

Environmental Impact Assessment (EIAR)

Proposed Slievegrine
Renewable Energy
Development, Co.
Waterford

Non-Technical Summary



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NON-TECHNICAL SUMMARY

This Non-Technical Summary (NTS) provides a plain-language overview of the findings of the Environmental Impact Assessment Report (EIAR) prepared for the proposed Slievegrine Renewable Energy Development in County Waterford. The document mirrors the structure of the EIAR, with Sections 1 to 17 corresponding directly to Chapters 1 to 17 of the EIAR and presents the key findings of the environmental assessments in a concise and accessible format.

1 Introduction to the Proposed Project

This EIAR has been prepared to identify, describe and assess the likely significant effects of the Proposed Project on the environment during construction, operation and, where relevant, decommissioning.

For the purposes of this EIAR:

- The **‘Proposed Project’** refers to the entire proposed development (‘Proposed Wind Farm’ and ‘Proposed Grid Connection’) for the purposes of this EIAR in accordance with the EIA Directive, which is the subject of this planning application. The Proposed Project is described in detail in Chapter 4 of this EIAR.
- The **‘Proposed Wind Farm’** refers to the 23 no. turbines, meteorological mast, telecommunications relay mast, and all associated foundations and hard-standing areas, access roads and junctions, construction compounds, 33kV underground cabling, borrow pits, spoil management, site drainage, rerouting of a section of the Dungarvan - Foxhole 38kV overhead line underground including associated 38kV end masts and a 38kV joint bay, biodiversity management and enhancement plan measures, tree felling and vegetation removal, operational stage signage, a 110kV onsite substation and all ancillary works and apparatus.
 - The **‘Proposed Turbines’** refers to the 23 no. wind turbines associated with the Proposed Wind Farm.
 - The **‘Proposed 110kV Substation’** refers to the 110kV onsite substation in the townland of Clashbrack within the Proposed Wind Farm site.
- The **‘Proposed Grid Connection’** refers to the Proposed 220kV Loop-in Substation in the townland of Ballycullane and the Proposed 110kV Underground Cabling Route and all ancillary works and apparatus.
 - The **‘Proposed 220kV Loop-in Substation’** refers to the proposed 220kV loop-in substation complex and associated construction compound in the townland of Ballycullane connecting to the existing Knockraha-Cullenagh 220kV overhead line, the proposed 220kV underground cabling, 220kV end masts, screening planting, access roads and all ancillary works and apparatus.
 - The **‘Proposed 110kV Underground Cabling Route’** refers to the 9km of 110kV cabling route and associated joint bays connecting the Proposed 110kV Substation to the Proposed 220kV Loop-in Substation.
- The **‘Site’** refers to the primary study area for the EIAR, as delineated by the EIAR Site Boundary in green as shown on Figure 1-1 of the EIAR and encompasses an area of approximately 1,450 hectares.
 - The **‘Proposed Wind Farm site’** refers to the portion of the Site surrounding the Proposed Wind Farm infrastructure detailed above.
 - The **‘Proposed Grid Connection site’** refers to the portion of the Site excluding the Proposed Wind Farm site.

The development description for the current planning application as it appears in the public notices is as follows: The proposed development will consist of the provision of;

The proposed development will consist of the provision of the following:

- i. 23 no. wind turbines of varying dimensions, a meteorological mast and a telecommunications relay mast as follows:*
 - a. 6 no. wind turbines with an overall turbine tip height of 185 metres, a rotor blade diameter of 162 metres, and turbine hub height of 104 metres;*
 - b. 15 no. wind turbines with an overall turbine tip height of 175 metres, a rotor blade diameter of 150 metres, and turbine hub height of 100 metres;*
 - c. 2 no. wind turbines with an overall turbine tip height of 170 metres, a rotor blade diameter of 150 metres, and turbine hub height of 95 metres;*
 - d. A meteorological mast with a height of 80 metres and a telecommunications relay mast with a height of 30m;*
- ii. Associated wind turbines, meteorological mast and telecommunications relay mast foundations and hardstanding areas;*
- iii. A 220kV loop-in substation compound (Including control buildings (with a combined floor area of 644Sq.m) with welfare facilities, all associated electrical plant and apparatus, security fencing, underground cabling, lightning protection poles and underground wastewater holding tank), with 220kV underground cabling connecting to 2 no. lattice-type end masts with a height of 21.5 metres to facilitate a 'Loop-in' connection to the existing 220kV Knockraha-Cullenagh overhead electricity transmission line, establishment of screening planting, all within the townland of Ballycullane;*
- iv. A 110kV substation compound (Including control buildings (with a combined floor area of 644Sq.m) with welfare facilities, all associated electrical plant and apparatus, security fencing, underground cabling, lightning protection poles and underground wastewater holding tank) in the townland of Clashbrack;*
- v. 110kV underground cabling connection from the proposed 110kV substation in the townland of Clashbrack to the proposed 220kV loop-in substation in the townland of Ballycullane, primarily located within the public road corridor (including joint bays, communication chambers, earth sheath links, and ancillary works along the cabling route);*
- vi. The re-routing underground of a section of the existing Dungarvan-Foxhole 38kV overhead line with 2 no. lattice-type end masts (15m height) and 38kV underground cabling (including joint bay) in the townlands of Cloghraun and Carronbeg;*
- vii. Underground electrical (33kV) and communications cabling connecting the wind turbines and meteorological mast to the proposed 110kV substation;*
- viii. 6 no. construction compounds (including temporary site offices and welfare facilities (with a combined floor area of 607.5 Sq.m));*
- ix. 4 no. security compounds (including temporary security cabins with a combined floor area of 72 Sq.m);*
- x. Junction accommodation works to facilitate access to the site, including the provision of new and upgrade of existing entrances and junctions off the L2024, L2021, L2023, L99997 and L6082 local roads, including new permanent gated site entrances;*
- xi. Upgrade of existing site tracks/roads and provision of new site access roads, junctions and hardstand areas (including upgrade of a short section of the L99997 local road);*
- xii. 5 no. borrow pits;*
- xiii. Spoil Management;*
- xiv. Biodiversity Management and Enhancement Plan measures (including establishment of a riparian planting, broadleaf woodland planting and hedgerow planting/enhancement);*
- xv. Tree felling and vegetation removal;*
- xvi. Site Drainage;*
- xvii. Operational stage site signage; and*
- xviii. All ancillary site development works and apparatus.*

This application is seeking a ten-year permission. Current and future wind turbine generator technology will ensure that the wind turbine model, chosen for the Proposed Project, will have an operational lifespan greater than the 35-year operational life that is being sought as part of the planning application.

This EIAR assesses that the wind turbine model installed as part of the Proposed Project will have a generating capacity mix of 6MW and 7.2MW, which is typical of modern wind turbine generators, leading to a combined generating capacity of 145.2MW (17 no. 6MW and 6 no. 7.2MW).

The Site is made up of two distinct elements, the Proposed Wind Farm and the Proposed Grid Connection. The Site is located within a rural setting in the south of County Waterford, approximately 5km southwest of Dungarvan. The village of Clashmore is located approximately 3.1km south of the Site. Current land-use on the Proposed Wind Farm site is predominantly comprised of a mix of commercial forestry and pastoral agriculture. Current land-use along the Proposed Grid Connection comprises of public road corridor and private land principally used by agriculture. The surrounding land use is predominantly pastoral agriculture, commercial forestry and residential use along local and regional roads.

Applicant

The Applicant for the Proposed Project, Slievegrine Ltd., is an associated company of Enerco Energy Ltd., which is an Irish-owned, Cork-based company with extensive experience in the design, construction and operation of wind energy developments throughout Ireland, with projects currently operating or in construction in Counties Cork, Kerry, Limerick, Clare, Galway, Mayo and Donegal.

By the end of 2025, Enerco associated companies had over 975 Megawatts (MW) of wind generating capacity in commercial operation or in construction, with a further c.500MW of projects at various stages in its portfolio to assist in meeting Ireland's renewable energy targets.

Need for the Proposed Project

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

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

Economic Benefits

The Proposed Project will have both long-term and short-term benefits for the local economy including additional income to local landowners, job creation, work opportunities for local businesses and service providers, local authority commercial rate payments and a Community Benefit Fund.

It is estimated that the Proposed Project has the potential to create in the order of 120-150 jobs during the construction phase and 2-3 jobs during operational and maintenance phases. During construction, additional indirect employment will be created in the region through the supply of services and materials. There will also be income generated by local employment from the purchase of local services i.e., travel, goods and lodgings. Further details on employment associated with the Proposed Project are presented in Chapter 5 of this EIAR, Population and Human Health.

Should the Proposed Project receive planning permission, and be developed under the Renewable Energy Support Scheme (RESS), the proposed Community Benefit Fund would attract a community contribution in the region of approximately €890,000/year for the first 15 years of operation, to be used by the local community (based on the current RESS T&C's). Should the Proposed Project not be developed under RESS, a community benefit scheme is proposed to provide a fund of €1/MWh per annum over the full 35 years lifespan of the Proposed Wind Farm. This will equate to potential funding

of over €15.5 million to the local community. The value of this fund will be directly proportional to the energy produced by the Proposed Wind Farm and will support and facilitate projects and initiatives in the area.

Purpose and Scope of the EIAR

The purpose of this EIAR is to document the current state of the environment on and in the vicinity of the Site and to quantify the likely significant effects of the Proposed Project on the environment. The compilation of this document serves to highlight any areas where mitigation measures may be necessary in order to protect the surrounding environment from the possibility of any negative impacts arising from the Proposed Project. This EIAR uses the grouped structure method to describe the existing environment, the potential impacts of the Proposed Project thereon and the proposed mitigation measures. Background information relating to the Proposed Project, scoping and consultation undertaken and a description of the Proposed Project are presented in separate sections.

The EIAR project team comprises a multidisciplinary team of experts with extensive experience in the assessment of wind energy developments and in their relevant area of expertise. Each chapter of this EIAR has been prepared by a competent expert in the subject matter. The chapters of the EIAR are as follows:

1. Introduction to the Proposed Project
2. Background to the Proposed Project
3. Considerations of Reasonable Alternatives
4. Description of the Proposed Project
5. Population and Human Health
6. Biodiversity
7. Ornithology
8. Land, Soils and Geology
9. Hydrology and Hydrogeology
10. Air Quality
11. Climate
12. Noise and Vibration
13. Landscape and Visual
14. Archaeology, Architectural and Cultural Heritage
15. Material Assets
16. Major Accidents and Natural Disasters
17. Interactions of the Foregoing
18. Schedule of Mitigation Measures

A Natura Impact Statement has also been prepared in line with the requirements of the Habitats Directive and accompanies this planning application.

2

Background to the Proposed Project

This chapter of the EIAR presents the relevant energy and climate change related policy and targets along with the strategic, regional, and local planning policies relevant to the Proposed Project. The ‘Proposed Project,’ is being brought forward in response to local, regional, national and European policy regarding Ireland’s transition to a low-carbon economy, associated climate change policy objectives and to reduce Ireland’s dependence on imported fossil fuels for the production of electricity.

European and National Level

The Proposed Project is strongly supported by EU and national policy and legislation. At an EU level the Proposed Project is supported by the EU Renewable Energy Directive and RePowerEU. At a national level, the Proposed Project is supported by Project Ireland 2040 – the National Planning Framework, the Climate Action Plan 2025, the National Energy Security Framework, among other

national climate and energy policies. Planning Authorities have clear legal obligations under the Climate Action and Low Carbon Development (Amendment) Act 2021 and the Act when assessing planning applications for renewable wind energy developments. They are required to make decisions consistent with national climate policies and objectives, including the latest climate action plan, national adaptation frameworks, and the overarching goal of reducing greenhouse gas emissions.

Regional Policy

The Southern Regional Assembly (SRA) was established in 2015 and the Regional Spatial and Economic Strategy (RSES) for the Southern Region (Carlow, Clare, Cork, Kerry, Kilkenny, Limerick, Tipperary, Waterford and Wexford) came into effect on 31st January 2020. The RSES provides a long-term, strategic development framework for the future physical, economic and social development of the Southern Region.

The RSES supports the development of renewable energy within the Southern Region and recognises the opportunities associated with the transition to a decarbonised economy, including renewable energy generation. The Proposed Project, through the provision of approximately 145.2 MW of renewable wind energy capacity, would contribute to these regional objectives and is therefore considered to be consistent with the relevant provisions of the RSES.

Local Planning Policy

Waterford City & County Development Plan 2022-2028

The policies of the Waterford City & County Development Plan 2022-2028 (WCCDP) incorporate climate change mitigation and adaptation strategies. The strategic vision of the WCCDP is underpinned by a number of overarching goals.

The Proposed Project would add approximately 145.2 MW of installed onshore-wind capacity and would therefore make a material contribution to the county target and to the transition away from fossil-fuel electricity generation.

Waterford Renewable Strategy 2016-2030

The Waterford Renewable Energy Strategy 2016-2030 (Waterford RES) examines the renewable energy potential for the city and county and considers the strategic planning factors contributing towards the deployment of such renewable energy.

The Waterford RES characterises the county into 3 different policy areas aimed at facilitating large scale commercial wind energy developments. These policy areas are based on a number of criteria, including accessibility to the electricity distribution grid, used to identify suitable areas for wind energy developments. The areas and descriptions are set out below.

- > Preferred Areas,
- > Open for Consideration Areas,
- > Exclusion Areas.

While not defined in the WCCDP 2022-2028, 'Preferred areas' were previously defined in WCDP 2011-2017 as:

"Areas which are suitable and should generally be considered for permission unless local circumstances dictate otherwise"

The Proposed Wind Farm is located within a designated 'Preferred Area' for wind energy development, indicating that the site is considered suitable in principle for such development, subject to detailed site-specific assessment and compliance with all relevant planning and environmental requirements. Having regard to the applicable policies and objectives of the WCCDP, the Proposed Wind Farm is considered to accord with the relevant provisions of the Plan and to represent appropriate and sustainable development within the area of WCCC.

Waterford City & County Council Climate Action Plan 2024-2029

The Waterford City & County Council Climate Action Plan 2024-2029 (Waterford CAP) sets out to enable solutions at a local level to address climate change. The Climate Action Plan will enable a transition to a low-emission and climate resilient society. The Climate Action Plan identifies strategic objectives, supported by specific actions.

Wind Energy Development Guidelines 2006

In June 2006, the then Department of Environment, Heritage and Local Government (DoEHLG) published the Wind Energy Development Guidelines, 2006 (the Guidelines (DoEHLG, 2006)) under Section 28 of the Act. The aim of the Guidelines (DoEHLG, 2006) was to assist the proper planning of wind power projects in appropriate locations around Ireland. The Guidelines (DoEHLG, 2006) also highlight general considerations in the assessment of all planning applications for wind energy. They set out advice to planning authorities on planning for wind energy through the development plan process and in determining applications for planning permission. They contain guidelines to ensure consistency of approach throughout the country in the identification of suitable locations for wind energy development.

The Guidelines (DoEHLG, 2006) should be applied practically and do not replace existing national energy, environmental and planning policy. At time of writing, the Draft Revised Wind Energy Development Guidelines (the Draft Guidelines (DoHPLG, 2019)) have not yet been adopted, and the relevant guidelines for the purposes of section 28 of the Planning and Development Act 2000, as amended, remain to be the Guidelines (DoEHLG, 2006). Notwithstanding this, however, due to the timelines associated with the planning process for renewable energy projects and the commitment within the CAP25 to publish new wind energy guidelines for onshore wind in Q1 2026 it is possible that the Draft Guidelines (DoHPLG, 2019) may be adopted during the consideration period for the current planning application. Without benefit of the revised wind energy development guidelines for onshore wind, it is considered that since noise emissions and shadow flicker are controllable via inbuilt turbine technologies, therefore, the Proposed Wind Farm is capable of compliance with any future guideline limits in this regard.

Draft Wind Energy Development Guidelines 2019

The Department of Housing, Planning and Local Government (DoHPLG) published the Draft Guidelines (DoHPLG, 2019) in December 2019. A consultation process in relation to the Draft Guidelines (DoHPLG, 2019) concluded on the 19th of February 2020. A further review of the Draft Guidelines (DoHPLG, 2019) is currently underway by the Department of Housing, Local Government and Heritage (DoHLGH) and the Department of Environment, Climate and Communications (DoECC), particularly in relation to noise limits. Since the publication of the Draft Guidelines (DoHPLG, 2019), there have been significant changes in national policy regarding renewable energy targets, giving further impetus to the importance of the further review.

The design of the Proposed Project has been developed with the provisions of the Draft Guidelines (DoHPLG, 2019) in mind (for example in relation to 4 times turbine tip height set back distance from third party sensitive receptors) and the inclusion of a standalone community report.

Scoping and Consultation

Ch.2: Background to the Proposed Project: Section 2.7 of this EIAR presents details of the EIA scoping undertaken with regards to the Proposed Project. A scoping report, EIAR scoping document, providing details of the Proposed Project, was prepared by MKO and circulated in July 2025. The scoping document provided details of the Proposed Project and set out the scope of work for the EIAR. Consultees were invited to contribute to the EIAR by suggesting baseline data, survey techniques and potential impacts that should be considered as part of the assessment process and in the preparation of the EIAR. A revised scoping exercise was carried out in July 2026 due to time elapsed from when previous scoping was carried out.

Telecommunications operators were scoped at an earlier stage for the purposes of constraints mapping. Copies of all scoping responses received as of October 2026 are included in Appendix 2-1 of this EIAR. The recommendations of the consultees have informed the scope of the assessments undertaken and the contents of the EIAR.

Section 2.8.2 of this EIAR includes details of the community engagement undertaken by the Applicant with the wider communities with regards to the Proposed Project. The Community Liaison Strategy for the Proposed Project was based around engaging with the local community in an open, honest and transparent manner with the aim to not only provide clear and understandable information but also to gain feedback to understand the views of the local community. This feedback and information were used to inform the design process. The community consultation effort was led by Slievegrine Ltd. A Community Liaison Officer (CLO) was appointed and remains as the point of the contact for the Proposed Project and has been engaging with the local community.

Cumulative Impact Assessment

The EIA Directive and associated guidance documents state that as well as considering any direct, indirect, secondary, transboundary, short-, medium-, and long-term, permanent, and temporary, positive and negative effects of the project (all of which are considered in the various chapters of this EIAR), the description of likely significant effects should include an assessment of cumulative impacts that may arise. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project. The factors to be considered in relation to cumulative effects include population and human health, biodiversity, land, soil, water, air, climate, material assets, landscape, and cultural heritage as well as the interactions between these factors.

To gather a comprehensive view of cumulative impacts on these environmental considerations and to inform the EIAR process being undertaken by the consenting authority, each relevant chapter within this EIAR includes a cumulative impact assessment where appropriate.

Consideration of Reasonable Alternatives

Ch. 3 '*Consideration of Reasonable Alternatives*' contains a description of the reasonable alternatives that were studied by the Applicant, which are relevant to the Proposed Project and its specific characteristics, in terms of site location and other renewable energy technologies, as well as site layout incorporating size and scale of the Proposed Project, connection to the national grid and transport route options to the Proposed Wind Farm. This chapter also outlines the design considerations in relation to the Proposed Project. It provides an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects. The consideration of reasonable alternatives is an effective means of avoiding environmental impacts.

Alternative Site Locations

The process of identifying a suitable location for a development such as the Proposed Project is influenced by a number of factors. While wind speeds, the extent of suitable or available land, proximity to the grid connection point, and planning policy are all very important, a wind farm project must also be commercially viable or it will not attract the necessary project finance required to see it built.

The Site has been identified as having potential for a wind energy development as a result of a nationwide search of suitable lands. The site selection process has been constrained (restrictions that inform the location and design of a project by highlighting sensitivities) and facilitators (factors that give an advantage to a proposed project) led.

Alternative Renewable Energy Technologies

When considering other renewable energy technologies, the Applicant considered offshore wind and commercial solar energy production as an alternative to the Proposed Wind Farm.

Enerco Energy Ltd has a keen interest in offshore wind farms and has explored potential offshore sites. However, it is considered that due to delays with the regulatory process for offshore development, a combination of both onshore and offshore wind farm development will continue to be required to deliver on the ambitious renewable energy targets set out under CAP25. As such, Enerco's primary focus remains to be onshore wind farms, and they will continue to explore potential development offshore in tandem with delivering suitable sites onshore such as the Proposed Project.

The amount of electrical energy output from renewable generation is generally described in terms of capacity factor. The capacity factor relates to the amount of energy that may be achieved from a renewable technology over the period of one calendar year. Generally solar PV has a lower capacity factor than wind generation. One factor in the energy yield difference is that solar PV does not produce electrical energy at night, but the wind can blow at any time of the day or night. The expected capacity factor for wind generation at the Proposed Wind Farm site is 35% (0.35)¹. If solar PV was to be deployed on the Proposed Wind Farm site, it would be located within the Solar South and would have a capacity factor for solar in this region is 13.3% (0.133)².

A solar PV array of the scale necessary to provide the same electricity output as the Proposed Wind Farm Site would require a footprint of approx. 134.4 hectares³ or 11.6% of the overall Site. In addition, a solar development of this scale, would have a higher potential environmental effect on Traffic and Transport (construction phase), Air Quality (construction phase) and Biodiversity and Ornithology (habitat loss), a greater potential for direct impacts on unknown subsurface archaeology (construction phase) and glint and glare at the Site (operational phase). Furthermore, the implementation of a solar development would require the removal of the existing forestry, resulting in additional environmental and landscape impacts. In contrast, a wind energy development allows for the continued co-existence of the forestry, thereby minimising land use change and preserving existing habitats.

Taking into account the factors outlined above, and considering the farming practices in the area, it has been determined that wind energy is the most suitable renewable energy technology for the Site with the lesser potential for significant, adverse environmental effects.

¹ <https://www.eirgridgroup.com/site-files/library/EirGrid/ECP-2-2-Solar-and-Wind-Constraints-Report-Area-I-v1.0.pdf>

² <https://www.eirgridgroup.com/site-files/library/EirGrid/ECP-2-2-Solar-and-Wind-Constraints-Report-Area-I-v1.0.pdf>

³ Approximately 1.6 - 2 ha are required for each MW of solar panels installed based on approximately 4000 panels per MW (taken from the Sustainable Energy Authority Solar Energy FAQ publication which can be accessed here: https://www.seai.ie/publications/FAQs_on_Solar_PV.pdf). For the purposes of comparison, a minimum value of 1.6 ha has been assumed.

Alternative Turbine Numbers and Model

The Proposed Project will have an estimated installed capacity of 145.2 MW. Such a wind farm could also be achieved by using smaller turbines (for example, 2.5 MW machines). However, this would necessitate the installation of 58 turbines to achieve a similar output. The selected turbine dimensions and number of turbines for the Proposed Wind Farm is considered to strike the right balance compared to the other alternatives considered in relation to overall development footprint, reducing the potential for environmental effects, while still achieving the optimum output at a more consistent level than would be achievable using different turbines.

Constraints and Facilitators Mapping

The design and layout of the Proposed Project follows the recommendations and guidance set out in the Guidelines (DoEHLG, 2006) and the *'Best Practice Guidelines for the Irish Wind Energy Industry'* (Irish Wind Energy Association, 2012).

The constraints mapping process involves the placing of buffers around different types of constraints so as to clearly identify the areas within which no development works will take place. Should the Draft Guidelines (DoHPLG, 2019) be adopted in advance of a decision being made on this planning application, the Proposed Project will be capable of achieving the requirements of the Draft Guidelines (DoHPLG, 2019) as currently proposed.

The layout for the Proposed Wind Farm included the following constraints and associated buffers:

- **Sensitive Receptors:** a minimum 500m setback from all sensitive receptors achieving the Guidelines (DoEHLG, 2006) recommended setback of 500m and a 680m, 700m or 740m setback (dependant on turbine height in proximity to the sensitive receptor) from third party sensitive receptors achieving the Draft Guidelines (DoHPLG, 2019) recommended setback of 4 x tip height separation distance from third party sensitive receptors.
- **Natura 2000:** sites plus 200-metre infrastructure/excavation buffer;
- **Hydrology:** Watercourses plus 50-metre buffer where possible;
- **Archaeological Sites or Monuments;** minimum 30-metre buffer, plus 'Zone of Notification' as required by the National Monuments Service (ROI)
- **Habitats and Biodiversity:** Species specific buffers. Siting of infrastructure so as to minimise loss of habitats of Local Importance (higher value) and higher.

Facilitators at the Site build on the existing advantages and include the following:

- Available lands for development;
- Acceptable wind resource;
- Proximity to national grid node;
- Opportunity to win construction materials on site, minimising the potential for additional traffic (and associated environmental impacts) and cost generation by acquiring all materials offsite; Existing access points and general accessibility of all areas of the Site due to existing road infrastructure; and,
- Limited extent of constraints.

The inclusion of the constraints on a map of the Proposed Wind Farm site allowed for a viable area to be identified. An initial turbine layout was then developed to take account of all the constraints mentioned above and their associated buffer zones and the separation distance required between the turbines. Following the mapping of all known constraints, detailed site investigations were carried out by the project team including, ecological, hydrological & hydrogeological, and Geotechnical.

The turbine layout for the Proposed Wind Farm has also been informed by the results of noise assessments, landscape and visual assessments, and the separation distance to be maintained between

turbines. Thus, the baseline environmental assessment of the Site and wind farm design was an iterative process, where findings at each stage of the assessment were used to further refine the design, always with the intention of minimising the potential for environmental impacts.

Alternative Proposed Project Layout Iterations

The design of the Proposed Project has been an informed and collaborative process from the outset, involving the designers, developers, engineers, landowners, environmental, hydrological and geotechnical, landscape, archaeological, and traffic specialists, all with the objective of reducing the potential for environmental effects while designing a project that is capable of being constructed and viable.

Throughout the preparation of this EIAR, the layout of the Proposed Project was revised and refined to take account of the findings of all site investigations and baseline assessments, and the recommendations and comments of the relevant statutory and non-statutory consultees, the local community and local authority.

The final design of the Proposed Project takes account of all site desk top constraints and the results of the site investigations. The initial constraints study identified a significant viable area within the overall study area of the original site. The initial turbine layout comprised of up to 28 no. turbines, however the proposed 23-turbine layout was refined following feedback from the project team. All the individual components of the Proposed Project went through several iterations including turbine locations, hardstands, access roads, underground cabling, met mast, telecommunications mast, borrow pits, substation locations, biodiversity enhancement areas, construction compounds, security compounds and grid connection routes.

4

Description of the Proposed Project

This Chapter of the EIAR describes the Proposed Project and all its component parts. Construction methodologies for the main infrastructural components of the Proposed Project are also included in Chapter 4 (or its associated appendices) of the EIAR.

The overall layout of the Proposed Project is shown on Figure 4-1. This figure shows the locations of the Proposed Turbines, Proposed 110kV Substation, borrow pits, met mast, telecommunications relay mast, construction compounds, biodiversity management and enhancement (BMEP) measures, 38kV cabling works, internal roads layout, Proposed 110kV Underground Cabling Route and Proposed 220kV Loop-in Substation.

Proposed Turbines

The layout of the Proposed Turbines has been optimised using wind farm design software (WindPro) to maximise the energy yield from the Proposed Project. The ITM Grid Reference coordinates and the dimensions of the Proposed Turbines are listed in Tables 4-1 and 4-2 of the EIAR, and are repeated below in Table 1 and 2.

Table 1 Proposed Wind Turbine Locations and Elevations

Turbine	ITM X	ITM Y	Top of Foundation Levels (metre OD)
1	619870	589557	234
2	620325	589626	245.5
3	620459	589176	228

4	620938	589327	236
5	621227	589009	226.5
6	621717	589023	201
7	619339	587736	190
8	619803	587602	168.8
9	620382	587597	154
10	620784	587144	137
11	621314	587391	141.5
12	621876	587432	150
13	617902	587077	261
14	618391	587029	236.5
15	618908	587147	200
16	619106	586747	188
17	619562	586713	173
18	617635	586534	246
19	618079	586508	220
20	618468	586358	196
21	617920	586003	189.5
22	615346	586108	202
23	615933	586293	194

Table 2 Proposed Turbine Dimensions

Turbine ID	Tip Height (m)	Rotor Diameter (m)	Hub Height (m)
T1 - T6, T13 - T21	175	150	100
T7 - T12	185	162	104
T22 & T23	170	150	95

The Proposed Turbines will be conventional three-blade turbines, that will be geared to ensure the rotors of all turbines rotate in the same direction at all times.

For the purposes of this EIAR, a rated output of 6 MW for the 170m and 175m tip height turbines and 7.2MW for the 185m tip height turbines has been chosen to calculate the potential generating capacity

of the proposed 23-turbine renewable energy development, which results in an estimated installed capacity of 145.2MW.

Site Roads

The Proposed Project makes use of the existing road network insofar as possible. It is proposed to upgrade approx. 8.9km of existing roads and tracks, and to construct approx. 13.5km of new access road on the Site.

Met Mast

One meteorological (met) mast is proposed as part of the Proposed Wind Farm. The met mast will be equipped with wind monitoring equipment at various heights. The met mast will be a free-standing slender lattice structure 80m in height. It will be constructed on a hard-standing area sufficiently large to accommodate the equipment that will be used to erect the mast.

Telecommunications relay mast

One telecommunications relay mast is proposed as part of the Proposed Wind Farm. The telecommunications relay mast will be equipped with a telecommunications dish which will function to relay 2 no. telecommunications signals. The telecommunications relay mast will be a free-standing slender lattice structure 30 metres in height. It will be constructed on a hard-standing area sufficiently large to accommodate the equipment that will be used to erect the mast.

Proposed 110kV Substation

The footprint of the Proposed 110kV Substation compound measures approximately 9,148 square metres in area and will include 2 no. control building, staff parking facilities and all electrical substation components necessary to consolidate the electrical energy generated by each wind turbine, and export that electricity from the Proposed 110kV Substation to the national grid. The Proposed 110kV Substation compound will include steel palisade fencing (approximately 2.6 metre high or as otherwise required by ESB), and internal fences will also segregate different areas within the main substation.

33kV Internal Cabling

Each turbine will be connected to the Proposed 110kV Substation via underground 33kV electricity cabling. Fibre-optic cables will also connect each wind turbine and the meteorological mast to the Proposed 110kV Substation. The electricity and fibre-optic cabling connecting to the Proposed 110kV Substation will be run in cable ducts approx. 1.2m beneath ground level following the access track routes to each turbine location.

Construction compounds

There are 6 no. construction compounds proposed as part of the Proposed Project. All construction compound facilities will be removed as part of the post-construction reinstatement works of the Proposed Project. The construction compounds will be allowed to naturally revegetate during the Operational Phase of the Proposed Project.

38kV Underground Electrical Cabling

It is proposed to reroute a 1230m section of the existing Dungarvan-Foxhole 38kV overhead line (OHL) underground to facilitate the Proposed Wind Farm. The route for the 38kV underground electrical cabling will be installed within a new access track across agricultural lands. The existing 38kV OHL will be broken by two new 15m tall end masts (lattice-type towers) to facilitate the underground cabling and Proposed Wind Farm construction.

Biodiversity Management and Enhancement Plan

A Biodiversity Management and Enhancement Plan (BMEP) has been prepared as part of the Proposed Project. The following BMEP measures are proposed:

Hedgerow Enhancement

It is proposed to plant 5.5km of new hedgerow within the Site. The proposed new hedgerow includes approximately 1.2km of riparian hedgerow planting proposed

alongside existing river corridors, in order to provide further benefits of excluding access to the watercourse by livestock, and by providing an additional vegetative buffer to slow down run-off from adjacent lands to the watercourses in these areas.

➤ **Native Woodland Planting**

It is proposed to establish a new native woodland measuring 3.6ha in area. This woodland will include a riparian boundary along a tributary of the Licky River, measuring approx. 100m in length. The proposed planting area is located at the southern boundary of the Proposed Wind Farm site, south of the Proposed Turbine T10. This location has been strategically sited in an area characterised by high surface water flows.

➤ **Water Quality Protection**

Watercourses and tributaries to the River Licky within the Site where poaching was recorded will be fenced off for livestock. Where linear riparian planting is proposed along a watercourse, this will also be fenced off for livestock and access to the watercourse will thereby be restricted also.

➤ **Proposed Nest/ Den Box Installation**

It is proposed to erect two pine marten den boxes and two red squirrel nest boxes within the Proposed Wind Farm site. These will be erected immediately post construction (to avoid disturbance to these species during construction). They will be erected along existing mature tree lines and in suitable locations where future tree felling (associated with forestry) will not occur.

➤ **Pollinator Foraging/ Nesting Habitats**

Berms/embankments will be created around permanent built infrastructure with excess excavated soils in areas identified as being suitable by the designer. New soil berms/embankments will be allowed to revegetate and recolonise naturally, using the native seed bank. No pesticides, herbicides or fertiliser will be used on these berms. Allowing the native seedbank to establish will create foraging habitat for pollinators. It is proposed to maintain south-facing embankment slopes of new berms/embankments free of vegetation to provide bare soil for nesting pollinators.

Borrow Pit and Spoil Management

It is intended to obtain the majority of materials for the construction of the Proposed Project from 5 no. onsite borrow pits. Access to the borrow pits will be via both the proposed new and existing access roads throughout the Proposed Wind Farm site.

It is proposed to manage overburden generated through construction activities for the Proposed Project locally within the Site, through backfilling of the proposed borrow pits void. Linear berms will be placed along access roads within the Site and around the Proposed 220kV Loop-in Substation where appropriate for landscaping purposes. There will be no temporary stockpiling of excavated spoil within the stockpile exclusion area at T12 and within 50m of any natural watercourses within the Site or within 10m of any drainage features.

Felling

The conifer forestry felling activities required as part of the Proposed Project will be the subject of a Limited Felling Licence (LFL) application to the Forest Service in accordance with the Forestry Act 2014 and the Forestry Regulations 2017 (SI 191/2017) and as per the Forest Service's policy on granting felling licenses for wind farm developments.

Proposed Grid Connection

It is proposed to connect the Proposed 110kV Substation to the Proposed 220kV Loop-in Substation in the townland of Ballycullane, Co Waterford via 110kV underground electrical cabling. The Proposed 110kV Underground Cabling Route is approximately 9km in length. There are 13 no. joint bays proposed along the Proposed 110kV Underground Cabling Route, approximately 600 to 800 metres apart.

The Proposed 220kV Loop-in Substation is located within agricultural pastures and will be accessed via a new proposed site entrance off of the L99997 local road in the townland of Graigue. Screening planting is proposed as part of the Proposed 220kV Loop-in Substation which will consist of c.250m of linear planting features consisting of native evergreen species. This planting is located surrounding the northwestern portion of the compound.

It is proposed to construct a 220kV underground cabling connection between the Proposed 220kV Loop-in Substation and the existing 220kV Knockraha to Cullenagh overhead line (OHL). The route for the 220kV underground electrical cabling will be approximately 564m long and within proposed new roads adjacent to the Proposed 220kV Loop-in Substation.

The existing 220kV OHL will be broken by two new end masts (lattice-type towers) c.21.5 metres in height, to facilitate the connection to the national grid.

Watercourse Crossings

There is 6 no. EPA/OSI mapped watercourse crossings required for the Proposed Project. These include 4 no. crossings for the Proposed Wind Farm consisting of 2 no. new bottomless box culverts, 1 no. new clear span crossing and the upgrade of 1 no. existing crossing, and 2 no. crossings of exiting bridges/culverts along the Proposed 110kV Underground Cabling Route.

Site access and turbine delivery route

A general construction entrance for the Proposed Wind Farm will be constructed on the L-2024 in the townland of Pulla. This entrance will be used as the main entrance for construction traffic and turbine components throughout the construction phase.

Junction upgrade works are required on the existing R671/L-99997 junction to facilitate transformer delivery of the Proposed 220kV Loop-in Substation.

Additionally, a new general construction entrance for the Proposed 220kV Loop-in Substation complex will be constructed off of the L99997 local road in the townland of Graigue. This entrance will be used as the main entrance for construction traffic throughout the construction phase of the Proposed 220kV Loop-In Substation.

Five other site entrances will be established throughout the Site for use throughout all phases of the Proposed Project for general construction vehicles and operational phase monitoring vehicles. All entrances for the Proposed Project are outlined below:

Site Entrance Number	Townland	Road
1 – Main Entrance	Pulla	L-2024
2 – Secondary Entrance	Clashbrack	L-2024
3 – Secondary Entrance	Clashbrack	L-2024
4 – Existing Junction Upgrade	Reamanagh East	L-6085
5 – Existing Junction Upgrade	Drumslig	L-2023
6 – Existing Junction Upgrade	Cloghraun	L-6082
7 – Existing Junction Upgrades	Graigue	R671/L-99997
8 – Proposed 220kV Loop-in Substation Entrance	Graigue	L-99997

For the purpose of this EIAR, the Port of Waterford has been selected and assessed to facilitate turbine delivery to the Site. It is proposed that the large wind turbine components will be delivered from Belview Port (Port of Waterford), Co. Waterford to the Site via the N29 and N25 for approximately 62.8km, exiting at the L2024/N25 Junction in Pulla before heading west along the L2024 for 1.1km before reaching the main site entrance.

Construction sequencing

It is estimated that the construction phase of the Proposed Project will take approximately 18-24 months from commencement of civil works to the commissioning of the wind turbines. The construction phase can be broken down into three main phases, which overlap partially, 1) civil engineering works - 10 months, 2) electrical works including grid connection works - 9-12 months, and 3) turbine erection.

Decommissioning

The Proposed Turbines are expected to have a lifespan of approximately 35 years. Following the end of their useful life, the equipment may be replaced with a new technology, subject to planning permission being obtained, or the Proposed Wind Farm will be decommissioned fully.

Upon decommissioning of the Proposed Wind Farm, the Proposed Turbines, the meteorological mast and the telecommunications relay mast will be disassembled in reverse order to how they were erected. All above ground turbine and mast components would be separated and removed off-site for recycling. Turbine and mast foundations would remain underground and would be covered with earth and allowed to revegetate. Leaving the foundations in-situ is considered a more environmentally prudent option, as to remove that volume of reinforced concrete from the ground could result in significant temporary environment nuisances such as noise, dust and/or vibration. Site roadways will be used during the operational phase by farm machinery and will provide a useful means of extracting the commercial forestry crop which exists on at the Site and therefore will be retained post decommissioning to facilitate these activities.

The 33kV underground electrical cabling connecting the Proposed Turbines to the Proposed 110kV Substation will be removed from the cable ducts. The cable ducting will be left in-situ as it is considered the most environmentally prudent option, avoiding unnecessary excavation and soil disturbance.

The Proposed 110kV Substation and associated Proposed 110kV Underground Cabling Route along with the Proposed 220kV Loop-in Substation and associated 220kV underground electrical cabling and 220kV end masts, will remain in place as they will form part of the National Grid under the ownership and control of the ESB and EirGrid.

5 Population and Human Health

The key issues examined in Chapter 5 of the EIAR include population, human health, employment and economic activity, land use, residential amenity (including visual amenity, shadow flicker and noise), community facilities and services, tourism, property values, traffic and health and safety.

One of the principal concerns during the development process is that human beings, as individuals or communities, should experience no significant diminution of their quality of life from the direct, indirect or cumulative effects arising from the construction, operation and decommissioning of a development. Ultimately, all the effects of a development impinge on human beings, directly and indirectly, positively and negatively.

The majority of construction workers and materials will be sourced locally where available, thereby helping to sustain employment in the construction trade. This will have a short-term significant positive effect.

The injection of money in the form of salaries and wages to those employed during the construction phase of the Proposed Project has the potential to result in an increase in household spending and

demand for goods and services in the local area. This would result in local retailers and businesses experiencing a short-term positive effect on their cash flow.

There is currently no published credible scientific evidence to positively link wind turbines with adverse health effects. The main publications supporting the view that there is no evidence of any direct link between wind turbines and health are summarised in Chapter 5. Similarly, there is insufficient evidence from the scientific literature discussed in Chapter 5 to credibly determine that there is the potential for a significant effect on property values in Ireland, as a result of the Proposed Project.

Shadow flicker is an effect that occurs when rotating wind turbine blades cast shadows over a window in a nearby property. Shadow flicker lasts only for a short period of time and occurs only during certain specific combined circumstances. The Guidelines (DoEHLG, 2006) recommend that shadow flicker at neighbouring dwellings within 500 metres of a proposed turbine location should not exceed a total of 30 hours per year or 30 minutes per day.

The Shadow Flicker Study Area for the shadow flicker assessment is ten times the rotor diameter of the Proposed Turbines (i.e 1.5km or 1.62km as appropriate). There are 173 no. sensitive receptors located within the Shadow Flicker Study Area.

WindPro computer software (version number 4.0.552) was used to model the predicted daily and annual shadow flicker levels in significant detail, identifying the predicted daily start and end times, maximum daily duration and the individual turbines predicted to give rise to shadow flicker.

The model results assume worst-case conditions, including:

- 100% sunshine during all daylight hours throughout the year,
- An absence of any screening (vegetation or other buildings),
- That the sun is behind the turbine blades,
- That the turbine blades are facing the property, and
- That the turbine blades are moving.

The predicted shadow flicker levels have been modelled for all 173 no. sensitive receptors located within the Shadow Flicker Study Area. The predicted shadow flicker model results indicate:

- 39 sensitive receptors are theoretically predicted to experience zero shadow flicker;
- 134 sensitive receptors are theoretically predicted to experience some shadow flicker;
 - Of the 134 sensitive receptors, 77 sensitive receptors are theoretically predicted to experience shadow flicker that exceeds the Guideline thresholds for daily and/or annual shadow flicker. It should be noted that 11 of these 77 sensitive receptors are involved landowners. Please see Table 5-11 of Chapter 5 for details.
- The annual threshold of over 30 hours for shadow flicker (Guidelines) is predicted to be exceeded at 10 sensitive receptors once the regional sunshine average factor of 33.4% has been considered. It should be noted that 2 of these 10 sensitive receptors are involved landowners.

There is no potential for cumulative shadow flicker effects between the Proposed Project and any surrounding wind farms.

For the assessment of cumulative effects, any other existing, permitted or proposed projects (wind energy or otherwise) have been considered in Section 5.10.5 of Chapter 5. Mitigation measures will be implemented to ensure that the current adopted Guidelines (DoEHLG, 2006) are complied with at any property within the Shadow Flicker Study Area. The same mitigation measures (with stricter implementation of shadow flicker controls) also demonstrate that the Proposed Turbines can be operated in accordance with the shadow flicker requirements of the Draft Guidelines (DoHPLG, 2019),

should they be adopted as currently proposed, while the planning application is being determined (i.e. zero shadow flicker).

The Proposed Project will be constructed, operated and decommissioned in accordance with the design, best practice and mitigation that is described within this EIAR, ensuring that significant effects on population and human health employment and economic activity, land-use, residential amenity, community facilities and services, tourism, property values and health and safety are not anticipated at international, national or county scale.

6

Biodiversity

This chapter assesses the likely significant effects (both alone and cumulatively with other projects) that the Proposed Project may have on Biodiversity (excluding birds, assessed in Chapter 7 of the EIAR), and sets out the mitigation measures proposed to avoid, reduce or offset any potential significant effects that are identified.

To inform the assessment, a comprehensive desk study, NPWS consultation, and a programme of ecological surveys were undertaken between November 2024 and May 2026. These included habitat surveys, botanical surveys, terrestrial mammal surveys, bat surveys, otter surveys, aquatic ecology and freshwater pearl mussel surveys.

The Site is dominated by commercial conifer forestry and improved agricultural grassland, with smaller areas of wet grassland, scrub, hedgerows, treelines, drainage ditches and watercourses. No Annex I habitats, protected flora or rare plant species were recorded within the Site.

A range of protected fauna species were recorded or identified as using habitats within or surrounding the Site, including badger, otter, pine marten, red squirrel, bats and aquatic species. Surveys confirmed the presence of an active badger sett, signs of pine marten and red squirrel activity, and evidence of otter activity downstream of the Site. No otter holts were recorded.

Bat surveys identified six bat species using the area, with common pipistrelle, soprano pipistrelle and Leisler's bat recorded most frequently. A small soprano pipistrelle roost was confirmed within one existing structure, which will be retained and protected.

Aquatic surveys identified watercourses supporting salmon, brown trout, European eel and lamprey. Freshwater pearl mussels, a species of high conservation importance, were recorded downstream of the Proposed Wind Farm site within the River Licky, which forms part of the Blackwater River (Cork/Waterford) SAC.

Several nationally and internationally important nature conservation sites occur within the wider area, including the Blackwater River (Cork/Waterford) SAC, Blackwater Estuary SPA and Dungarvan Harbour SPA. Potential effects on European sites are assessed separately through the Appropriate Assessment process.

A BMEP is proposed as part of the Proposed Project. It is expected that the BMEP measures will reduce existing pressures on freshwater pearl mussel populations such as nutrient input and sedimentation through poaching. Overall the BMEP will result in a biodiversity net gain as part of the Proposed Project.

Construction of the Proposed Project will require the permanent loss of areas of commercial conifer forestry, recently felled forestry, improved agricultural grassland, wet grassland, hedgerow and treeline habitat. Most habitat loss relates to habitats of relatively low ecological value that are widespread in the surrounding landscape.

Potential impacts identified include:

- Loss of hedgerow and treeline habitat.
- Temporary disturbance to mammals and bats during construction.
- Potential impacts on rivers and aquatic species, including freshwater pearl mussel, through accidental sediment or pollution release during construction works.
- Potential operational collision risk for certain bat species around turbines.

The Proposed Project design has incorporated measures to avoid or reduce impacts on biodiversity wherever possible.

Following implementation of the proposed mitigation and BMEP measures, the assessment concludes that the Proposed Project will not result in significant residual effects on biodiversity. No significant residual effects are predicted for habitats, protected species, aquatic ecology, designated sites or other Key Ecological Receptors. It has also been concluded that the Proposed Project, either alone or in combination with other plans or projects, will not adversely affect the integrity of any European site. An assessment of cumulative effects is detailed in Section 6.5 of Chapter 6.

It is therefore judged that, provided that the Proposed Project is constructed and operated in accordance with the design, best practice and mitigation that is described within this application, significant individual or cumulative effects on ecology are not anticipated at the international, national, county, or local scales or on any of the identified KERs.

7

Ornithology

This chapter assesses the likely significant effects that the Proposed Project may have on bird species. Firstly, a brief description of the Proposed Project is provided. This is followed by a comprehensive description of the methodologies that were followed in order to obtain the information necessary to complete a thorough assessment of the potential effects of the Proposed Project on bird species. The survey data is presented in full in the Environmental Impact Assessment Report (EIAR) appendices with a summary of the information presented within this chapter. An analysis of the results is then provided, which discusses the ecological significance of the birds recorded within the Site and hinterland. The potential effects of the Proposed Wind Farm are then described in terms of the construction, operation and decommissioning phases of the development. An accurate prediction of the effects is derived following a thorough understanding of the nature of the Proposed Project along with a comprehensive knowledge of bird activity within the Site. The identification of Key Ornithological Receptors and the assessment of effects follow a precautionary approach.

The potential for effects on designated sites is fully described in the Natura Impact Statement that accompanies this application. The Natura Impact Statement concluded that the Proposed Project, individually or in-combination with other plans or projects, will not adversely affect the integrity of any European Site. As such, it is concluded that the Proposed Project will not have an adverse impact on any European Sites designated for birds, either alone or in combination with other plans or projects.

Based on the detailed assessment, it is considered that the potential effects of the Proposed Project upon birds will not be significant. Effects associated with habitat loss, disturbance/displacement, collision risk and cumulative effects have been assessed to be no greater than low (Percival, 2003) and slight (EPA, 2022). The exception is white-tailed eagle, for which collision risk is assessed to be of very high (Percival, 2003) or very significant (EPA, 2022) significance before mitigation. To address this, an adaptive mitigation and monitoring plan is proposed and presented in Appendix 7-7 of this EIAR. The implementation of the adaptive mitigation plan will render any potential effects on white-tailed eagle to no greater than low (Percival, 2003) or slight (EPA, 2022) significance. In addition, although effects associated with breeding woodcock habitat loss and disturbance/displacement have been assessed to be no greater than low (Percival, 2003) and slight (EPA, 2022), native woodland establishment proposed as

part of the Biodiversity Management and Enhancement Plan (Appendix 6-4 of this EIAR) will benefit this species.

The Proposed Project was considered in combination with other plans and projects in the surrounding area that could result in cumulative impacts on KORs. Please see Section 7.7 of Chapter 7 for detail.

In conclusion, with the implementation of the adaptive mitigation plan, no significant effects as a result of the Proposed Project are foreseen on Key Ornithological Receptors.

8 Land, Soils and Geology

Chapter 8 of the EIAR assesses the potential effects of the Proposed Project on land, soils, subsoils, bedrock and geological heritage during the construction, operational and decommissioning phases.

The Site is generally underlain by mineral soils and glacial deposits comprising variable clay, silt, sand and gravel, with locally shallow bedrock. Site investigations, including 33 trial pits, were undertaken to confirm the ground conditions across the Site. The underlying bedrock comprises mainly Devonian sandstone, mudstone and siltstone.

One County Geological Site (CGS), the Drumslogh CGS, is located within the Site and is associated with the historic Drumslogh iron mine. The Proposed Project has been designed to avoid this geological heritage feature, and no construction works or ground disturbance will occur within the CGS.

The main potential effects on land, soils and geology will occur during construction and will be associated with permanent and temporary land-take, excavation, handling and reuse of topsoil, subsoil and bedrock, extraction of rock from the proposed borrow pits, temporary stockpiling of excavated materials and the potential for accidental spills or leaks. The permanent built infrastructure footprint will occupy approximately 2.2% of the overall Site, with surrounding forestry and agricultural land remaining in its existing use during operation.

Potential effects will be minimised through the design of the Proposed Project and the implementation of mitigation measures. These will include limiting excavation and ground disturbance to the minimum required, reusing suitable excavated soils, subsoils and bedrock within the Proposed Project where possible, backfilling and reinstating borrow pit voids, appropriate management and stabilisation of temporary stockpiles and implementation of measures to prevent and respond to accidental spills and leaks. Borrow pit excavation, spoil management and reinstatement will be subject to appropriate construction and geotechnical oversight.

During operation, potential effects on land, soils and geology will be limited mainly to the unlikely occurrence of accidental spills or leaks during maintenance activities. Decommissioning works will result in localised and temporary ground disturbance and will implement the relevant mitigation measures applied during construction.

The potential for cumulative effects with other existing, permitted and proposed projects has also been assessed in Section 8.5.6 of Chapter 8. Due to the localised nature of effects on land, soils and geology and the absence of overlapping development footprints or effects on the same geological heritage receptor, no significant cumulative effects are predicted.

9 Hydrology and Hydrogeology

This chapter assesses the likely significant effects of the Proposed Project on surface water and groundwater during construction, operation and decommissioning, and identifies measures to avoid or reduce adverse effects.

Most of the Site lies within the Water Framework Directive (WFD) Blackwater (Munster) Catchment. Only a small fraction of the Site is located within the WFD Colligan-Mahon Catchment. The Licky River is the main river associated with the Proposed Project, and it flows from west-southwest to the south of the Site. The Licky River originates at higher elevation to the east of the Site and is fed by several tributaries that originate partly as a series of springs/rises at higher elevations. The Licky River discharges into the Blackwater River before entering the sea at Youghal. In the WFD Colligan subcatchment, the Twomile Bridge River originates within the Site, flowing north into the Brickey River which, in turn, flows east before entering the sea at Dungarvan. Importantly, the entire Site is extensively, artificially drained by agricultural field drains, forestry drains, and road drains. Forestry drains carry runoff with a heavy sediment load which discharges in the Licky River as milky-coloured water during storm events. Silt traps are rare in these forestry drains and not all serve their purpose.

The underlying bedrock is classified as an 'L1' bedrock aquifer which is 'poorly productive' yet 'locally important', and suitable for abstractions of smaller water supplies. Bedrock is covered by glacial till, alluvial sediments along watercourses, and smaller areas of peat. The glacial till across the Site has 'Moderate' and 'Low' permeability characteristics, implying limited groundwater recharge and fluxes. Groundwater vulnerability is generally Moderate to High, with some upland areas of Extreme vulnerability where protective soil cover is thin or absent. Groundwater vulnerability is an indicator of areas that are more or less vulnerable to surface pollution and more or less prone to receiving recharge from rainfall.

The permanent built infrastructure footprint is not directly within any indicative (modelled) fluvial flood extent. The Licky River channel and immediate flood plain are, however, part of the 'medium probability' national indicative flood map extent. The lowest section of Licky River near the confluence with the Blackwater River, which is tidal at this location, has experienced recurring flooding as a combination of high tides and heavy rain increasing flow in the River Licky. The Site is not situated within any areas that are indicated to be at risk of groundwater flooding.

The Site is connected through surface water and/or groundwater pathways to the Blackwater River Special Areas of Conservation (SAC), Blackwater Estuary Special Protection Area (SPA), Dungarvan Harbour SPA and associated proposed Natural Heritage Areas (pNHAs). The Licky River forms part of the Blackwater River SAC and is a designated freshwater pearl mussel catchment. The pearl mussel population is in decline because of habitat degradation, including sedimentation, making protection of water quality particularly important.

Construction presents the greatest potential for adverse effects. Forestry felling, earthworks, drainage works and watercourse crossings could release sediment, organic matter and nutrients into downstream waters. Accidental releases of fuels, oils or cement-based products could also affect surface water and groundwater. Excavation and drainage may temporarily lower groundwater levels locally. These risks have been assessed alongside operational maintenance and decommissioning activities.

Surface water drainage measures, pollution control and other preventative measures have been incorporated into the Proposed Project design to minimise significant effects on water quality (surface and groundwater), downstream designated sites and water resources. A self-imposed 50m watercourse buffer was used, where possible, during the design of the Proposed Project, thereby avoiding sensitive hydrological features.

Mitigation measures are proposed that control of the potential risks associated with the proposed works. Front and centre is drainage management to limit sediment mobilisation and transportation. There will be no direct discharges of untreated runoff into local watercourses during any phase of the Proposed Project. This will be achieved by avoidance methods (e.g. water course buffers) and design methods (e.g. sediment traps). Preventative measures also include fuel, cement product, and wastewater management, which are incorporated into the Construction and Environmental Management Plan (CEMP).

A WFD Compliance Assessment has been completed for all waterbodies (surface water and groundwater bodies) with the potential to be impacted by the Proposed Project. With the implementation of the mitigation measures detailed in the EIAR there will be no change in the WFD status of the underlying groundwater body or downstream surface waterbodies because of the Proposed Project. The Proposed Project has been found to be fully compliant with the WFD and will not prevent any waterbody from achieving its WFD objectives.

Following implementation of the proposed mitigation measures, no significant effects on the hydrological and hydrogeological environments are predicted during the construction, operational or decommissioning phases of the Proposed Project. There are also no identified cumulative, significant effects arising in combination with other identified projects.

10

Air Quality

Ch. 10: Air Quality identifies, describes, and assesses the potential significant direct and indirect effects on air quality arising from the construction, operation and decommissioning of the Proposed Project.

The air quality zone for the Site was selected, followed by a review of EPA collated baseline air quality data namely Sulphur Dioxide (SO₂), Particulate Matter (PM₁₀), Nitrogen Dioxide (NO₂), Carbon Monoxide (CO) and Ozone (O₃) for the selected air quality zone to determine the representative levels of such emissions for the Proposed Project.

The EPA has designated four Air Quality Zones for Ireland:

- > Zone A: Dublin City and Environs
- > Zone B: Cork City and Environs
- > Zone C: 16 urban areas within population greater than 15,000
- > Zone D: Remainder of the country

These zones were defined to meet the criteria for air quality monitoring, assessment and management as described in the CAFE Directive. The Proposed Project lies within Zone D, which represents rural areas located away from large population centres.

The Institute of Air Quality Management in the UK (IAQM) guidance document '*Guidance on the Assessment of Dust from Demolition and Construction*' (2024) ('IAQM 2024 Guidance') was considered in the dust impact assessment. This methodology has been used to predict the likely risk of dust as a result of the construction phase works operational phase activities and decommissioning phase.

The production of energy from wind turbines has no direct air emissions as is expected from fossil fuel-based power stations. Harnessing more energy by means of renewable sources will reduce dependency on fossil fuels, thereby resulting in a reduction in harmful emissions that can be damaging to human health and the environment. Some temporary or short-term indirect emissions associated with the construction of the Proposed Project will include vehicular and dust emissions.

A CEMP will be in place throughout the construction phase. The CEMP includes dust suppression measures. In addition, turbines and construction vehicles will be transported to the Site on specified haul routes only, which will be regularly inspected for cleanliness and cleaned as necessary.

During the construction phase of the Proposed Project and the construction of other permitted or proposed developments and plans in the area, there will be exhaust emissions from construction plant and machinery and potential dust emissions associated with the construction activities. However, once the mitigation proposals are implemented there will be no cumulative negative effect on air quality.

Exhaust and dust emissions during the operational phase of the Proposed Project will be minimal, relating to the use of maintenance machinery and vehicles onsite, and therefore there will be no measurable negative cumulative effect with other developments on air quality. The nature of the Proposed Project is such that, once operational, it will have a long-term, moderate, positive impact on the air quality. There will be no measurable negative cumulative effect with other developments on air quality, and it is not significant.

By providing an alternative to electricity derived from coal, oil or gas-fired power stations, the Proposed Project will result in emission savings of carbon dioxide (CO₂), oxides of nitrogen (NO_x), and sulphur dioxide (SO₂). The production of renewable energy from the Proposed Project will have a Long-Term Moderate Positive effect on air quality due to the offsetting of approximately 79,376 tonnes of Carbon Dioxide (CO₂) per annum, or 2,778,160 tonnes of carbon dioxide over the proposed 35 year lifecycle of the Proposed Project.

Climate

Chapter 11: '*Climate*' identifies, describes, and assesses the potential likely significant direct and indirect effects on climate arising from the construction, operation and decommissioning of the Proposed Project.

Climate change is one of the most challenging global issues facing us today and is primarily the result of increased levels of greenhouse gases in the atmosphere. These greenhouse gases come primarily from the combustion of fossil fuels in energy use. Changing climate patterns are linked to increased frequency of extreme weather conditions such as storms, floods and droughts. In addition, warmer weather trends can place pressure on animals and plants that cannot adapt to a rapidly changing environment. Moving away from our reliance on coal, oil and other fossil fuel-driven power plants is essential to reduce emissions of greenhouse gases and combat climate change.

A methodology for calculating carbon losses was published in June 2008 by scientists at the University of Aberdeen and the Macauley Institute with support from the Rural and Environment Research and Analysis Directorate of the Scottish Government, Science Policy and Co-ordination Division. The document, '*Calculating Carbon Savings from Wind Farms on Scottish Peat Lands*', was developed to calculate the impact of wind farm developments on the soil carbon stocks held in peat. This methodology was refined and updated in 2011 based on feedback from users of the initial methodology and further research in the area. The web-based version of the carbon calculator, which supersedes the Excel-based versions of the tool, was released in 2016. Please note that the web-based version of the carbon calculator is currently not available. The Macauley Institute has supplied a worksheet of the calculator (Version 2.15.0) which has been used to complete the carbon loss assessment.

The full life cycle and embodied carbon of the Proposed Turbines have been taken account of in the Macauley Institute model. The emissions associated with the embodied carbon, along with the construction phase transport movements of the ancillary infrastructure and materials required for the construction of the Proposed Project are considered using the TII Carbon Tool (TII, 2022).

The Proposed Wind Farm site is largely mapped to be underlain by poorly drained mineral soils (AminPD), derived from mainly non-calcareous parent materials. There is little peat mapped at or occurring locally in the vicinity of the Proposed Wind Farm site. For this reason, the carbon balance between the use of a renewable energy and the loss of carbon stored in the peat is not assessed in this section of the EIAR.

The Proposed Project will result in the loss of 297,023 tonnes of carbon dioxide equivalent.

The Proposed Project will have an estimated installed generating capacity of 145.2MW and is estimates to offset 79,376 tonnes of carbon dioxide per annum, or 2,778,160 tonnes over the proposed 35-year operational life. Carbon losses to the atmosphere associated with the construction phase and from

operations will be offset by the Proposed Wind Farm in approximately **44.9** months (3.7years) of operation.

The potential for impact between the Proposed Project, and other relevant developments has been carried out with the purpose of identifying what influence the Proposed Project will have on the surrounding environment when considered cumulatively and in combination with relevant existing permitted or proposed projects and plans within 25km of the Site, such as other wind energy developments, extractive industries, battery energy storage systems, forestry etc. Please see Section 11.6 of Chapter 11 for detail. Following construction of the Proposed Project, there will be a Permanent, Imperceptible, Negative, Direct Effect on Climate as a result of greenhouse gas emissions from construction plant and vehicles, embodied carbon associated with the turbines and construction materials. Operation of the Proposed Project will have a Long-Term, Significant, Positive, Indirect Effect on climate as a result of reduced greenhouse gas emissions.

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Noise and Vibration

This chapter assesses the potential noise and vibration effects of the Proposed Slievegrine Renewable Energy Development in County Waterford during construction, operation and decommissioning. The assessment considers nearby homes and other noise-sensitive locations and has been undertaken using relevant Irish guidance and recognised best-practice standards, including the recently published UK Department for Energy Security and Net Zero Assessment and Rating of Wind Turbine Noise (ARWTN, 2026) and Institute of Acoustics (IOA) Good Practice Guide.

The existing area is rural, with typical sounds including occasional local traffic, farming and agricultural activity, birdsong and natural sounds. Background noise monitoring was undertaken at eight representative locations around the Proposed Wind Farm site. The measured data were analysed alongside onsite wind-speed data and used to establish appropriate operational wind turbine noise limits. No significant sources of vibration were identified during the baseline surveys.

Temporary construction noise may arise from turbine and hardstand construction, road and track works, borrow-pit excavation, tree felling, substation construction (both the Proposed 110kV Substation and Proposed 220kV Loop-in Substation), underground cabling and construction traffic. The assessment considered conservative scenarios at the nearest properties. Noise from the main construction areas is predicted to remain within the relevant construction thresholds. Some progressive works, particularly underground cabling close to individual properties, may produce higher noise levels for short periods; however, the works will move along the route and the highest levels are expected to occur for less than one day at any one property. Construction traffic may noticeably increase noise along the L2024, but the resulting overall levels are predicted to remain below the adopted construction threshold. Construction vibration, including vibration from rock breaking or controlled blasting where required, is expected to remain below levels associated with building damage. Construction noise and vibration effects are therefore assessed as negative, short-term or temporary, and not significant.

During operation, the principal noise sources will be the wind turbines and electrical equipment at the Proposed 110kV Substation and Proposed 220kV Loop-in Substation. Wind turbine noise was modelled at surrounding properties using conservative assumptions that favour sound propagation. The cumulative assessment also included the existing Woodhouse Wind Farm and permitted Knocknamona Wind Farm. The initial unmitigated omni-directional assessment identified small potential daytime exceedances at six properties under limited combinations of wind speed and direction. These will be addressed through targeted turbine reduced-noise operating modes or curtailment, where required. The assessment demonstrates that, with this mitigation in place, operational turbine noise will comply with the proposed daytime and night-time noise limits at all assessed properties. Residual wind turbine noise effects are therefore assessed as negative, long-term and not significant.

The predicted operational noise levels from the Proposed 110kV Substation and Proposed 220kV Loop-in Substation are below the adopted fixed-plant criterion at the nearest noise-sensitive locations.

Equipment will be selected and designed to avoid significant tonal, impulsive or intermittent characteristics. Operational vibration from the turbines and substations is expected to be below human perception at nearby properties and will not result in significant effects.

Low-frequency noise, infrasound, tonality and amplitude modulation were also considered. The assessment concludes that low-frequency noise, infrasound and operational ground-borne vibration do not require separate assessment because they are adequately controlled through the standard noise criteria or are below perceptibility at typical receptor distances. Clearly audible tonality or excessive amplitude modulation is not expected from normal turbine operation. If a complaint indicates that either characteristic may be present, the operator will investigate it using recognised measurement methods and will implement engineering controls, operational changes or turbine curtailment where necessary.

A review of the receptors with the greatest potential for exposure to both sources indicates that the wind turbine noise will be the main contributor from the Proposed Project, with the contribution from both the Proposed 110kV Substation and Proposed 220kV Loop-in Substation representing only a minor component of the overall sound environment. Given the low predicted fixed plant noise levels at the nearest receptors and the demonstrated compliance of both source types with their respective assessment criteria, the potential for significant cumulative operational noise effects is considered low. Accordingly, the cumulative operational noise effect associated with the Proposed Project is considered Negative, Not Significant and Long Term.

Best-practice noise and vibration controls will be incorporated into the construction contract, including appropriate working hours, selection and maintenance of suitable plant, positioning equipment away from sensitive properties where practicable, communication with residents and monitoring during critical activities if required. Before the Proposed Project is commissioned, a Noise Compliance Monitoring Protocol will be submitted to the planning authority for agreement. Post-construction surveys will verify compliance with the applicable operational noise limits, and corrective measures will be implemented if an exceedance is identified. A formal complaints procedure will also be maintained throughout operation.

Decommissioning activities will use plant similar to that used during construction but will involve fewer works. The resulting noise and vibration effects are therefore expected to be negative, short-term and not significant.

Overall, the assessment concludes that the Proposed Project will not result in significant residual noise or vibration effects. Construction and decommissioning effects will be temporary and controlled through best-practice measures. During operation, turbine noise will comply with the relevant limits following implementation of the required operating controls, while substation noise will remain below the adopted fixed-plant criterion. Compliance monitoring and a complaints-management procedure will provide ongoing verification and control during the operational phase.

Landscape and Visual

This chapter comprises a Landscape and Visual Impact Assessment (LVIA). The LVIA assesses the likely significant effects of the Proposed Project on the landscape and visual amenity. The Proposed Project is an appropriately designed development, sited in a modified working landscape of low population density within marginal upland terrain of coniferous forestry and pasture land, designated as 'Low Sensitivity' and 'Preferred' for wind energy development in the WCCDP 2022-2028. This LVIA determined the landscape of the Proposed Wind Farm site to be of low value and low susceptibility to change from a landscape and visual perspective and gives a 'Low' landscape sensitivity rating.

The Proposed Project follows best practice guidance for good wind farm design with respect to the location, spatial extent, spacing, layout, height and cumulative effect of the Proposed Turbines in Transitional Marginal landscape type prescribed by the Guidelines (DoEHLG, 2006) and Draft

Guidelines (DoHPLG, 2019) as follows: the Proposed Turbines are sited on a mix of ridges and hillslopes, arranged in multiple clusters with irregular spacing of turbines and an appropriately staggered, linear layout with a range of turbine heights that follows the highly undulating terrain, and are sufficiently distanced from cumulative developments and enclosed visually by the terrain such that the potential for in-combination visibility with cumulative developments is minimised.

The LVIA demonstrates that, according to the classifications set out in the WCCDP 2022-2028 Appendix 8, the Proposed Project is located in an area with high potential to absorb new development in that the topography is sufficiently enclosed and heavily vegetated (containing forestry and mature hedges/woody vegetation) and contains elements of existing electrical and energy infrastructure. In addition, the landscape type features a high degree of screening in the direction of the Proposed Turbines from 3-5km and other infrastructure of the Proposed Wind Farm.

This LVIA assessed the likely significant effects of the Proposed Project on key sensitive landscape and visual receptors, as well as visual effects on local residential receptors in close proximity to the Proposed Turbines, including cumulative effects with other wind energy developments within 25km of the proposed turbines. The LVIA was informed by desk study, field surveys, on-site visibility appraisals, GIS analysis including ZTV and RSA (i.e. on-the-ground visibility appraisal within 3-5km), as well as the production of 21 no. verified photomontages—twenty viewpoints representing views towards the Proposed Turbines, which are the essential aspect of the Proposed Project from a landscape and visual perspective, and one viewpoint representing a view of the Proposed 220kV Loop-in Substation.

The Proposed Turbines are sited strategically within a landscape capable of accommodating a wind energy development of this scale. Local residential receptors located centrally to the Proposed Wind Farm site and in close proximity to the Proposed Turbines (within 3km) were assessed using photomontage viewpoint impact assessment. Considering the local residential receptors, most of the residual visual effects were deemed ‘Not Significant,’ ‘Slight’ or ‘Moderate’ owing to the limited visibility of Proposed Turbines within the undulating terrain. Small areas within 1km of the Proposed Turbines were deemed to have ‘Significant’ residual visual effects owing to the prominence of a small number of Proposed Turbines within views; however, the number of receptors that will experience these effects is low and the effects are offset by the adherence of best-practice set back buffers from local residential receptors and the screening provided by surrounding forestry, woodland, and undulating terrain of the intervening landscape, which lessen the overall visual impacts.

The LVIA assessed the likely significant effects of the Proposed Project on designated LCAs within the LCA Study Area (15km from the Proposed Turbines). Two LCAs containing all elements of the Proposed Project (W-LCU-5E Drumhills and W-LCU-2D Clashmore & Newport Lowlands) were determined to be Low sensitivity and are classified as ‘Preferred’ for wind energy development in the WCCDP 2022-2028. LCU-5E containing all Proposed Turbines and the Proposed 220kV Loop-in Substation will experience a Moderate magnitude of change owing to the direct material alteration of the landscape and the visual impacts associated with limited views of the Proposed Turbines within close proximity and the permanent nature of the Proposed 220kV Loop-in Substation. LCU-2D containing a short length of the Proposed 110kV Underground Cabling Route will experience ‘Negligible’ magnitude of the change owing to the proposed cabling being underground. Overall, the residual landscape effects on the perceptual and aesthetic character of designated LCAs containing the Proposed are deemed to be ‘Direct,’ ‘Long-Term’ to ‘Permanent’ and ‘Negative’ with a significance rating ranging from ‘Imperceptible’ to ‘Slight’. No other LCAs will contain any infrastructure of the Proposed Project and are predicted to have landscape character effects with a significance rating ranging from ‘Imperceptible’ to ‘Not Significant’.

This LVIA assessed the likely significant effects of the Proposed Project on key sensitive landscape and visual receptors throughout the LVIA Study Area. Effects on the landscape of the Proposed Wind Farm site will be ‘Slight’ to ‘Moderate’ owing to the direct material alteration within the site itself that includes the installation of wind turbines and associated ancillary infrastructure (reversible and not permanent) and the installation of two proposed substations with ancillary infrastructure (permanent). Landscape and residual visual effects on the identified landscape receptors in the LVIA Study Area, including

Carronadavderg Hill and Slievegrine Hill within the Proposed Wind Farm site, one small area of Co. Cork High Value Landscape (7.5km to the southwest) and the Copper Coast UNESCO Global Geopark (16.2km to the northwest), will be 'Not Significant.' Overall, the landscape effects are not considered significant.

20 no. viewpoints covering a good geographical spread of the LVIA Study Area were selected for photomontage assessment of views towards the Proposed Turbines; of these, 18 no. show that residual visual effects arising as a result of the Proposed Turbines (and considering cumulative impacts with other wind farms) are 'Not Significant' with a few being 'Slight' or 'Moderate'. Two viewpoints (VP17 and VP19) forming part of the visual assessment of local residential receptors outlined above found 'Significant' visual effects that will be experienced by a very low number of receptors. In the case of VP17, residential receptors approximately 500m south of the viewpoint at lower elevation, further set back from the Proposed Turbines, will have less visual impact than what is shown in the photomontage due to enclosure and visual screening from localised landform and mature treelines, with substantially less horizontal extent of turbines seen. In the case of VP19, the visual effects are offset by the setback distance, the view of turbines within a low sensitivity landscape type and the nature of diminishing perceived size/scale of turbines owing to the linear layout as viewed from that vantage point. One additional viewpoint (SS01) was selected for assessment of views of the Proposed 220kV Loop-in Substation from the R671 Regional Road in Ballycullane and was found to have 'Slight' residual visual effects.

Visual effects on designated scenic route SR5 and SR6 which surround the Proposed Wind Farm site (and SR6 passes through the Site) will be 'Slight' and 'Moderate' respectively. Visual effects on St. Declan's Way waymarked walking trail which passes through the Proposed Wind Farm site will be 'Imperceptible' beyond 10km of the Proposed Turbines to 'Slight' within 5km.

The Proposed Project will have a cumulative effect on LCU-5E Drumhills in combination with the existing Woodhouse Wind Farm and the permitted Knocknamona Wind Farm. This is a large-scale, robust foothill landscape that can accommodate multiple wind energy developments. The Proposed Turbines will be visible at distance with other wind energy developments from higher-sensitivity receptors, including the coast, the Comeragh Mountains and Knockmealdown Mountains and the Blackwater River Valley. The Proposed Turbines are well set back, and so will not affect the key sensitivities or qualities of these landscapes or significantly impact the scenic amenity of visual receptors.

Overall, no 'Significant' landscape effects are predicted. Localised 'Significant' visual effects are predicted for a limited number of visual receptors in close proximity to the Proposed Turbines. The number of receptors likely to experience 'Significant' visual effects is very low. The presence of wind turbines in the rural landscape of Ireland is consistent with evolving national climate policy and the changing character of Ireland's working landscapes. The focus for the LVIA of the Proposed Project was on a combination of distance, arrangement, and location of turbines as well as potential disruption to key scenic sensitivities, rather than simply on whether turbines are visible or not from a particular vantage point. The outcome of the LVIA, with regards to the EPA, 2022 definition of significance, is calibrated in the overall context of LVIA of wind energy developments in Ireland as well as what is acceptable in the context of emerging baseline trends and the acceptability of wind turbines within views as a result of national policy. The Proposed Project is therefore considered acceptable in this context.

Archaeology, Architectural and Cultural Heritage

An assessment of the potential effects of the Proposed Project on the Cultural Heritage resource was carried out in this chapter. Cultural heritage includes archaeology, architectural heritage and any other tangible assets. The assessment was based on desktop research, field survey, GIS based mapping, ZTV, and was also assisted by representative photomontages.

Where potential effects have been identified, such as to potential sub-surface archaeology appropriate mitigation measures have been recommended in order to minimise any such effects. Proposed mitigation includes pre-development testing, archaeological monitoring of construction stage ground works and any further geotechnical site investigations. No potential direct effects to National Monuments, recorded monuments, Protected Structures or NIAH structures are identified.

Potential indirect effects on the setting of any UNESCO World Heritage Sites and those on a Tentative List within 25km, National Monuments within 10km, recorded monuments within 5km and RPS/NIAH structures within 5km were included in order to assess potential effects on setting in the wider landscape. The ZTV was utilised to assess the level of theoretical visibility of the Proposed Turbines from cultural heritage assets within the 5km and 10km study areas. No significant visual effects as a result of the Proposed Project have been identified.

An assessment of potential cumulative effects was also undertaken taking into consideration other extant planning applications and existing and proposed wind farms within 25km. While some potential cumulative visual effects to the wider setting of cultural heritage assets is possible when considered with the existing, permitted and proposed wind farms, no significant cumulative impacts have been identified and no cumulative effects to the immediate setting of cultural heritage assets will occur.

15 Material Assets

1.15.1 Traffic and Transport

This assessment considers the likely effects of the proposed Slievegrine Renewable Energy Development, Co. Waterford on the surrounding road network during the construction, operation and decommissioning phases.

During construction, the Proposed Project will generate traffic associated with workforce travel, delivery of general materials, concrete, cranes, electrical equipment, turbine components and limited imported stone. The assessment assumes a robust worst-case scenario in which up to 10% of the stone required for construction is imported by road, although five on-site borrow pits are expected to supply most of the stone needed. Construction is expected to take approximately 18 to 24 months, and for assessment purposes the shorter 18-month period has been assumed as this represents the highest average traffic intensity.

The greatest traffic effects will arise during the construction phase, particularly on the days when concrete is poured for turbine foundations. These are the busiest days in traffic terms because each turbine foundation must be poured in one continuous operation. On these days, the highest increase in traffic will occur on the L2024, which is a rural local road with low existing traffic volumes. Although the percentage increase on this road is high, this is mainly because baseline traffic levels are very low. In absolute terms, predicted traffic volumes remain within the assumed carrying capacity of the road. On the N25, the increase in traffic is much smaller and the road has sufficient capacity to accommodate the temporary increase.

Turbine components will be delivered from the Port of Waterford along the N29 and N25, before turning onto the L2024 to reach the Site. These loads are abnormal in size and will be transported under controlled conditions, typically at night and with Garda escort. The assessment concludes that these deliveries may cause temporary local delays, but that disruption will be limited and short-term.

The Proposed 110kV Underground Cabling Route will also give rise to temporary traffic effects. These effects will not result mainly from large traffic volumes, but from trenching and duct installation works along sections of the public road network. The most noticeable impacts are expected on the narrower local roads, especially the L2024 and L2021, where temporary traffic management will be needed and short local delays may occur. Effects on the R671 are expected to be less pronounced because it is a

wider regional road. These works will be progressive and temporary, meaning that no one location will be affected for the full duration of construction.

Once the Proposed Project is operational, traffic levels will be very low. The site will operate largely autonomously, and vehicle movements will generally be limited to occasional maintenance visits using cars or light goods vehicles. Operational traffic effects are therefore considered to be imperceptible.

At the end of the Proposed Project's life, the wind farm will be decommissioned. Traffic generated during decommissioning is expected to be lower than during construction, because some elements such as foundations, hardstanding areas, access tracks and parts of the electrical infrastructure will remain in place. As a result, decommissioning traffic effects are expected to be slight, temporary and negative, but lower than those occurring during construction.

A Traffic Management Plan will be prepared before construction begins. This will include measures such as agreed haul routes, controls on delivery times, management of abnormal load deliveries, temporary signage, stakeholder liaison, road condition surveys, wheel washing and other measures to keep roads safe and clean. Specific traffic management arrangements will also be put in place for the underground cabling works and to maintain access to homes, farms and emergency services where reasonably practicable.

Overall, the assessment concludes that the most noticeable traffic and transport effects will occur during construction, particularly on the L2024 and during the underground cabling works. However, these effects will be temporary, localised and manageable with the proposed mitigation measures. Residual effects after mitigation are assessed as not significant.

1.15.2 Telecommunications and Aviation

Wind turbines, like all large structures, have the potential to interfere with broadcast signals, by acting as a physical barrier or causing a degree of scattering to microwave links. The most significant effect at a domestic level relates to a possible flicker effect caused by the moving rotor, affecting, for example, radio signals. The most significant potential effect occurs where there are proposed turbines directly in line with the transmitter radio path.

During the development of any large project that holds the potential to affect telecoms or aviation, the developer is responsible for engaging with all relevant telecom operators and the relevant aviation authorities through a scoping exercise to ensure that the proposal will not interfere with television or radio signals by acting as a physical barrier. In the event of any potential impact, the developer for each individual project is responsible for ensuring that the necessary mitigatory measures are in place.

As recommended by RTÉ Transmission Network (2RN), should the Proposed Project received a grant of planning permission, a detailed TV reception survey will be undertaken prior to the commencement of construction works on the Proposed Turbines (and subsequently post commissioning of the Proposed Turbines) in order to accurately predict the number of households which may be affected by the operation of the Proposed Turbines. Should the Proposed Turbines interfere with the TV reception of any household, the developer will employ the appropriate remediation measures provided.

The Proposed Project will have no residual impact on aviation as all lighting requirements will be met by the Applicant.

A Telecommunications Impact Assessment was carried out by Ai Bridges. These appendices detail the field and desktop surveys undertaken to determine if telecommunications network infrastructure, including those highlighted by ESB Network, would be impacted by the proposed turbines. The Telecommunications Impact Assessment provided mitigation measures to avoid interfering with ESB Networks' point-to-point (PTP) microwave and point-to-multipoint (PMP) UHF radio-link networks. The Proposed Wind Farm includes for a telecommunications relay mast at the ITM coordinates 620854

589081, which has been demonstrated as a suitable mitigation measure to ensure no significant impact on the PTP/PMP links will occur.

An Aviation Impact Assessment has been prepared by Cyrrus Limited. The Aviation Statement concludes that the Proposed Wind Farm occupies a location with a low potential for effects on aviation, being situated within Class G uncontrolled airspace with sufficient unrestricted airspace available above and around the Proposed Wind Farm site for aircraft operating in accordance with applicable flight rules. The Proposed Wind Farm is not located within an airspace 'choke-point' and allows pilots more than enough space to deviate around the Proposed Wind Farm rather than overfly it, should they wish to.

The Proposed Wind Farm is located a significant distance from Military Operating Areas and low-flying training areas. Although the Proposed Wind Farm is located within 3 nautical miles of the N25, no concern regarding the proximity of the Proposed Wind Farm to the national road network was raised by the Department of Defence during consultation. The Aviation Statement considered the potential for effects on meteorological radar and identified that the Met Éireann weather radar installations at Dublin and Shannon Airports are approximately 180 km and 108 km respectively from the Proposed Wind Farm and are at no risk of being impacted.

The potential for electromagnetic interference from the Proposed Project may only occur during the operational phase. There are no electromagnetic interference impacts for telecommunications and aviation assets or operations associated with the construction phase of the Proposed Project, and therefore no mitigation is required.

1.15.3 Other Material Assets

This section of the Material Assets chapter considers other utilities or built services in the area such as electricity supply and transmission, water, gas and underground telecommunications. This section also considers waste management during the construction, operational and decommissioning phases of the Proposed Project.

In order to assess the potential for significant effects on built services and waste management in the vicinity of the Site, two rounds of scoping requests were made to EirGrid, Uisce Éireann, and numerous sections of Waterford City & County Council, including the Roads Department and Environment Department, once in July 2025 and again in August 2026.

No scoping response was received from EirGrid on either round of scoping. A scoping response was received from Waterford City & County Council Environmental Department stating that the scoping document was forward to the relevant official; no further response was received. An out of office email response was received from Uisce Eireann and no further response was received. A scoping and consultation exercise was conducted with utilities operators.

The Proposed Project has been designed to avoid identified services and utilities where insofar as possible. Prior to commencement of construction detailed site investigations will be carried out to confirm design assumptions and undertake additional surveys to identify any new services and utilities and ensure they will not be impacted by the Proposed Project.

The Proposed Project has been designed to avoid identified services and utilities insofar as possible, however, in order to facilitate the Proposed Turbines, it is necessary to reroute a section of the existing 38kV Foxhole-Dungarvan overhead line underground. It is also proposed to break into the existing 220kV Knockraha-Cullenagh 220kV overhead line to facilitate the connection of the Proposed Project to the national grid. Neither works will permanently impact the functioning of these assets. To facilitate these works, the lines will be temporarily switched off during the rerouting works.

Gas Networks Ireland (GNI) supply MKO their latest infrastructure data quarterly. The latest data share illustrating all GNI infrastructure was provided to MKO in Q2 2026. The data indicates that there is no GNI infrastructure located within or adjacent to the Site.

There are no surface water or groundwater abstractions used for public water supply purposes within or downslope/downgradient of the Site. The nearest source of public water supply is the Dungarvan public water supply, which is several kilometres away and outside any subcatchments that are linked with the Site.

There are several groundwater wells at farms and dwellings within the Site which are used for private and farm water supplies. Data on depths and well construction details are lacking, but private wells can be expected to be tens of metres deep. As discussed in Chapter 9 of this EIAR, no significant effects on public or private water supplies are anticipated.

There are no EPA-licensed or local authority-authorised waste facilities or activities located within the Site. The closest, authorised municipal waste facility is located approximately 6km northeast of the nearest Proposed Turbine (T04) at Dungarvan, Co. Waterford.

A Waste Management Plan (WMP) has been prepared and forms part of the CEMP. The WMP outlines the methods of waste prevention and minimisation by recycling, recovery and reuse at each stage of construction of the Proposed Project. Disposal of waste will be a last resort. The WMP outlines the methods of waste prevention and minimisation by recycling, recovery and reuse at each stage of construction of the Proposed Project. Disposal of waste will be a last resort.

All waste generated on site during the construction phase will be contained in a waste skip at a waste storage area on site. This waste storage area will be kept tidy with skips clearly labelled to indicate the allowable material to be disposed of therein. All staff welfare facilities, such as onsite canteen facilities shall be kept tidy and food waste shall be immediately into suitable enclosed receptacles with secure/tight-fitting lids to prevent attracting rodents and other pest species. Accumulations of waste, timber, packaging and other materials capable of providing harbourage for rodents will not be permitted. Should the need arise, a pest/vermin control plan shall be prepared prior or during the construction works.

It is not anticipated that any significant volume of waste will be generated within the Site during the operational phase of the Proposed Project as only a small number of operational and maintenance personnel will be present within the Proposed Project at certain times. The waste material will be transferred to a MRF by a fully licenced waste contractor where the waste will be sorted into individual waste stream for recycling, recovery or disposal.

Major Accidents and Natural Disasters

Chapter 16: Major Accidents and Natural Disasters of the EIAR describes the likely significant effects on the environment arising from the vulnerability of the Proposed Project to risks of major accidents and/or natural disasters.

Major accidents or natural disasters are hazards which have the potential to impact the Proposed Project and consequently have potential impacts on the environment. This assessment also identifies the potential of the Proposed Project to impact major accidents or natural disasters. These include accidents during construction, operation and decommissioning caused by operational failure and/or natural hazards. The assessment of the risk of major accidents and/or disaster considers all factors defined in the EIA Directive that have been considered in this EIAR, i.e., population and human health, biodiversity, birds, land and soil, water, air quality, climate, material assets (including traffic and transport), cultural heritage and the landscape.

A desk-study has been completed to establish the baseline environment for which the proposed risk assessment is being carried out. This will influence both the likelihood and the impact of a major accident or natural disaster. Local and regional context has been established prior to undertaking the risk assessment to develop an understanding of the vulnerability and resilience of the area to emergency situations.

Further detail on the baseline environment is provided in Section 16.3 of this Chapter.

The scenarios with the highest risk score in terms of the occurrence of major accident and/or disaster during construction, were identified as 'Severe Weather', and 'Pollution/Contamination'.

The Proposed Project has been designed and will be built in accordance with the best practice measures outlined throughout this EIAR and, as such, mitigation against the risk of major accidents and/or disasters is embedded through the design.

The risk of a major accident and/or disaster during the construction of the Proposed Project is considered 'low' in accordance with the '*A Framework for Major Emergency Management – A Guide to Regional Risk Assessment*' (DHLGH, 2024). Similarly, the likelihood of any cumulative effects arising from or contributing to major accidents or natural disasters will be low.

When the implementation of best practice measures and all proposed mitigation and monitoring measures detailed throughout this EIAR are implemented, the residual effect(s) associated with the construction, operation and decommissioning of the Proposed Project are not significant with regards to major accidents and natural disasters.

Interactions of the Foregoing

Ch. 17: Interaction of the Foregoing identifies the potential significant environmental effects that may occur in terms of Population & Human Health, Biodiversity, Birds, Land, Soils & Geology, Hydrology and Hydrogeology, Air Quality, Climate, Noise & Vibration, Landscape & Visual, Cultural Heritage, Material Assets and Major Accidents & Natural Disasters, as a result of the Proposed Project. All potential significant effects of the Proposed Project and the measures proposed to mitigate them have been outlined in the main EIAR. However, for any development with the potential for significant environmental effects there is also the potential for interaction between these potential significant effects. The result of interactive effects may exacerbate the magnitude of the effects or ameliorate them or have a neutral effect. A matrix is presented in Chapter 17 to identify interactions between the various aspects of the environment already discussed in the EIAR. The matrix highlights the occurrence of potential positive or negative impacts during the construction, operational and decommissioning phases of the Proposed Project. Where any potential interactive impacts have been identified, appropriate mitigation is included in the relevant sections (Chapters 5–16) of the EIAR.