction could affect local hydrology, potentially changing the water flow patterns through the area. These changes might lead to altered water tables and drainage patterns that could indirectly impact wetland habitats and aquatic ecosystems, which are sensitive to changes in water availability and quality. The EIAR has proposed monitoring and managing runoff through engineered solutions like stormwater management systems to mitigate such effects, ensuring that the natural hydrological regime is maintained as closely as possible.

12.27.16. The disturbance of soil and vegetation could create opportunities for invasive species to establish, which can outcompete native flora and disrupt local ecological balances. The construction activities could inadvertently introduce such species via machinery or transported materials. The EIAR outlines measures including the cleaning of construction equipment before entering the site and managing soil movement to prevent this potential biodiversity impact.

12.27.17. Regarding the cumulative effects of the proposed development, it is my view that these have been adequately addressed in the EIAR, particularly in relation to other existing and planned projects within the same geographical area. Regarding watercourses that feed into designated conservation areas, the EIAR acknowledges

that multiple projects sharing the same drainage basins could potentially alter the hydrology of the area, affecting aquatic habitats and species reliant on these water systems. However, the EIAR has addressed this through modelling and proposed extensive water management strategies that are designed to maintain water quality and flow regimes within natural variability, thereby preventing significant cumulative impacts.

12.27.18. The visual impact and operational noise of multiple wind farms could alter the behaviour patterns of sensitive wildlife species. The EIAR has considered these impacts by assessing the baseline noise and visual settings and proposing mitigation measures that include turbine siting considerations and operational management to minimise disturbances. Residual Impacts would not be significant.

12.27.19. In conclusion, it is my view that the proposed wind farm, subject to the implementation of the proposed mitigation measures and ongoing monitoring as outlined in the EIAR, would not have significant adverse effects on biodiversity. The proposed mitigation measures would prevent, reduce, and, where possible, offset the significant adverse impacts on the environment.

12.28. Interactions between the Factors in the EIAR

12.28.1. Article 3 of the EIA Directive, as updated by Directive 2014/52/EU, emphasises the assessment of significant effects of projects on various environmental factors. The EIAR's chapter on the Interaction of Environmental Factors utilises a matrix format to elucidate the potential for direct and indirect impacts across different phases of the Proposed Development. Key findings from the chapter are summarised as follows:

Population and Human Health:

- The EIAR notes potential health impacts from dust during construction, expected to be temporary and slight, with mitigation strategies detailed to minimise effects on nearby residential properties.
- The EIAR describes noise from construction and operational phases, such as from wind turbines and associated substation, with mitigation measures like sound barriers to limit disturbance to nearby populations.

Biodiversity:

- The EIAR details potential impacts on biodiversity from habitat loss during construction, with a Habitats and Species Management Plan incorporating a Biodiversity Mitigation Plan outlined to address and mitigate these effects.
- The EIAR posits that water pollution during construction could affect aquatic habitats; mitigation measures such as silt fences and careful management of excavation activities are described to protect these environments.

Land, Soil, and Geology:

- The EIAR describes the potential for soil erosion and changes in surface water runoff due to construction activities, with mitigation measures set out to prevent impacts on soil and water quality.

Air and Climate:

- The EIAR puts forward that operational activities of the wind farm will contribute positively towards national decarbonisation efforts, improving air quality and aiding climate change mitigation.

Water:

- The EIAR indicates that the management of surface and groundwater during construction phases has been thoroughly planned to prevent pollution and manage runoff effectively, incorporating climate change projections into water management strategies.

Landscape and Visual:

- The EIAR describes changes to the landscape from the construction and operation of the wind turbines, with assessments to minimise visual impact through careful siting and design of the turbines.

Cultural Heritage:

- The EIAR notes that the project's footprint avoids areas of significant archaeological and cultural importance, thereby reducing potential impacts on heritage resources.

Major Accidents and Natural Disasters:

- The EIAR posits that the risk of major accidents or natural disasters is low, with safety measures and emergency response strategies comprehensively detailed to mitigate potential risks.

12.28.2. I am satisfied that the EIAR adequately identifies and describes the interactions and potential impacts of the wind farm project on the environment. It provides a robust framework of mitigation measures to manage these impacts effectively during the construction, operational, and decommissioning phases.

12.29. Reasoned Conclusion

12.29.1. Having regard to the examination of environmental information detailed above, the EIAR and supplementary information provided by the applicant, and the submissions from the Planning Authority, observers and Prescribed Bodies in the course of the application, it is considered that the main significant direct and indirect effects of the proposed development on the environment are as follows;

- **Population and Human Health:** The proposed development would have both positive and slight adverse impacts on the local population and human health. The construction and decommissioning phases would temporarily boost the local population due to workforce requirements, with an anticipated increase in population density around the study area during work hours. This would return to normal levels post-work hours with minimal long-term impact. Economic activities during these phases would temporarily enhance local employment and economic interactions, positively affecting the local economy. Moreover, the development would provide long-term job opportunities during the operational phase, although most of these will not be local. Mitigation measures are set in place to manage the temporary increase in population and activity, ensuring minimal disruption. The recreational amenity trail developed alongside the wind farm would have a positive and permanent impact by increasing local recreational opportunities and potentially attracting more visitors to the area, thereby benefiting the local economy and community health. Thus, while there would be temporary increases in population and economic activity during construction and decommissioning, the overall effects, especially long-term, would be beneficial, with significant positive impacts expected from increased economic activity and improved recreational facilities.
- **Landscape:** Potential adverse effects include the alteration of the existing landscape character, primarily due to the introduction of wind turbines, which could significantly change the visual experience from various sensitive receptors,

including local settlements and scenic routes. This impact is particularly noted within a 5km radius, where the turbines will be prominently visible, altering the sense of rural tranquillity and potentially affecting the aesthetic and experiential value of the landscape. Mitigation measures detailed in the EIAR include strategic siting of turbines to minimise visibility, especially from key vantage points and designated scenic routes. Additional mitigation efforts involve comprehensive landscape management plans that include re-vegetation and the enhancement of existing natural features to integrate the development into the surrounding landscape effectively. These measures aim to preserve the visual quality and character of the area, ensuring that changes are harmoniously absorbed into the local scenery, thus significantly mitigating the direct and cumulative visual impacts.

- **Air Quality and Climate:** During the construction phase, the primary concern is dust emissions from earthmoving and other site activities, with a noted low to negligible risk of affecting human health due to the substantial distance from the nearest residences. Effective mitigation measures such as dust suppression techniques, covering of transported materials, and maintenance of machinery are proposed to minimise particulate emissions. In the operational phase, the wind farm would have a negligible impact on local air quality due to the lack of continuous emissions, with emergency use of a diesel generator being the only minor source. The project would contribute positively to air quality by displacing emissions from fossil fuel power generation, aligning with broader climate goals. The decommissioning phase mirrors the construction phase in potential impacts and mitigations, with no long-term degradation of air quality expected. Overall, the wind farm would result in a net positive impact on climate and carbon balance, significantly reducing CO2 emissions through renewable energy production, outweighing the initial carbon output from construction, and contributing to national renewable energy targets.

- **Telecoms and Aviation Safety:** There would be minimal direct or indirect effects on telecommunications and aviation safety throughout the construction, operation, and decommissioning phases of the development. During construction, temporary works such as tree trimming along the Turbine Delivery Route are expected to cause only short-term, negligible impacts on telecommunications, with no electromagnetic interference impacts anticipated. Similarly, aviation safety is not

expected to be affected during construction, as the placement of turbines will not impede any known flight paths, and the nearest airports are located at considerable distances. Operational impacts would also be minimal, with consultations confirming no electromagnetic interference concerns from telecommunications operators and no significant issues raised by the Irish Aviation Authority or Department of Defence, provided that aviation lighting requirements are met. Mitigation measures include the installation of obstacle warning lights on turbines if required and adherence to a protocol agreement with 2RN to address any unforeseen signal disturbances. Decommissioning would mirror the construction phase in terms of impact, with no long-term effects expected on either telecommunications or aviation safety. With the implementation of the proposed mitigation measures, the proposed development would not result in significant adverse effects on telecommunications or aviation safety.

- **Land, Soil and Geology:** Potential adverse effects include significant landscape alteration due to the felling of approximately 54.36 hectares of forest for turbine installation and associated access, which could lead to soil erosion and disturb subsoil and bedrock integrity. These impacts warrant particular scrutiny given the site's historical significance as a former mining area, with concerns around the stability of old mine shafts near one of the turbine locations. To mitigate these impacts, the EIAR proposes comprehensive soil and water management practices during construction, including the use of silt fences, controlled water runoff, and rapid re-vegetation of disturbed areas to stabilise the soil. Additionally, advanced geophysical surveys and continuous monitoring will address the risks associated with historical mining features, ensuring that any voids or unstable areas are identified and managed before construction. Moreover, the EIAR details the implementation of a Construction Environmental Management Plan (CEMP) that includes strict protocols for machinery maintenance and the handling of materials to minimise dust and prevent contamination of local watercourses. This approach aims to maintain the integrity of local ecosystems and ensure that the impact on the land, soil, and geology is minimised and managed effectively throughout the project's lifecycle.
- **Hydrology and Water Quality:** The proposed development's main significant direct and indirect effects on hydrology and water quality include potential localised

contamination of surface and groundwater during construction and operational phases, which might impact downstream ecology and quality. These risks arise from activities such as tree felling, site track upgrades, and construction of turbine foundations, which could increase sediment release and turbidity in nearby watercourses. Additionally, the construction phase might lead to temporary dewatering activities, causing localised drawdowns of the water table with potential impacts on nearby groundwater supplies. Mitigation measures detailed in the EIAR include the adoption of a Construction Environmental Management Plan that encompasses sediment control techniques, such as the use of sediment traps and the implementation of Sustainable Drainage Systems (SuDS) to manage runoff effectively. The EIAR also emphasises strict refuelling protocols and the use of fully bunded tanks for storing potential pollutants to prevent water contamination. These strategies are designed to maintain water quality and comply with environmental standards throughout the construction, operation, and decommissioning phases, ensuring minimal impact on the water environment.

- **Noise and Vibration:** The EIAR outlines potential adverse effects on noise and vibration mainly during the construction phase, with activities such as turbine foundation construction, erection of turbines, and excavation likely to generate significant noise. Although construction vibration is not expected to be perceptible beyond 500 meters and therefore not affecting residents, noise from these activities could momentarily exceed acceptable levels at the nearest noise-sensitive receptors. To mitigate these impacts, the EIAR proposes several measures, including adherence to BS 5228-2 and ETSU-R-97 guidelines, scheduled construction activities during less sensitive times, use of noise barriers, and regular monitoring to ensure compliance with noise standards. Operational noise from wind turbines is projected to be minimal, as modern turbines are designed to minimise aerodynamic noise, which is often masked by ambient wind sounds. Furthermore, operational noise will be continuously monitored and managed to remain within regulatory limits, ensuring no long-term adverse effects on the local community.

- **Cultural Heritage:** The proposal would result in minimal direct construction impacts due to the absence of known archaeological remains within the site. The operation of the wind farm would have limited indirect effects on the setting of

nearby cultural heritage assets due to extensive natural screening, location, and topography. The EIAR outlines detailed mitigation strategies, including archaeological monitoring during construction and careful management of any physical interventions within the town of Timahoe, ensuring that cultural heritage is protected and preserved throughout the lifecycle of the development.

- **Traffic and Transportation:** The proposed development would significantly increase traffic flows, particularly Heavy Goods Vehicle (HGV) movements, on local roads such as the R426 and L3851 during construction, presenting potential direct adverse effects on traffic flow and road safety. The EIAR predicts a 441% increase in HGV traffic on peak days, potentially impacting local road users and the community. To mitigate these effects, a detailed Construction Traffic Management Plan (CTMP) will be implemented subject to agreement with the Planning Authority and Garda Síochána, which includes road widening, vehicle swept path analysis, structural assessments and dust management. Additionally, the plan incorporates community engagement strategies to mitigate stress and anxiety related to abnormal load deliveries. These measures aim to maintain traffic flow and safety, ensuring that the temporary increase in traffic does not significantly disrupt local transportation networks or compromise road safety.
- **Shadow Flicker:** The EIAR uses conservative predictive models that assume constant sunlight and wind to assess potential shadow flicker effects, ensuring a comprehensive analysis of all scenarios. Despite this approach, actual impacts are expected to be much less severe due to Ireland's typical sunlight availability and existing obstructions. The EIAR identifies up to 169 receptors within the shadow flicker areas, predicting a maximum impact of 139.4 hours per year under worst-case conditions. To mitigate these effects, shadow flicker control modules with light sensors and software will automatically shut down turbines under conditions that could produce shadow flicker. These measures are designed to eliminate noticeable impacts, ensuring compliance with the 2006 Wind Energy Development Guidelines, which limit shadow flicker to 30 hours per year or 30 minutes per day. As the closest receptor is over 722 meters away, exceeding the 500-meter guideline, the proposal inherently meets these stipulations, further diminishing the potential for significant effects.

- **Biodiversity**: Direct effects are primarily characterised by habitat disruption due to land clearing for turbines, access roads, and other infrastructure, leading to potential displacement and even loss of species, particularly birds, bats, and terrestrial mammals that rely on the existing wooded and grassland areas. Additionally, the construction activities may directly harm flora and fauna, with increased risks of mortality or displacement during sensitive periods such as breeding or hibernation. Indirect effects include alterations in local hydrology and increased sedimentation, which may affect aquatic habitats, alongside potential increases in light and noise pollution that could disrupt the natural behaviours of nocturnal and crepuscular species. These impacts are expected to be exacerbated by cumulative effects from nearby developments, potentially leading to more significant changes in local biodiversity and ecosystem dynamics. To mitigate these impacts, the EIAR proposes a range of mitigation measures and ongoing monitoring strategies designed to protect and enhance biodiversity. These include restoring cleared habitats with native species to maintain ecological connectivity and biodiversity levels. Creating buffer zones around sensitive areas during construction will minimise disturbance to key species such as bats and birds. A detailed Construction Environmental Management Plan (CEMP) will implement sediment control and pollution prevention measures to safeguard aquatic habitats. Post-construction, the EIAR proposes active monitoring of species and habitats to assess the effectiveness of mitigation measures, allowing for adaptive management to address any unforeseen impacts. These measures would minimise the ecological footprint of the development and ensure compliance with environmental standards and conservation objectives, thereby maintaining the integrity of local biodiversity throughout the lifecycle of the project.

9.15.2. The EIAR has considered that the main significant direct and indirect effects of the proposed development on the environment would be primarily mitigated by environmental management measures, as appropriate. Having regard to the above, I am satisfied that the proposed development would not have any unacceptable direct or indirect effects on the environment, subject to the implementation of the mitigation measures detailed in the EIAR and associated documents.

13.0 **Appropriate Assessment**

13.1. **Introduction**

13.1.1. The EU Habitats Directive (92/43/EEC) provides legal protection for habitats and species of European importance by establishing a network of designated conservation areas collectively referred to as Natura 2000 (or 'European') sites. Matters relating to the likely significant effects on a European site are considered in this section of the report under the following headings:

- Compliance with Article 6(3) of the EU Habitats Directive.
- The Natura Impact Statement.
- Screening the need for Appropriate Assessment.
- Appropriate Assessment.

13.1.2. **Compliance with Articles 6(3) of the EU Habitats Directive**:

13.1.3. The Habitats Directive deals with the Conservation of Natural Habitats, 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.

13.1.4. The proposed development is not directly connected with or necessary to the management of a European site. The Board will note that a Natura Impact Statement (NIS) was submitted as part of the documentation for permission for the proposed development to assess the likely or possible significant effects, if any, arising from the proposed development on any European site.

13.1.5. In accordance with these requirements, the Board, as the competent authority, prior to granting consent, must be satisfied that the proposal, individually or in combination with other plans or projects, is either not likely to have a significant effect on any European Site or adversely affect the integrity of such a site, in view of the site(s) conservation objectives.

13.1.6. Guidance on Appropriate Assessment is provided by the EU and the NPWS in the following documents:

- Assessment of plans and projects significantly affecting Natura 2000 sites – methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (EC, 2001).
- Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (DoEHLG), 2009.

13.1.7. Both documents provide guidance on Screening for Appropriate Assessment and the process of Appropriate Assessment itself.

13.2. Natura Impact Statement

13.2.1. The application was accompanied by a Natura Impact Statement (NIS, dated 10 July 2023), which examined the potential impacts of the proposed development on the following European Sites:

- River Nore and River Barrow SAC (Site Code: 002162)
- River Nore SPA (Site Code: 004233)

13.2.2. The NIS identified and characterised the possible implications of the proposed development on these Natura 2000 European sites, in view of the site's conservation objectives, and provided information to enable the Board to carry out an Appropriate Assessment of the proposed works. The Board will note that the NIS also considered the potential impacts of the proposed grid connection cable routes (two options) between the onsite substation and the Pinewoods substation located c. 9.9km to the southwest and the Coolnabacky substation located c. 10km to the northwest, respectively.

13.2.3. In addition to the above, the NIS provides details of the turbine delivery route for the proposed turbines from Dublin port via the M50 and N7 National Road / M7 Motorway, R425 and R426 via the town of Timahoe.

13.2.4. The NIS outlines the assessment methodology employed to identify and assess the potential impacts on habitats and species identified as qualifying interests of European Sites and their conservation objectives, including cumulative / in-combination impacts (Section 2.0). The NIS sets out mitigation measures by avoidance and design, and

during the construction, operation and decommissioning phases of the proposed development.

13.2.5. Having reviewed the NIS and the supporting documentation, I am satisfied that it provides adequate information with respect to the baseline conditions, clearly identifies the potential impacts, and uses the best scientific information and knowledge. Details of mitigation measures are summarised in Section 4 of the NIS. I am generally satisfied that the information is sufficient to allow for an Appropriate Assessment of the proposed development.

13.3. Consultations and Observations

13.3.1. In the course of the assessment of the proposed development, the following consultations and third-party submissions were considered as they relate to Appropriate Assessment:

13.3.1.1. Planning Authority

13.3.2. The submission from Laois County Council highlights several concerns, including the placement of 12 out of 13 turbines in environmentally sensitive areas, designated as "Areas Not Open for Consideration," which contravenes the Laois County Development Plan. Concerns have also been raised regarding the accuracy of landscape and visual assessments, necessitating verification or adjustments. The Planning Authority also points out the potential environmental impacts of tree felling on flood risk. Additionally, the Planning Authority notes inconsistencies in document references and drawings, requiring cross-referencing to ensure alignment with the EIAR, NIS, and Planning Report.

13.3.3. The Council's Environment Department deems the EIAR and NIS satisfactory with the proposed mitigation measures to prevent significant adverse effects on Natura 2000 sites.

13.3.3.1. Prescribed Bodies

13.3.4. The Development Applications Unit (DAU) of the Dept. of Housing, Local Government, and Heritage has identified deficiencies in the EIAR primarily related to archaeology, cultural heritage, and visual impact assessments. The report does not specifically

mention potential impacts on Natura 2000 sites or the Appropriate Assessment process.

13.3.5. Transport Infrastructure Ireland (TII) raised concerns about the EIAR for the proposed wind farm, specifically regarding its treatment of potential impacts on national roads, including safety, traffic management, and the adequacy of proposed mitigation strategies. TII did not express specific concerns regarding Appropriate Assessment and potential impacts on Natura 2000 European Sites. Similarly, the report submissions from the Department of Defence, Department of Transport and HSA raised no specific concerns regarding potential impacts on Natura 2000 European Sites.

13.3.5.1. Third-Party Submissions

13.3.6. Third-party submissions on the proposed wind farm development expressed concerns regarding (inter alia) environmental impacts, with particular emphasis on the necessity for a thorough Appropriate Assessment of the potential impacts on Natura 2000 sites. Concerns were raised about the proposed cable routing's proximity to sensitive areas such as the River Barrow and River Nore Special Areas of Conservation (SACs), pointing out an inadequate assessment of potential ecological damage to these areas. Concerns were also raised regarding hydrology and water supply issues, including the project's potential to affect water source protection zones and The Swan public water scheme, which could lead to downstream impacts on Natura 2000 sites through hydrological changes and potential contamination, affecting aquatic ecosystems and site integrity. Furthermore, submissions highlighted the need for detailed evaluations regarding wildlife and biodiversity, specifically the protection of species like the peregrine falcon, Atlantic salmon, lamprey, otters, and the preservation of internationally protected habitats.

13.4. **Screening for Appropriate Assessment:**

13.4.1. The Screening Report considered Natura 2000 sites within 20km, the likely zone of impact, of the subject site. A total of five Natura 2000 sites are noted by the applicant to be located within this zone, with Table 3-1 of the NIS presenting the list of the sites and the qualifying features of conservation interest for which each site. These included the following: River Barrow and River Nore SAC (Site Code: 002162), Lisbigney Bog

SAC (000869), Ballyprior Grassland SAC (002256), River Nore SPA (004233) and Slieve Bloom Mountains SPA (004160). Each site was examined in the context of location in terms of the zone of Influence of effect from the proposed development and their relevant Special Conservation Objectives.

13.4.2. In addition to the above, I note that the Slieve Bloom Mountains SAC (Site Code 000412) is located c. 22km to the northwest. This SAC was not included in the Screening for Appropriate Assessment, given its location outside the 20km zone of influence of the application site.

13.4.3. The AA Screening Report employs the 'source-pathway-receptor' model to evaluate the potential impacts of the proposed wind farm development on nearby European sites. Its findings are summarised as follows:

Lisbigney Bog SAC (Site Code: 000869): Located 12.2km SW of the wind farm site**,** the report concludes that, due to the absence of hydrological or hydrogeological connectivity with the project site, there are no anticipated likely significant effects on the qualifying interest features of Lisbigney Bog SAC. Accordingly, this SAC is screened out from further assessment or mitigation.

Ballyprior Grassland SAC (002256): Located 5.1km NE of the wind farm site, similar reasoning applies to Ballyprior Grassland SAC. Given the lack of hydrological and hydrogeological pathways connecting it to the project, the report concludes there will be no likely significant impacts on its qualifying interest features, leading to its exclusion from further considerations.

River Barrow and River Nore SAC (Site Code: 002162): The report identifies hydrological, hydrogeological, and ecological connectivity to the project site, providing a potential pathway for pollutants to impact the SAC and mobile qualifying interest features. This connection necessitates further assessment and mitigation to avert likely significant effects on the SAC's qualifying interest habitats and species.

River Nore SPA (Site Code: 004233): Similar to the River Barrow and River Nore SAC, the report identifies a hydrological and hydrogeological connection to the project site, indicating a potential for adverse effects on the SPA, particularly on the kingfisher. Therefore, likely significant effects on qualifying interest features of the SPA cannot be excluded at this stage without further assessment or mitigation.

Slieve Bloom SPA: The report details no direct ecological connection or likely significant effects on the hen harrier, the SPA's qualifying interest feature, based on current evidence.

13.4.4. The potential for in-combination effects with other projects is specifically noted for the River Barrow and River Nore SAC and the River Nore SPA, highlighting the importance of considering cumulative impacts.

13.4.5. The AA Screening Report concludes that the likely significant effects on Lisbigney Bog SAC, Ballyprior Grassland SAC, and Slieve Bloom SPA can be excluded based on evidence and scientific knowledge. However, the report concludes that there is a risk of suspended solids, nutrients, and other pollution reaching the River Barrow and River Nore SAC, and the River Nore SPA, as these sites are hydrologically linked to the project site.

13.4.6. **AA Screening Conclusion**

13.4.7. Having reviewed the NIS and the supporting documentation, which I consider provides adequate information regarding the baseline conditions, clearly identifies the potential impacts, and uses the best scientific information and knowledge, together with the information available on the NPWS website, the scale and nature of the proposed development and likely effects, separation distance and functional relationship between the proposed works and the European sites, their conservation objectives and taken in conjunction with my inspection of the site and the surrounding area, I am satisfied that the Lisbigney Bog SAC, Ballyprior Grassland SAC, and Slieve Bloom SPA can be screened out from further assessment. Furthermore, in the absence of hydrological and hydrogeological connection between the project site and its distance from the Slieve Bloom Mountains SAC, I am of the view that there would not be any likely significant effects from the proposed development alone, and in combination with other plans or projects on the Slieve Bloom Mountains SAC. A Stage 2 Appropriate Assessment is not required for these Natura 2000 European Sites.

13.4.8. In the absence of mitigation measures, the following sites are deemed to have the potential to be impacted by the proposed development and require Stage 2 Appropriate Assessment:

- River Barrow and River Nore SAC (Site Code: 002162)

- River Nore SPA (Site Code: 004233)

13.5. **Stage 2 Appropriate Assessment**

13.5.1. The Conservation Objectives and Qualifying Interests, including any relevant attributes and targets for the relevant European Sites, are set out below.

13.5.1.1. Table 1: European Sites and their connectivity to the site.

European sites	**Qualifying Interests**	**Direct line distance to the site**	**Links**
River Barrow & River Nore SAC Site Code: 002162	[1130] Estuaries [1140] Tidal Mudflats and Sandflats [1170] Reefs [1310] Salicornia Mud [1330] Atlantic Salt Meadows [1410] Mediterranean Salt Meadows [3260] Floating River Vegetation [4030] Dry Heath [6430] Hydrophilous Tall Herb Communities [7220] Petrifying Springs* [91A0] Old Oak Woodlands [91E0] Alluvial Forests* [1016] Desmoulin's Whorl Snail (Vertigo moulinsiana)	2.4-3.2km	Hydrological, Hydrogeological and Ecological

	[1029] Freshwater Pearl Mussel (Margaritifera margaritifera) [1092] White-clawed Crayfish (Austropotamobius pallipes) [1095] Sea Lamprey (Petromyzon marinus) [1096] Brook Lamprey (Lampetra planeri) [1099] River Lamprey (Lampetra fluviatilis) [1103] Twaite Shad (Alosa fallax) [1106] Atlantic Salmon (Salmo Salar) [1355] Otter (Lutra lutra) [1421] Killarney Fern (Trichomanes speciosum) [1990] Nore Freshwater Pearl Mussel (Margaritifera durrovensis)		
River Nore SPA Site Code: 004233	[A229] Kingfisher (Alcedo atthis)	5.9-11.8km	Hydrological and Hydrogeological

13.5.2. **Description of European Sites**

13.5.3. A description of these Natura 2000 sites likely to be affected, the species and habitats significantly present on the site (designating features) and their conservation objectives is provided below.

13.5.4. **River Barrow and River Nore SAC (Site Code: 002162)**

13.5.5. The River Barrow and River Nore Special Area of Conservation (SAC) encompasses the freshwater stretches of their catchments up to the Slieve Bloom Mountains and the tidal regions down to Creadun Head in Waterford. Traversing eight counties and including numerous towns and tributaries, this area features a diverse geological landscape with carboniferous shales, sandstones, and significant sections of limestone and Leinster Granite. It is identified as an SAC due to its important habitats and species listed in the EU Habitats Directive, such as estuaries, tidal mudflats, reefs, various types of meadows, and alluvial forests. It is also home to protected species, including the Freshwater Pearl Mussel, White-clawed Crayfish, Atlantic Salmon, and Otter, among others. Land use in the region is primarily agricultural with associated environmental impacts, while recreational activities and historical estates also feature prominently.

13.5.6. The SAC is marked by its conservation significance, housing a range of habitats from oak woodlands to heaths and a variety of species under the EU Habitats Directive, including 17 Red Data Book plant species and important animal species like the Freshwater Pearl Mussel, specifically the unique hard water form. Noteworthy is the freshwater stretches of the River Nore as a designated salmonid river and the site's use by a multitude of bird species. Human activities pose several threats, including agricultural run-off, overgrazing, invasive species, and industrial discharges, all of which impact the SAC's water quality and its biodiversity.

13.5.7. Aquatic ecology surveys along the watercourses potentially affected by the project (referenced in Appendix 3 of the NIS) revealed the presence of sensitive species integral to the SAC's biodiversity, such as white-clawed crayfish and various lamprey species. The hydrological connectivity between the project site and the SAC via these watercourses emphasises the necessity to address the potential impacts of the proposed development on water quality and aquatic habitats.

13.5.8. Fisheries assessments identified low densities of Atlantic salmon and various lamprey species within several tributary rivers of the SAC connected to the site, highlighting

the importance of maintaining favourable conditions for these species and ensuring the project does not adversely affect the SAC's integrity and conservation objectives.

13.5.9. **River Nore SPA (Site Code: 004233)**

13.5.10. The River Nore Special Protection Area (SPA), is a designated habitat for conservation along the River Nore and its tributaries - the Delour, Erkina, and a section of the Goul and Kings Rivers, from the bridge at Townparks to Coolnamuck in County Kilkenny. This SPA includes the river channels and adjacent vegetation, traversing limestone plains and a section of Old Red Sandstone rocks. It is recognised under the EU Birds Directive specifically for the protection of the Kingfisher, with a 2010 survey documenting 22 pairs. Additionally, the area supports significant numbers of other bird species, including the Mute Swan, Mallard, Cormorant, Grey Heron, Moorhen, Snipe, and Sand Martin, with the River Nore SPA noted for its high ornithological value and for maintaining a nationally important population of Kingfishers.

13.5.11. Bird surveys, as outlined in the NIS and its appendices, document the Kingfisher's activity patterns, feeding behaviours, and nest site preferences along the River Nore, underscoring the species' reliance on clear, unpolluted water bodies for foraging. The SPA's water quality, crucial for maintaining the Kingfisher population, is directly influenced by upstream activities, including those associated with the windfarm's construction and operation. Hydrological assessments have identified potential pathways through which these activities could degrade water quality, posing risks to water clarity and prey availability critical for the Kingfisher. These findings highlight the importance of safeguarding the SPA's aquatic ecosystems and ensuring the Kingfisher's continued presence.

13.5.12. **Conservation Objectives**

13.5.13. The Conservation Objectives for the River Barrow & River Nore SAC and the River Nore SPA, note that the overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. The favourable conservation status of a habitat is achieved when:

- Its natural range, and the area it covers within that range, are stable on increasing, and

- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable. The favourable conservation status of a species is achieved when:

The favourable conservation status of a species is achieved when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

13.5.14. Detailed Conservation Objectives for the River Barrow and River Nore SAC (002162) are included in the NPWS Conservation Objectives Series for the site, dated 19th July 2011, with the overall objective being to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been designated. Conservation Objectives include the following:

- To maintain the favourable conservation condition of Desmoulin's whorl snail, White-clawed crayfish, Estuaries, Mudflats and sandflats not covered by seawater at low tide, Salicornia and other annuals colonizing mud and sand, Killarney fern, Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation, European dry heaths, Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels and * Petrifying springs with tufa formation, in River Barrow and River Nore SAC (002162). •
- To restore the favourable conservation condition of Sea lamprey, Brook lamprey, River lamprey, Twaite shad, Atlantic salmon, Atlantic salt meadows, Otter, Mediterranean salt meadows, Nore freshwater pearl mussel, Old sessile oak woods with Ilex and Blechnum in the British Isles and * Alluvial forests with Alnus glutinosa and Fraxinus excelsior in the River Barrow and River Nore SAC (002162).
- The status of the freshwater pearl mussel (Margaritifera margaritifera) as a qualifying Annex II species for the River Barrow and River Nore SAC is currently

under review. The outcome of this review will determine whether a site-specific conservation objective is set for this species.

13.5.15. Conservation Objectives for the River Nore SPA (004233) are included in the NPWS Conservation Objectives Series for the site, dated 12th October 2022, with the overall objective being to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA, i.e. the Kingfisher.

13.5.16. Having regard to the NPWS Conservation Objectives and associated maps for the SAC and SPA, together with the information presented in the NIS, there are several QI species which are noted to be sensitive to changes in water quality and which have the potential to be impacted by the proposed development. These QIs, together with their main Attributes and Targets, are summarised in Table 2 below.

13.5.16.1. Table 2: Summary of NPWS Conservation Objectives, Attributes, and Targets for QI Species Sensitive to Water Quality Changes

Species Code	Species Name	Conservation Objective	Attributes and Targets
[3260]	Water courses with Ranunculion fluitantis and Callitricho-Batrachion vegetation	Maintain the favourable conservation condition	Habitat distribution stable or increasing, maintain hydrological regimes, substratum dominated by large particles, sufficient mineral concentrations, presence of typical species.
[6430]	Hydrophilous tall herb fringe communities	Maintain the favourable conservation condition	Habitat distribution stable or increasing, 30-70% sward height, broadleaf herb component 40-90%, at least 5 positive indicator species, negative indicator species under control.
[1029]	Freshwater pearl mussel (Margaritifera margaritifera)	Maintain the favourable conservation condition	Distribution no reduction, juveniles/females with eggs in 50% of samples.
[1092]	White-clawed crayfish (Austropotamobius pallipes)	Maintain the favourable conservation condition	No alien species, no reduction in distribution, Q3-4 water quality, no decline in habitat quality.
[1095]	Sea lamprey (Petromyzon marinus)	Restore the favourable conservation condition	75% of river length accessible, three juvenile age/size groups, 1/m² juvenile density, 50% of sites positive for juvenile habitat.
[1096]	Brook lamprey (Lampetra planeri)	Restore the favourable conservation condition	Access to all watercourses, three juvenile age/size groups, no decline in spawning habitat, 50%

			of sites positive for juvenile habitat.
[1099]	River lamprey (Lampetra fluviatilis)	Restore the favourable conservation condition	75% of river and tributaries accessible, three juvenile age/size groups, 2/m² juvenile density, 50% of sites positive for juvenile habitat.
[1103]	Twaite shad (Alosa fallax)	Restore the favourable conservation condition	75% of river length accessible, more than one age class, no decline in spawning habitat, oxygen levels no lower than 5mg/l.
[1106]	Atlantic salmon (Salmo salar)	Restore the favourable conservation condition	100% of river channels accessible, CL exceeded, maintain or exceed salmon fry abundance, no decline in redds due to anthropogenic causes, at least Q4 water quality.
[A229]	Kingfisher (Alcedo atthis)	Maintain or restore the favourable conservation condition	No specific attributes and targets provided.

13.5.17. **Description of the proposed development and its likely potential significant effects**

13.5.18. The proposed Coolglass Windfarm consists of 13 turbines, divided into two clusters within Fossy Hill and Wolfhill, Co Laois. The proposed turbines, Siemens Gamesa SG155 and Vestas V162, will have a tip height of 180m, with rotor diameters ranging from 155m to 162m, and hub heights between 99m and 102.5m. Each turbine will feature a three-bladed, horizontal axis configuration and will be supported by a foundation c. 25m in diameter, 2m in depth and hardstand dimensions varying between 50m x 20m and 80m x 30m.

13.5.19. Turbine blades are made from glass fibre reinforced polyester, rotating at 5 to 15 revolutions per minute, depending on wind speed. Electricity generation begins at wind speeds of 3-4 m/s, achieving rated power at 12-14 m/s, with shutdowns occurring at wind speeds above 25 m/s. The towers, conical steel tubes transported in sections and bolted together on-site, taper from 4.5-5m at the base to 3-4m at the top, where the nacelle is mounted.

13.5.20. Each turbine houses a transformer within its tower to step up generated electricity to approximately 33 kV, connecting to the site substation. The project's estimated capacity ranges from 85.8 MW to 93.6 MW, potentially generating 248,030

to 270,579 MWh annually—enough to supply electricity to about 59,000 to 64,000 Irish households. This output could satisfy the energy needs of all households in County Laois twice over, factoring in the projected household increase by 2027.

13.5.21. Turbines are painted light grey to blend with the sky, minimizing visual impact in line with recommended guidelines, ensuring compatibility with the surrounding environment and adherence to planning standards for wind energy developments.

13.5.22. The turbine delivery route for the Coolglass Windfarm begins at Dublin Port, utilising the Dublin Port Tunnel to connect with the M50 motorway, then transitions onto the N7/M7 Motorway westward, exiting at Junction 16. From there, the route proceeds south on the R445 Regional Road, descending towards Rathleague, crossing the M7, and continuing south and east on the Portlaoise Road/R426 Regional Road through Timahoe. Finally, it heads east on Knocklead Road, gaining access to the wind farm's northern and southern clusters via existing forestry tracks, as detailed in Appendix 1. This route was selected for its optimality in delivering turbines to the site.

13.5.23. The project proposes to upgrade 15.5km of internal access tracks, incorporating 5km of existing tracks, to facilitate the construction, maintenance, and eventual decommissioning of turbines. Leveraging the site's existing forestry access networks, these tracks will be widened to c. 5 meters, with adjustments for bends, and surfaced with well-graded aggregate. Upgrades will include maintaining and improving existing drainage, with new track construction utilising a 500mm hard core atop a geotextile membrane, layered and compacted stone, side drainage, and landscaping with surplus materials for aesthetic integration. Stone for new roads will be sourced from local quarries, and a single borrow pit will be established near the southern cluster's access point, as detailed in Appendix 1.

13.5.24. Within the EIAR, two prospective cable routes to an offsite substation are evaluated, which are not included in this planning application but intended for future submission. The first option, a 9.9km route to the Pinewoods substation, and the second, a 10.1km route to the Coolnabacky substation, will undergo an assessment to determine the most suitable for a separate planning application. The execution of these works is anticipated to span a 12-month period.

13.5.25. The proposed wind turbine layout will utilise four internal track crossings, with one new over the Fallowbeg Upper stream, designed to handle 1% AEP MRFS storm events with a minimum 300mm freeboard, adhering to OPW standards. For cable routes, twelve watercourses will be crossed, with a methodology such as piped culverts or flatbed formations over culverts, depending on cover availability - determined case-by-case, in compliance with local authority and EirGrid requirements. Along the turbine delivery route, which parallels Option 2's cable corridor, five watercourses require no construction for crossing; minor preparatory works like tree removal and vegetation trimming are anticipated to facilitate turbine delivery.

13.5.26. The proposed development includes constructing an on-site electricity substation within the site, acting as a connection point to the national grid through Option 1 or Option 2 offsite substation routes, serviced by a 33kV collector cable from the southern cluster. Spanning 65 by 127 meters, the compound will house two control buildings and essential electrical components, enclosed by a 2.6-meter-high steel palisade fence, with internal segregation for operational safety. Equipped with external and internal lighting, the facility features a Customer Switchgear Room operated by the applicant and an EirGrid Control Building, each containing switchgear, electrical apparatus, and welfare facilities. A rainwater harvesting system supplemented by portable toilets will support minimal water use for toilet facilities.

13.5.27. The Coolglass Windfarm's electrical cabling system involves collecting electricity from both the northern and southern turbine clusters through buried 33kV medium voltage cable circuits along onsite access tracks and the public roadway, culminating at an onsite substation in the northern cluster. This electricity is then exported to the grid via a 110kV buried cable to either Option 1 or Option 2 substations, adhering to EirGrid requirements. Installation specifics are outlined in the CEMP (Appendix 5), including the construction of joint bays and communication chambers for the 33kV collector cable, requiring approximately 12 joint bays over 6km between turbine 10 and the onsite substation. These bays, c. 4.5m x 1.8m x 1.2m, facilitate the joining of cables and fiber-optic communications, positioned as per EirGrid's detailed design stage guidelines at 90-degree bends and about every 750m.

13.5.28. **Potential Significant Effects**

13.5.29. The NIS identifies several Qualifying Interests/Special Conservation Interests (QIs/SCIs) linked to identified Natura 2000 sites that might be impacted by the proposed development, as detailed in Table 4-6 and Section 4.5.2. For the River Barrow and River Nore SAC, these interests include hydrophilous tall herb fringe communities of plains and montane to alpine levels, watercourses of plain to montane levels with Ranunculion fluitantis and Callitricho-Batrachion vegetation, white-clawed crayfish, sea lamprey, brook lamprey, river lamprey, twaite shad, Atlantic salmon, otter, and the Nore freshwater pearl mussel. For the River Nore SPA these Qualifying Interests include the kingfisher.

13.5.30. The potential effects on the integrity of the identified European Sites 'Alone' are considered in terms of hydrological and ecological connectivity for the River Barrow and River Nore SAC and hydrological and hydrogeological connectivity for the River Nore SPA. Findings are summarised as follows:

13.5.30.1. <u>River Barrow and River Nore SAC:</u>

13.5.31. In terms of hydrological connectivity, The NIS identifies the project's upstream location in relation to the River Barrow and River Nore SAC, emphasising the potential release of suspended solids, pollutants, nutrients, and non-native species during various project phases. Such releases pose significant risks to the SAC's aquatic habitats, notably impacting watercourses with Ranunculion fluitantis and Callitricho-Batrachion vegetation, along with hydrophilous tall herb fringe communities. The document details how suspended solids can obstruct plant photosynthesis, a situation likely exacerbated by soil acidity from surrounding coniferous plantations, and how additional nutrients may lead to harmful algal blooms, outcompeting native vegetation.

13.5.32. The NIS further describes the consequences of hydrocarbon pollution and other contaminants on leaf biochemistry, leading to a decline in vegetation health and productivity. It notes the potential for invasive species to overshadow and outcompete native flora, thus reducing ecosystem functionality. The dispersion of suspended solids, especially during construction and decommissioning, is highlighted as a critical concern for water quality, impacting fish populations, freshwater pearl mussels, and consequently, otter habitats. The NIS points out that soil acidification poses additional

risks, impairing salmon egg development and reducing aquatic invertebrate populations, including white-clawed crayfish.

13.5.33. Additionally, the NIS outlines the risk of spreading non-native species or pathogens, such as crayfish plague, to native species, exacerbated by construction activities. It indicates the presence of pathogens near the project area through eDNA testing, suggesting a vulnerability in local crayfish populations. The transport of non-native plant species, like Japanese Knotweed from the project site to watercourses, is discussed, noting the potential for these species to dominate over native riparian vegetation, thereby endangering the SAC's specified qualifying interests. This comprehensive analysis underscores the necessity for careful management and mitigation measures to safeguard these critical ecological networks.

13.5.34. In terms of ecological connectivity, the NIS highlights that mobile Qualifying Interest (QI) features of the River Barrow and River Nore SAC, including white-clawed crayfish, various lamprey species, twaite shad, salmon, and otter, might migrate outside the SAC into areas near the project through hydrological connections. Further investigations reveal that twaite shad and sea lamprey are located significantly further south and are not found within the project vicinity, leading to the conclusion that water pollution from the project would be significantly diluted before reaching these species. Consequently, the conservation objectives for twaite shad and sea lamprey within the SAC are unlikely to be compromised by the project.

13.5.35. Aquatic surveys conducted within the project area did not detect white-clawed crayfish, salmon, or twaite shad but identified lamprey species within the project's red line boundary and otter signs at specific locations, as detailed in the Aquatic Ecology Report in Appendix 3 of the NIS. The construction phase entails crossing 17 streams, requiring the installation of one new bridge and the reinforcement of 16 existing ones. This construction activity presents a direct threat to these species, potentially causing mortality due to habitat disruption or pollution, which could have a more significant impact if these species are in close proximity to the project site.

13.5.36. Particularly for otters, which may utilise both aquatic and terrestrial habitats within the project area, there is a risk of entrapment in excavations without suitable escape routes. Furthermore, the presence of humans and construction activity could disturb and displace otters, interfering with their foraging behaviour and potentially

resulting in a loss of condition due to increased stress and displacement from their natural habitat.

13.5.36.1. River Nore SPA

13.5.37. The NIS identifies a direct hydrological and hydrogeological connection between the project and the River Nore SPA, where the kingfisher, a qualifying interest feature, inhabits. This connection implies that pollutants or suspended solids generated during the project's construction or decommissioning could infiltrate the SPA's watercourses. Such contamination could detrimentally affect the kingfisher's prey, paralleling the impacts observed for the River Barrow and River Nore SAC, or could obscure the waters, impeding the kingfisher's foraging efficiency and potentially leading to a decline in their condition.

13.5.38. **Cumulative and In Combination effects**

13.5.39. The NIS provides an "In Combination" effects analysis, beginning with a desktop-based planning search over ten years within a 20km radius, consulting sources including the EIA portal, An Bord Pleanála website, and both Laois and Carlow County Council planning lists. This search initially focused on significant developments, excluding single dwellings beyond 2km of the project's boundary and prioritising projects over 50 houses or those including an EIAR or NIS. Further refinement targeted developments within 20km likely to overlap with the project's construction period, operational infrastructural projects using the same roads, quarries within 2km, and strategic developments that would share road networks.

13.5.40. The search revealed no constructed wind farms within 5 km, but identified eight within 20km and four additional projects, primarily quarries and a renewable gas facility, as significant for cumulative impact assessment. Specifically, developments considered included the restoration of a quarry to grassland by Michael Johnson (4km away, granted on 19/11/2020), the installation of underground cables for the Bilboa Wind Farm by Bilboa Wind Farm Infrastructure (17km away, planning granted in July 2021), and the development of a Renewable Gas Facility by Bord Na Móna Powergen Ltd. (14km away, granted on appeal on 23/05/2022). Other notable projects within this radius include the Lagan Materials Limited (Spink Quarry) for quarry deepening (3km away), several projects by Pinewood Wind Limited involving wind turbines and

infrastructure upgrades (within 4km, permissions granted across various dates), the Cullenagh Wind Farm development (3.5km away, granted on 14/6/2014), the Gortahile Wind Farm (11km away, planning permission on 27/10/2024), Farranrory Wind Farm and Cable Route (17km away, permissions in 2021 and 2022), and the Lisdowney Wind Farm in Kilkenny (11km away, modification granted on 23/7/2012).

13.5.41. **Mitigation measures**

13.5.42. Section 4.10 of the NIS sets out the proposed mitigation measures to avoid the potential for any direct or indirect impacts to the QIs/SCIs habitats and species identified as being at risk. The NIS details that all mitigation measures have been developed in accordance with national and international legislative guidance for the protection and management of flora, habitats of conservation importance, fauna and aquatic ecological interest. The description of mitigation measures is provided in terms of the hierarchy of mitigation, which includes avoidance, reduction, and remediation. The proposed mitigation measures are summarised as follows:

13.5.42.1. <u>Erosion and sediment control guidance</u>

- The project will implement the strictest erosion and sediment control practices by following guidance from the Forestry and Water Quality Guidelines (DMNR, 2000), Code of Best Forest Practice – Ireland, Forestry and Freshwater Pearl Mussel Requirements – Site Assessment and Mitigation Measures (Forestry Service, 2009), and Forest Operations & Water Quality Guidelines (Coillte, 2009).
- The project will adhere to a Construction Environment Management Plan (CEMP) or Construction Method Statement (CMS) and a Surface Water Management Plan (SWMP), integrating all mitigation measures from the NIS and the EIAR, to meet conservation goals of the River Barrow and River Nore SAC, and River Nore SPA, to be agreed by IFI, NPWS, and the Planning Authority. These plans, including any consent conditions, will serve as crucial compliance tools for contractors, ensuring environmental protection and monitored through an Environmental Audit Checklist.
- Drainage will utilise a Sustainable Drainage System (SuDS) to minimise, intercept, treat, disperse, and dilute runoff, with the SWMP detailing measures to prevent water pollution from construction, regulate surface water flow, promote local sediment settlement, and reduce sediment-laden stormwater.

- Before site clearance or earthworks commence, the project will establish controls for erosion, sediment, drainage, and runoff, prioritising erosion control for its effectiveness and cost efficiency over sediment control, alongside measures to manage sediment transport, water flow, and prevent sediment runoff.
- Once works on site have commenced, efforts will minimise exposed ground, prevent runoff from adjacent areas, and implement appropriate control and containment measures, with continuous monitoring and maintenance of erosion and sediment controls.
- Establishing vegetation on exposed soil as soon as practical will be prioritised, and all silt and erosion control measures will adhere to the peak flow guidelines specified in CIRIA (2006).

13.5.42.2. Erosion and sediment control details

- Erosion and sediment control measures will be integrated into every aspect of the Project.
- The project work is categorised into stages, including the upgrading of existing drainage networks, access tracks, roadside swales, construction of new access tracks, crane hardstanding areas, turbine foundations, substation/temporary construction compounds, and cable trenches.
- All erosion and sediment control measures will adhere to the peak flow guidelines specified in CIRIA (2006).
- Specific measures for each work element, applicable as relevant, are detailed in Table 4-12 of the NIS, as follows:
    - Installation of Interception Drains: Installed upslope of work areas to prevent water from reaching and running over these areas, thereby avoiding sediment collection. These are secured through the Construction Environment Management Plan (CEMP), implemented by construction site staff and drainage engineers before construction begins.
    - Silt Trap Installation at Discharge Points: Positioned at discharge points from trackside swales to collect silt in runoff water before it discharges to

watercourses, following the CEMP, and installed by construction site staff and drainage engineers pre-construction.

- Blocking of Drains: This involves blocking drains that collect discharge from roadside swales and directly discharge into watercourses, preventing the discharge of silt-laden water. This measure is part of the CEMP, executed by construction site staff and drainage engineers and is done before construction.
- Perimeter Swales: Used to collect dirty surface water runoff from crane hardstanding areas/turbine bases, including check-dams, cross-drains, sediment traps, and discharge points, to prevent pollution discharge into watercourses. Secured through the CEMP and implemented by construction site staff and drainage engineers from pre-construction through to decommissioning.
- Settlement Ponds: Designed to facilitate the treatment of potentially silt-laden water, allowing for the removal of silt before discharging to watercourses. The measure is outlined in the CEMP, with the drainage engineer responsible for design, the construction team for installation, and site staff for ongoing monitoring, from pre-construction through to decommissioning.

13.5.42.3. Best practice pollution control measures

- Best practice pollution control measures outlined in Table 4-13, including the use of silt traps and run-off management, will be applied during construction near minor watercourses to prevent pollution in the River Barrow and River Nore SAC and SPA, ensuring treatment of all surface water run-off from the Coolglass Windfarm project.
- Pollution control measures outlined in Table 4-13 include:
  - Silty Water Treatment: Utilise silt trays/settlement ponds and temporary interceptors/traps ahead of permanent installations to collect silt and prevent watercourse discharge, as per the CEMP in Appendix 5, by drainage engineers and on-site construction staff during construction.
  - Straw Bales/Silt Fences: Positioned near watercourses to prevent untreated surface runoff entering watercourses, following the CEMP, by drainage

engineers (for placement) and on-site staff (for implementation and monitoring) during construction.

- Secure Storage for Pollutants: Fuels, lubricants, and hydraulic fluids stored in secure bunded areas away from watercourses to prevent spills, accommodating 110% of container capacity, according to the CEMP, by on-site staff during construction, operation, and decommissioning.
- Spillage Prevention and Response: Containers secured against unauthorized access with an effective spillage procedure and staff training in place to handle spills and prevent watercourse discharge, adhering to the CEMP, by on-site staff through all project phases.
- Waste Disposal: Waste oils/hydraulic fluids collected, stored, and disposed of offsite appropriately to avoid pollution, guided by the CEMP, by on-site staff during construction, operation, and decommissioning.
- Prohibited Fuelling and Lubrication Areas: No fuelling/lubrication within 50m of watercourses to prevent pollution, as per the CEMP, by on-site staff throughout the project lifecycle.
- Strategic Location of Site Infrastructure: Storage areas, machinery depots, and offices located at least 50m from watercourses to prevent pollution, with site layout detailed in Appendix 1 and implemented by on-site construction staff during construction, operation, and decommissioning.
- Foul Drainage Management: Site offices and facilities' foul drainage treated and removed to a suitable facility to prevent watercourse pollution, following CEMP Appendix 5, by on-site construction and operation staff.
- Spill Kit Training and Availability: Spill kits provided near streams with staff trained on their use to manage spills and prevent watercourse pollution, adhering to the CEMP, by construction staff during construction, operation, and decommissioning.
- Controlled Disposal of Concrete: Disposal of raw/uncured waste concrete controlled to prevent impact on watercourses and siltation, guided by the CEMP, by construction and maintenance staff.

- Attenuation Ponds and Constructed Wetland: Designed for 24hr settlement before discharge into watercourses to prevent sedimentation, as per the CEMP, by drainage engineers, construction staff, and site staff (maintenance) during construction, operation, and decommissioning.

- Adherence to the "Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters" (IFI, 2016) for works near watercourses, emphasising:
  1. Preference for clear span bridges and bottomless culverts to maintain natural water depth and flow.
  2. Bridge foundations to be positioned at least 2.5 meters from riverbanks to avoid impacting riparian habitats.
  3. Use of metal or concrete culverts with a minimum diameter of 900mm, ensuring alignment with the stream bed and maintaining the stream profile.
  4. Sufficient depth over bridge aprons to facilitate fish movement, with crossings designed to handle flood flows and debris without altering stream characteristics.
  5. Coverings for crossings should be clean, inert material, preventing dislodgement into the water.
  6. Instream works are to be carried out between July and September; creation of fords and crossing at natural fords are prohibited.
  7. Bank protection upstream and downstream of structures is required, with a preference for rock armour over gabions to prevent undercutting.
  8. Use pre-cast concrete when possible and ensure any cast-in-place concrete work is isolated from water to prevent leachate.
  9. Designated impermeable areas for cement washout to prevent pollution.
  10. Water abstraction for dust suppression should avoid areas with invasive species and not adversely affect water bodies.

- Works adjacent to, within, or over watercourses will follow the "Guidelines for the crossing of watercourses during the construction of national road schemes" (NRA, 2005), emphasising minimal disturbance to watercourses and riverbanks, implementing siltation control measures like bunding and settlement ponds,

ensuring culverts allow fish and mammal passage, designing temporary crossings to not impede fish passage, and using suitable construction materials to prevent rutting, ponding, and silt run-off, directing silt to lagoons with gradient-specific measures and buffer zones.

13.5.42.4. Additional measures for conserving water quality and aquatic life

- Disturbed Sediment Entrainment Mats (SEDIMATS) will be used in all watercourses draining from the site to protect against silt release, installed according to manufacturer instructions and in locations agreed with NPWS, IFI, and the Planning Authority.
- Lagoon-type sediment traps and plant filtration beds, recommended by the Altmüller and Dettmer (2006) study, will be incorporated into the SWMP to enhance water quality and aquatic life protection, even though the study's focus, FPM populations, are 17-25km away from the project.
- The CEMP outlines machinery use and methodology, including storage locations, access management to limit disturbance, protection of water quality through spill avoidance, and the use of biodegradable oils, with regular checks on machinery near watercourses to prevent oil, hydraulic fluid, and fuel leaks.
- A Method Statement will address machinery cleaning to prevent the spread of non-native invasive species, with pre-construction surveys to identify any invasive species presence and measures to clean equipment potentially exposed to such species before site use.
- Material, topsoil, or spoil stockpiling will occur within the site compound, maintaining a minimum distance of 50m from any surface water drainage.
- Temporary fencing will delineate the works area to minimise disturbance impacts, with no specific mitigation for otters due to the absence of identified holts within the project area.

13.5.42.5. Operational phase mitigation measures

- Maintenance of the wind farm's drainage system will follow the CIRIA C697 SuDS and Maintenance Manual to ensure effectiveness.

- A review of ecological mitigation measures will occur during the operational phase, with additional, project-specific mitigation provided as needed.
- Access to the site will be restricted by gates to prevent illegal dumping and unauthorised off-road vehicle use.
- Any material stockpiled will be located within the site compound or at least 50m away from any surface water drainage.

13.5.42.6. Mitigation Measures during decommissioning

- Mitigation measures during decommissioning will mirror those in the CEMP for the construction phase, but on a reduced scale since track and turbine installation won't be necessary.

13.5.43. **Residual effects**

13.5.44. The NIS submitted in support of the proposed development concludes that, with the implementation of identified mitigation measures during construction, operation, and decommissioning phases, the project will not adversely affect the integrity of any European site, removing all reasonable scientific doubt regarding its effects. It ensures that the conservation objectives of European Sites remain uncompromised, either alone or in combination with other projects.

13.5.45. **Integrity test**

13.5.46. Following the appropriate assessment and the consideration of mitigation measures, I am able to ascertain with confidence that the proposed development would not adversely affect the integrity of the River Barrow and River Nore Special Area of Conservation (SAC) or the River Nore Special Protection Area (SPA), in view of the Conservation Objectives of those sites. This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects. Table 3 below summarise the appropriate assessment and site integrity test.

13.5.46.1. Table 3: Appropriate Assessment Summary: Impacts on European Sites and Conservation Objectives

			Summary of Appropriate Assessment			
European Site and Code	**Qualifying Interests**	**Conservation Objectives Targets and attributes**	**Potential adverse effects**	**Mitigation measures**	**In-combination effects**	**Can adverse effects on integrity be excluded?**
River Barrow & River Nore SAC (002162)	Water courses with Ranunculion fluitantis and Callitricho-Batrachion vegetation, Hydrophilous tall herb fringe communities, Freshwater pearl mussel, White-clawed crayfish, Sea lamprey Brook lamprey River lamprey Twaite shad Atlantic salmon	Maintain or restore habitats and species; specific conditions for habitats and species like water quality, distribution, habitat area, etc.	Release of Suspended Solids and Pollutants, Habitat Disruption, Water Quality Impacts, Soil Acidification, Spread of Invasive Species, Hydrocarbon Pollution, Ecosystem Functionality Reduction.	Implement strict erosion and sediment control practices. Adhere to Construction Environment Management Plan (CEMP) and Surface Water Management Plan (SWMP). Use Sustainable Drainage Systems (SuDS) for runoff management. Regular checks on machinery to prevent oil and pollutant leaks. Establish vegetation on exposed soil quickly to prevent erosion. Utilise pre-cast concrete to minimize leachate. Install silt traps and sediment basins to capture runoff.	No likely significant in-combination effects.	Yes, with implementation of mitigation measures

				Prohibit the creation of fords and restrict crossing at natural fords. Implement a method statement for cleaning machinery to prevent spreading invasive species. Ensure stockpiling of materials is at least 50m from watercourses. Designate impermeable areas for cement washout.		
River Nore SPA (004233)	Kingfisher	Maintain or restore the favourable conservation condition of the Kingfisher	Potential water pollution affecting prey availability and water clarity	Erosion and sediment control measures; restricted site access; stockpile management; operational maintenance of drainage systems	No significant in-combination effects identified with other projects	Yes, with implementation of mitigation measures
	Overall conclusion: Integrity test Following the implementation of mitigation, the construction and operation of this proposed development will not adversely affect the integrity of the River Barrow and River Nore Special Area of Conservation (SAC) or the River Nore Special Protection Area (SPA), and no reasonable doubt remains as to the absence of such effects.					

13.5.47. **Appropriate Assessment Conclusion**

13.5.48. The proposed development has been considered in light of the assessment requirements of Sections 177U and 177V of the Planning and Development Act 2000, as amended.

13.5.49. Having carried out screening for Appropriate Assessment of the project, it was concluded that the proposed development may have a significant effect on the River Barrow and River Nore SAC (Site Code: 002162), or the River Nore SPA (Site Code: 004233). Consequently, an Appropriate Assessment was required to determine the implications of the project on the qualifying features of those sites in light of their conservation objectives.

13.5.50. Following an Appropriate Assessment, it has been ascertained that the proposed development, individually or in combination with other plans or projects, would not adversely affect the integrity of European site Nos. 002162 and 004233 or any other European site, in view of the sites' Conservation Objectives.

13.5.51. This conclusion is based on a full and detailed assessment of all aspects of the proposed development, including proposed mitigation measures in relation to the Conservation Objectives of these European sites and an assessment of likely in-combination effects with other plans and projects. No reasonable scientific doubt remains as to the absence of adverse effects on the integrity of these European Sites.

14.0 Recommendation

14.1. I recommend that planning permission should be refused for the reason set out below.

15.0 Reasons and Considerations

1. Policy Objective CM RE 5 of the Laois County Development Plan 2021-2027 seeks to promote and facilitate wind energy development in accordance with the Guidelines for Planning Authorities on Wind Energy Development and Appendix 5, Wind Energy Strategy of the Development Plan, subject to compliance with normal planning and environmental criteria. Notwithstanding the general supportive policy

for wind energy development, Policy Objective CM RE 7 prohibits the location of wind farms in areas identified as 'Areas not open for consideration', as outlined in Map 3.2. The Wind Energy Strategy for County Laois delineates "Areas Not Open for Consideration" whereunder Policy Objective WES 7 refers, stating that "these areas are not considered suitable for wind farm development due to their overall sensitivity arising from landscape, ecological, recreational and/or cultural and built heritage resources as well as their limited wind regime". The proposed development is located on lands within the designated 'Mountains, Hills and Upland Areas' Landscape Character Area and is, therefore, within an area where wind farm development is prohibited. Accordingly, it is considered that the proposed development would materially contravene Policy Objective CM RE 7 of the Laois County Development Plan 2021-2027 and Policy Objective WES 7 of the Laois County Wind Energy Strategy and would, therefore, be contrary to the proper planning and sustainable development of the area.

Brendan Coyne
Planning Inspector

16th May 2024