



Comhairle Cathrach  
& Contae **Luimnigh**

**Limerick** City  
& County Council

Pleanáil, agus Cruthú Áite  
Comhairle Cathrach agus Contae Luimnigh  
Bothar Thuar an Daill  
Tuar an Daill, Luimneach  
V94 WV78

Planning and Place-Making  
Limerick City and County Council  
Dooradoyle Road  
Dooradoyle, Limerick  
V94 WV78

**An Coimisiún Pleanála,  
64 Marlborough Street,  
Dublin 1,  
D01 V902**

5<sup>th</sup> December 2025

Re: ACP-323780-25 Strategic Infrastructure Development - 10 year planning permission for Ballinlee Wind Farm consisting of 17 no. wind turbines, a permanent 110kV substation and ancillary development located in Ballincurra, Ballingayrou, Ballinlee North & South, Ballinrea, Ballyreesode, Camas North & South, Carrigeen, Knockuregare, Ballybane and other townlands in County Limerick.

Dear Sir/Madam,

I refer to the above proposed SID and to the Coimisiún's letter to Limerick City and County Council of 02 October 2025.

In response, please find enclosed the following documentation:

1. Director General's Report
2. Meeting Administrator's Report
3. Views of the Elected Members

Please contact the undersigned if you have any queries.

Yours sincerely,

**Majella O'Brien,**  
**Administrative Officer,**  
**Planning Department.**  
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& County Council

**DIRECTOR GENERAL'S REPORT IN ACCORDANCE WITH THE  
REQUIREMENTS OF SECTION 37E (4) OF THE PLANNING AND  
DEVELOPMENT ACT 2000 (AS AMENDED) IN RELATION TO BALLINLEE  
WINDFARM**

**ACP REFERENCE: ACP-323780-25**

## **1. Introduction**

This report has been prepared in accordance with the requirements of Section 37E (4) and 37E (5) of the Planning and Development Act, 2000, as amended, following on from the submission of a Strategic Infrastructure Development (SID) to An Coimisiún Pleanála, known as the Ballinlee Windfarm.

The Wind Farm is located within the functional area of Limerick City and County Council in the townlands of Ballincurra, Ballingayroure, Ballinlee South, Ballinlee North, Ballinrea, Ballyreesode, Camas North, Camas South, Carrigeen, Knockuregare, Ballybane, Ballynanty, Cahirguillamore, Rockbarton, Grange, Ballynagallagh, Skool, Friarstown South, Friarstown, Rockstown, Rochestown, Carriganattin, Stonepark, Ballynagarde, Ballymacgreese, Glen, Knockbrien, Ballyneety, Scart, Ballyogartha, Carrigmartin, Cahernarry (Cripps), Drombanny, Ballybrennan, Coolyhenan, Knockananty, Ballysimon Commons, Tullovin and Milltown, Co. Limerick. The development consists of 17 no. wind turbines with an energy generating capacity in excess of 76MW, associated tracks and infrastructure, an onsite 110kV electrical substation and a Grid Connection Route (GCR) which consists of an underground electrical grid connection from the Wind Farm Site to the existing Killonan 220/110kV Substation. The proposed Wind Farm will have a 35-year operational lifespan.

The report is to set out the views of the authority on the effects of the proposed development on the environment and/or the proper planning and sustainable development of the area of the authority having regard to the considerations as set out in section 34(2) of the 2000 Act, as amended.

The Elected Members may provide their views on the proposed development. These views will then form part of the response to An Coimisiún Pleanála.

## **2. Description of Site**

The Site is located approximately c.3km southwest of Bruff, c.5km southeast of Bruree, c. 5km north of Kilmallock, 18km southeast of Limerick City and c.60km north of Cork City. The Site is located within the townlands of Ballincurra, Ballinlee South, Ballingayroure, Ballinrea, Knockuregare, Ballinlee North, Carrigeen and Camas South.

The proposed grid connection route is approximately 27.6km extending from the existing Killonan 220/110kV Substation to the proposed onsite 110kV substation at the Wind Farm site. The proposed route is located along road networks within the townlands of Milltown, Ballysimon Commons, Coolyhenan, Knockananty, Ballybrennan, Drombanny, Carrigmartin, Cahernarry (Cripps), Scart, Ballyogartha, Ballyneety, Knockbrien, Glen, Ballymacreese, Ballynagarde, Stonepark, Carriganattin, Rochestown, Friarstown, Rockstown, Skool, Friarstown South, Grange, Ballynagallagh, Rockbarton, Cahirguillamore, Ballynanty, Ballybane, Ballyreesode, and Camas North. The overall site extends to 255 hectares (c.630acres) and it is owned by private third-party landowners. The site is located south of the R516 Regional Road with access off same and west of the R512 Regional Road with access to same via the L1414 local road which traverse the site and the L51217 local road which is a cul-de-sac road also providing access to the site. The site is situated in a rural area characterised by agricultural holdings and one-off residential dwellings. Some patches of forestry plantation occur within the proposed development and some on neighbouring properties.

To facilitate the turbine delivery a new temporary access track is proposed on privately-owned predominantly agricultural lands within the townland of Tullovin approximately 3.3km southeast of Croom, Co. Limerick.

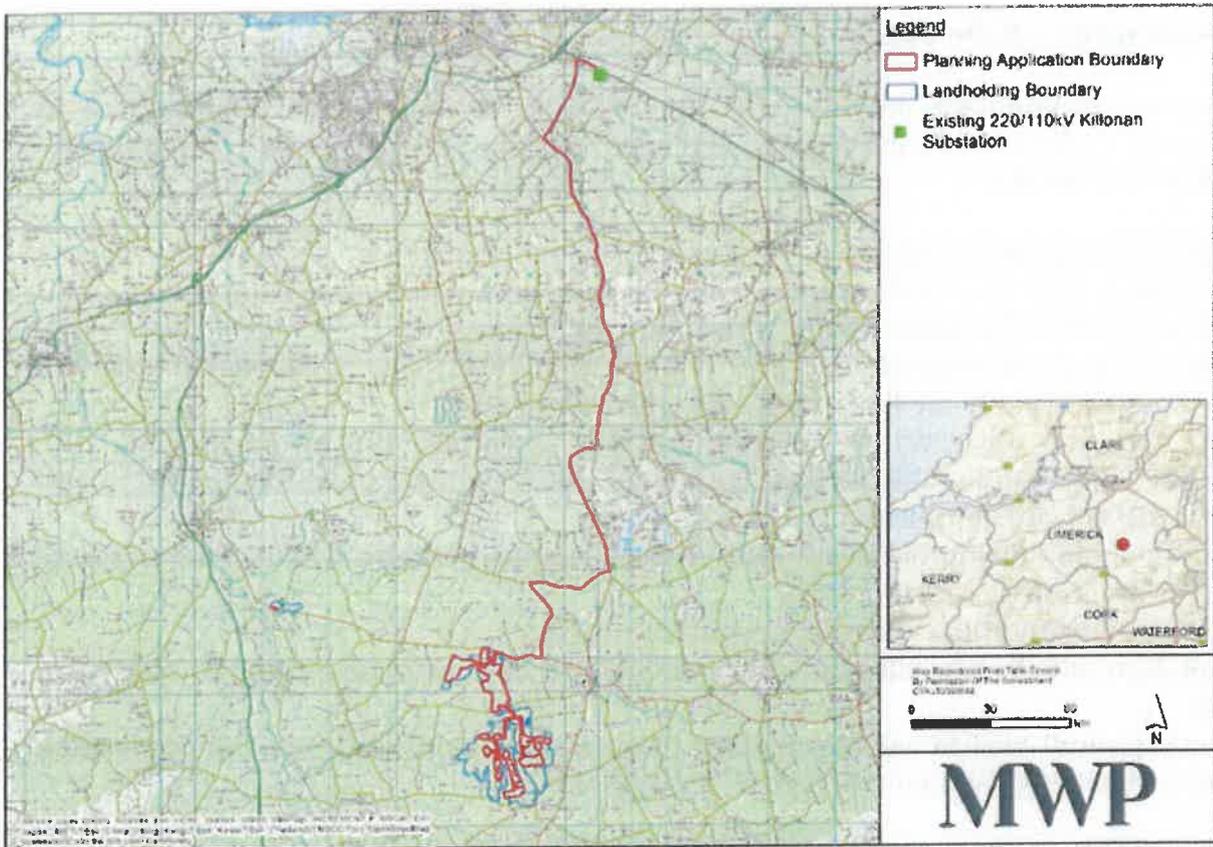


Figure 1 - Site location (taken from submitted Planning Statement and outlined in 'red')

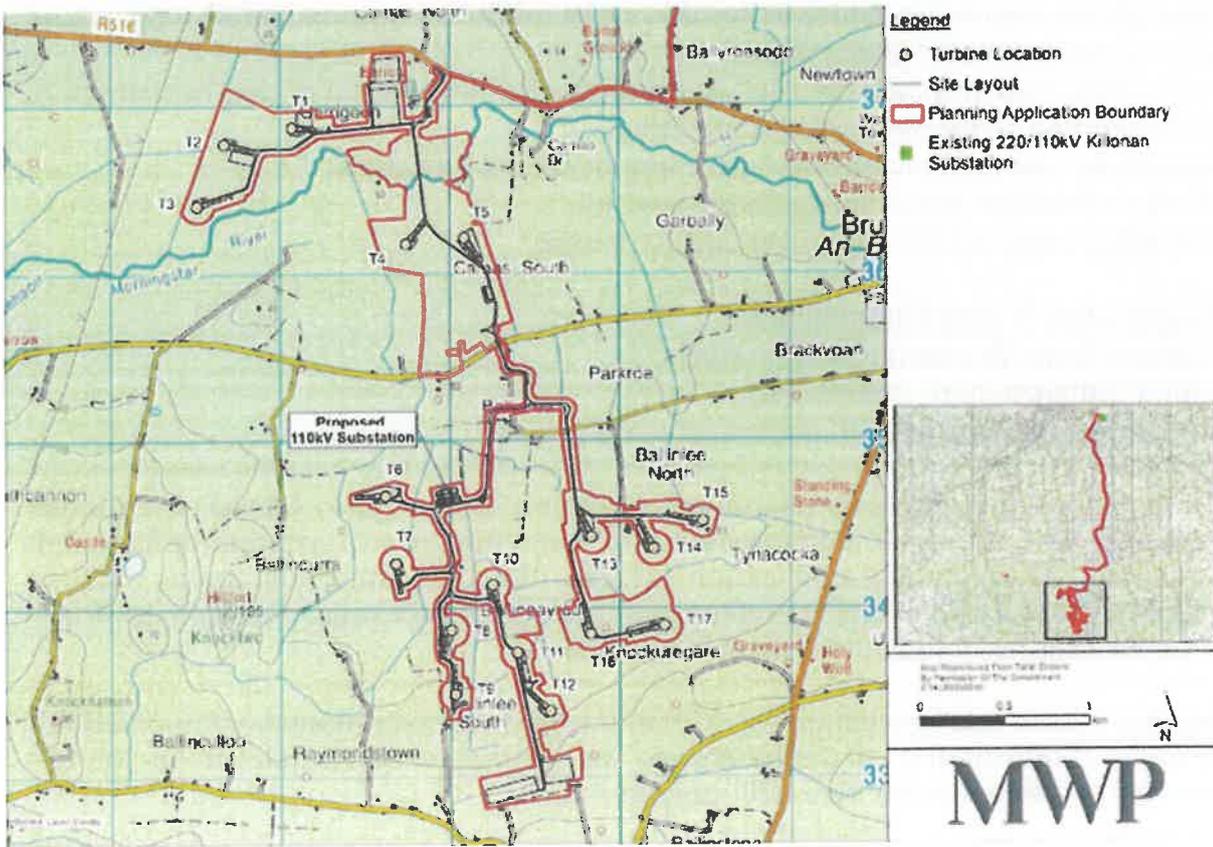


Figure 2 – Wind Farm Site location (taken from submitted Planning Statement and outlined in 'red')

### **3. Description of the Proposed Development**

The proposed development provides for the following at Ballincurra, Ballinlee South, Ballingayrou, Ballinrea, Knockuregare, Ballinlee North, Carrigeen and Camas South townlands, Co. Limerick:

#### Core Wind Farm Components

- Seventeen (17) No. wind turbines (turbine tip height of 160m, and 150m (T6 only)) with associated foundations and crane hardstand areas.
- One (1) No. Permanent Meteorological Mast (92m height) and associated foundation, hardstand area and ancillary main crane hardstand area.
- One (1) No. Electrical Substation (110kV) including Eirgrid compound, IPP, maintenance compounds, ancillary building, security fencing and all associated works.
- Nine (9) No. site entrances.
- New and upgraded internal site service tracks (approximately 10.8km of new internal access tracks to be constructed).
- New clear span bridge over the Morningstar River.
- Underground electric collector cable systems between turbines within the wind farm site.
- Underground electric cabling systems between the wind farm site and connection point at existing Killonan 220/110kV substation.

#### Associated Components of the Proposed Development

- New temporary access track via R516 to facilitate turbine delivery route located in the townland of Tullovin.
- Three (3) No. temporary construction site compounds (one approximately 95m x 50m and two approximately 55m x 25m).
- Two (2) No. borrow pits to be used as a source of stone material during construction and for storage of excess excavated materials.
- Nine (9) No. permanent and two (2) temporary deposition areas.
- Associated surface water management systems.
- Tree felling required for wind farm infrastructure.

#### Other Associated Project Components

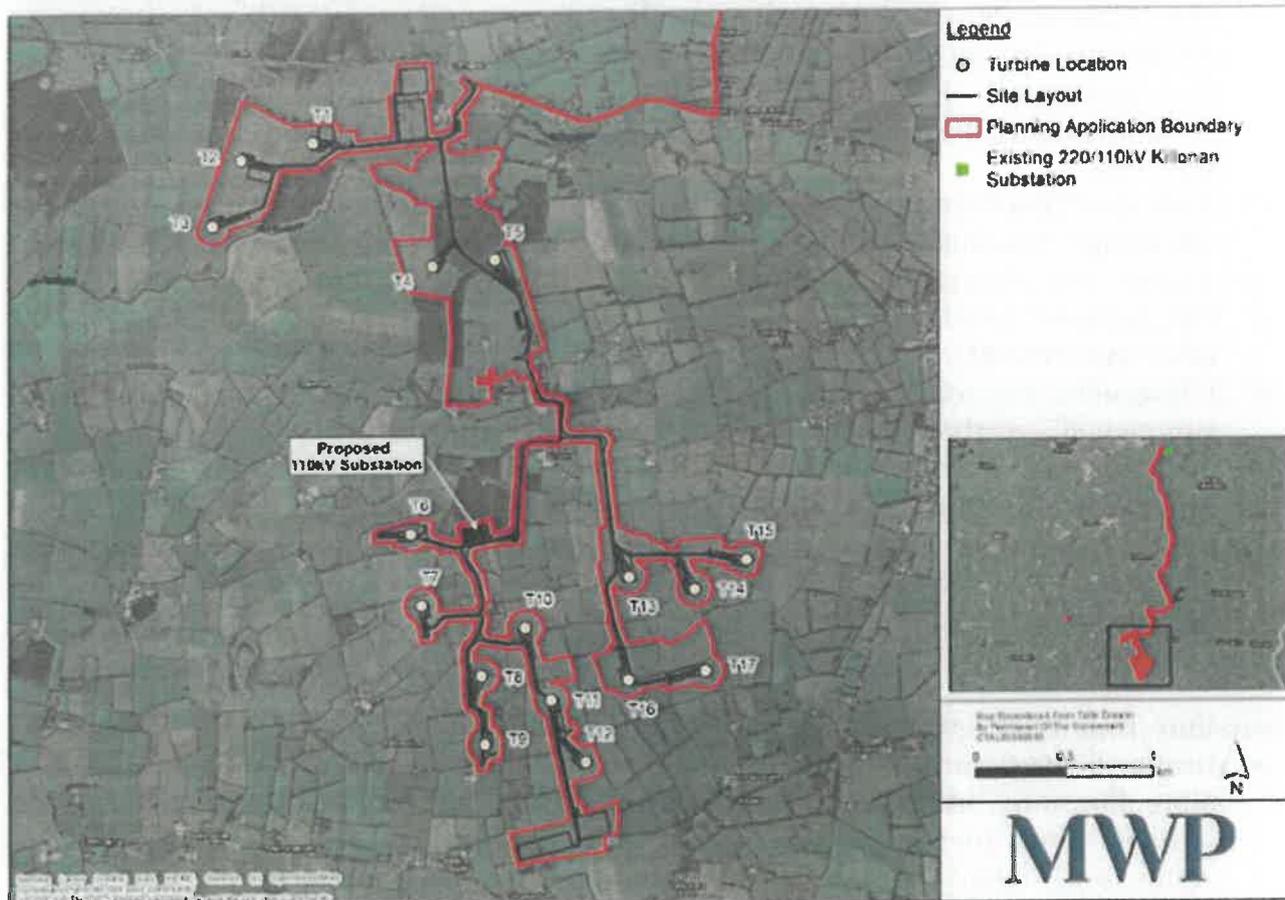
- Whooper Swan Management Area works
- Habitat Enhancement Areas works
- Landscaping, fencing and all associated works.

The application is seeking a ten-year planning permission, no less than a 35 year operational period from the date of overall commissioning of the entire wind farm and subsequent decommissioning. The planning application includes the grid connection route which is approximately 27. which consists of an underground electrical grid connection from the Wind Farm Site to the existing Killonan 110/220kV substation.

A Completeness Check was carried out by ACP in line with the requirements of the RED III Directive and a Confirmation of Completeness was issued to the Applicant on the 4<sup>th</sup> November 2025 (Case Reference Ref. ABP-323780-25).

An Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS) have been prepared in relation to the construction, operation and decommissioning of the proposed development, Grid Connection route and works to facilitate turbine delivery from

the port of entry at the port of Foynes to the site entrances (Entrance 8 and Entrance 9) at Ballinlee South via N69, N18, M20, N20 and R516.



**Figure 3 – Site Layout Map (taken from submitted Planning Statement)**

#### **4. Planning History**

The planning history of the proposed site was reviewed via online planning records of Limerick City and County Council and it was found that there have not been any planning applications to date made within the planning application boundary.

#### **5. Pre-Application Discussions**

Pre-application consultations under section 37b of the Planning and Development Act 2000 (as amended) were held on the 25<sup>th</sup> October 2024 and 20<sup>th</sup> March 2025. Details of same including the written record for each meeting is available on the An Coimisiún Pleanála website under pre-planning reference no. ABP-320745-24.

Discussions from the meeting held in October 2024 included discussions as per below:

- design flexibility - applicant confirmed that at this stage they wished to proceed without design flexibility;
- Wind farm, grid connection and substation – applicant confirmed single application for all proposed;
- careful consideration for the height and siting of the turbines was advised given the landscape character of the area with photomontages from a range of sensitive locations, including cultural features, such as elevated areas to Lough Gur ACA;

- turbine delivery route - applicant confirmed ongoing engagement with landowners; reference to potential loss of hedgerows and trees associated with the proposed access and need for replacement trees and hedgerows and other biodiversity enhancement areas; reference to the extent of archaeological areas of interest within the study area and the need to address the potential effects on same;
- the requirements for a number of bridge crossings was noted, including a river crossing, and applicant advised of the need for a clear methodology for same to be provided;
- in terms of habitats within the study area, the prospective applicant advised that the site mainly consists of agricultural grassland, with some rocky outcrops, while peat had not been encountered; proposed location of the on-site borrow pits clarified;
- The applicant noted consultation with Gas Networks and confirmed adherence to set back requirements;
- felling of forestry requirements queried- applicant noted only potential one turbine in commercial forestry area and location of same to be finalised;
- The applicant confirmed intention to engage in pre-planning with Local Authority;
- The extent of ecological surveys, including bird surveys, and findings of same were queried- applicant outlined existing of surveys undertaken and to be undertaken; distances from turbines to residential receptors discussed;
- discussion of alternative turbine delivery routes discussed; applicant advised that the development would fall within the scope of SID.

Discussions from the meeting held in March 2025 included discussions as per below:

- turbine delivery route (TDR), consultation with TII, it was highlighted that structures along the route, bridges and stone walls etc, which are not protected but may have heritage value, queried whether pre-delivery surveys were carried out and if route would go through Croom, applicant noted TDR would be dictated by turbine blade length, applicant confirmed works including impact on hedgerows/biodiversity will be addressed in Traffic Management Plan and EIAR;
- Extent of forest felling queried;
- impact on Whooper Swans - consultation with NPWS queried, applicant noted further engagement would be sought, nocturnal whooper swan surveys carried out over 4 years, nocturnal surveys and potential impacts on the whooper swan population at Lough Gur would be considered, applicant advised that enhancement areas proposed as mitigation should be included within the site redline boundary and accompanied by landowner consent;
- Connectivity between the site and Special Protected Areas to be considered; applicant noted other surveys including raptor and other bird surveys ongoing since 2021 and otter holts and badger setts were not observed during the project ecological surveys; applicant advised comprehensive consideration of archaeological features;
- In terms of Grid Connection, applicant was advised to address alternatives, methodology, the extent of excavation, material removal and precise details regarding how it is intend to address the route alignment along hard shoulders, dual-flow carriages, single-lane carriages and bridge crossings;
- Applicant noted Killonan substation is the preferred connection point identified by EirGrid; discussion on bridge crossings, water courses, and if any Horizontal Directional Drilling (HDD), applicant confirmed they were gathering information on water point crossings including bridge crossings and the use of HDD;
- The applicant advised that consideration required in respect of traffic and construction management where the grid route works pass by schools and sensitive receptors, applicant stated the route is 20km long with multiple entrance points, and a robust plan is in place to account for local resident access;

- The applicant confirmed that the lower height of Turbine 6 was due to the 300m separation distance required by EirGrid to the proposed substation (i.e. 2.5 times the tip height);
- applicant advised to clearly state tip height in public notices; applicant advised that mitigation measures to be employed to address impacts on surface and ground water quality should be consistent across all factors examined, CEMP and NIS;
- Proposed viewpoints (22) and separation distance of 1.4km between Turbine 4 & 6;
- The applicant was advised to address the community engagement required for the various stages of the proposed development;
- Borrow pits proposed, applicant advised to consider the reasons for the locations chosen, including context relative to the nearest residential receptors and any intended processes to be undertaken/mitigation proposed, applicant noted that the volume would be dependent on the type of material (e.g. gravel or rock) and intension not to interact with the water table;
- Queried whether the 2019 draft guidelines separation distances were being met in relation to all residential receptors, applicant confirmed this to be the case;
- The applicant was advised to provide clarity in the documentation regarding the intended operational span for the project and the rationale for same, applicant advised a 10- year permission, with a 35-year lifespan was being sought.

## 6. Planning Policy Context

### 6.1 European Policy

#### Renewable Energy Directive III (RED III), October 2023

The **Renewable Energy Directive (RED III)** – Directive (EU) 2023/2413 formally adopted by the EU in October 2023, is a major update to the EU’s renewable energy policy framework. It raises the binding target for renewable energy to **42.5% of the EU’s total energy consumption by 2030**, with an additional **indicative target of 45%**. RED III introduces **sector-specific targets** for transport, industry, buildings, and heating/cooling, and strengthens rules around permitting, sustainability of biomass, and cross-border cooperation. It also mandates **faster permitting procedures**, promotes **renewable hydrogen and advanced biofuels**, and enhances **energy origin tracking** through Guarantees of Origin (GOs). The directive is part of the EU’s broader **Fit for 55 package**, aimed at achieving climate neutrality by 2050 and reducing greenhouse gas emissions by at least 55% by 2030.

### 6.2 National Policy

#### **Programme for Government 2025 - Securing Ireland’s Future**

The current programme commits to harnessing renewable energy in the Solar Sector as follows:

- **Expansion of Solar PV (Photovoltaic) Deployment:** The government commits to accelerating the rollout of solar PV systems across residential, commercial, and public buildings. This includes support for rooftop solar installations and large-scale solar farms.
- **Support Schemes and Incentives:** Continued funding through the Renewable Electricity Support Scheme (RESS) to promote solar energy projects.
- **Enhanced grants and low-interest loans** for homeowners and businesses to install solar panels.

- VAT reductions on solar-related technologies (e.g., heat pumps and solar panels) to make adoption more affordable.

### **National Planning Framework (Project Ireland 2040)**

The National Planning Framework (NPF) outlines a vision for the country's future development, with a focus on key strategic goals such as moving toward a low-carbon, climate-resilient society and ensuring the sustainable management of waste and resources. It incorporates several relevant National Strategic Outcomes (NSOs) and National Policy Objectives (NPOs), which can be summarised as follows:

#### National Policy Objective 54

Reduce our carbon footprint by integrating climate action into the planning system in support of national targets for climate policy mitigation and adaptation objectives, as well as targets for greenhouse gas emissions reductions.

#### National Policy Objective 55

Promote renewable energy use and generation at appropriate locations within the built and natural heritage environment to meet national objectives towards achieving a low carbon economy by 2050.

#### NSO 3 Strengthened Rural Economies and Communities

#### NSO 8 Transition to a Low Carbon and Climate Resilient Society

The goal is deliver 40% of our electricity needs from renewable sources by 2020 with a strategic aim to increase renewable deployment in line with EU targets and national policy objectives out to 2030 and beyond. It is expected that this increase in renewable deployment will lead to a greater diversity of renewable technologies in the mix.

### **Climate Action Plan 2025**

Climate Action Plan 2025 (CAP25) is the third statutory annual update to Ireland's Climate Action Plan under the Climate Action and Low Carbon Development (Amendment) Act 2021.

The Plan lays out a roadmap of actions which will ultimately lead us to meeting our national climate objective of pursuing and achieving, by no later than the end of the year 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy. It aligns with the legally binding economy-wide carbon budgets and sectoral emissions ceilings that were agreed by Government in July 2022.

Climate Action Plan 2025 builds on Climate Action Plan 2024 by refining and updating the measures and actions required to deliver the carbon budgets and sectoral emissions ceilings and it should be read in conjunction with Climate Action Plan 2024. The Plan provides a roadmap for taking decisive action to halve Ireland's emissions by 2030 and achieve climate neutrality by no later than 2050, as committed to in the Climate Action and Low Carbon Development (Amendment) Act 2021.

The following actions outlined in CAP 2025 are of particular relevance to the proposed development:

- Accelerate Renewable Energy Generation
  - 50% renewable electricity share of demand
  - 6 GW onshore wind capacity
- Develop a framework of supporting policies for the repowering and extension of the life of existing renewable electricity generation capacity. For onshore wind capacity, lifetime extensions and repowering at existing sites will be critical to ensuring that the 80% renewable electricity target is reached.

- Publish the Long Duration Energy Storage Procurement recommendations paper. It is expected that this technology will play a significant role in future decarbonisation of the energy sector.
- Deliver a holistic onshore and offshore network plan blueprint, Net Zero Network Plan.

National Target	2025	2030
Renewable Electricity Share	50%	80%
Onshore Wind	6 GW	9 GW
Solar	Up to 5 GW	8 GW
Offshore Wind	-	At least 5 GW
New Flexible Gas Plant	-	At least 2 GW
Demand Side Flexibility	15-20%	20-30%

Above: Key targets set out in the Climate Action Plan 2025

### **National Energy and Climate Plan (NECP), 2021–2030**

This plan serves as the central framework for Ireland’s energy and climate policies, including solar development.

The following actions outlined are of particular relevance to the proposed development:

- **Solar PV Expansion Targets** - The NECP sets out ambitions to significantly increase solar photovoltaic (PV) capacity by 2030. It supports both large-scale solar farms and rooftop solar on homes, businesses, and public buildings.
- **Support Mechanisms** - Solar projects benefit from the Renewable Electricity Support Scheme (RESS), which provides financial incentives for renewable electricity generation. The plan also promotes micro-generation and small-scale generation, allowing citizens and communities to produce their own solar power and sell excess to the grid.
- **Grid Integration and Infrastructure** - Investment in grid infrastructure is planned to accommodate the growing share of solar energy. The NECP outlines measures to streamline grid connection processes for solar developers.
- **Decarbonisation Goals** - Solar energy contributes to Ireland’s goal of reducing greenhouse gas emissions by 55% by 2030, in line with the EU’s Fit for 55 package. It is part of the broader strategy to achieve 80% renewable electricity by 2030.
- **Public Engagement and Planning** - The NECP was shaped by public consultations, and solar energy was a recurring theme in submissions. The plan encourages local authorities to integrate solar into their development plans, aligning with Project Ireland 2040.

### **EU Water Framework Directive 2000/60/EC**

The EU Water Framework Directive aims to enhance water quality across all water bodies and operates in six-year cycles, with the third cycle covering the period from 2022 to 2027. It requires member states to prevent any decline in water quality and to ensure that rivers,

lakes, groundwater, estuaries, and coastal waters reach at least 'good status' by 2027. The Directive is implemented through the Surface Water and Groundwater Regulations.

### **Planning Guidelines for Wind Energy (DoEHLG 2006)**

In 2006, the Department of Environment, Heritage and Local Government (DEHLG) published Wind Energy Development Guidelines for Planning Authorities (the Guidelines) under Section 28 of the Planning and Development Act, 2000, requiring planning authorities and An Bord Pleanála (at that time) to have regard to the Guidelines in the performance of their functions. The Guidelines offer advice to planning authorities on planning for wind energy through the development plan process and in determining applications for planning permission. They advise on land use and environmental issues for land-based (onshore) wind farms. They also provide clarity to prospective developers and local communities. The Guidelines are also intended to ensure a consistency of approach throughout the country in the identification of suitable locations for wind energy development and the treatment of planning applications for wind energy developments. The proposed development complies with the Guidelines.

### **Draft Revised Wind Energy Guidelines (DoHPLG, Dec 2019)**

In December 2019, the Department of Housing, Planning and Local Government published proposed draft revised guidelines for wind energy developments addressing a number of key aspects including noise, visual amenity setback, shadow flicker, community consultation obligations, community dividend and grid connections. The Draft Revised Guidelines were consulted on from 12 December 2019 to 19 February 2020. The publication of the Draft Guidelines at the end of 2019 followed a lengthy review process including the issue of draft revisions in December 2013 and a Preferred Draft Approach document in June 2017. At the time of writing, the Guidelines have not yet been finalised and are not formally in place, therefore the 2006 Guidelines continue to apply to new developments. Notwithstanding this, the design and environmental assessment of the proposed development has taken due consideration of the proposed new guidelines (e.g. housing setback, shadow flicker, community engagement).

## **6.3 The Regional Spatial and Economic Strategy for the Southern Region**

### Objective RPO 99 Renewable Wind Energy

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

### **Regional Policy Objective 219**

It is an objective to support the sustainable reinforcement and provision of new energy infrastructure by infrastructure providers (subject to appropriate environmental assessment and the planning process) to ensure the energy needs of future population and economic expansion within designated growth areas and across the Region can be delivered in a sustainable and timely manner and that capacity is available at local and regional scale to meet future needs.

### **Mid-West Regional Enterprise Plan, 2024**

This plan emphasises **sustainability** as one of its five strategic objectives, which includes initiatives related to the **bio-economy**, **renewable energy**, and **sustainability in the built environment**.

### **Mid-Western Area Strategic Plan, 2012-2030**

Objective to - Provide a framework to help decision making with regard to the physical and spatial development of the Region to 2030 and to promote balanced growth throughout the

region to achieve the maximum social economic, health and cultural benefits for all its citizens.

## **6.4 Limerick Development Plan 2022 – 2028**

### Policy CAF P1 Climate Action

It is a policy of the Council to implement international and national objectives, to support Limerick's transition to a low carbon economy and support the climate action policies included in the Plan.

### Policy CAF P2 Transition to a Low Carbon Economy

It is a policy of the Council to support the transition to a low carbon climate resilient economy, by way of reducing greenhouse gases, increasing renewable energy and improving energy efficiency and will future proof policies and objectives to deliver on this approach, in so far as possible.

### Policy CAF P6 Renewable Energy

It is a policy of the Council to support renewable energy commitments outlined in national and regional policy, by facilitating the development and exploitation of a range of renewable energy sources at suitable locations throughout Limerick, where such development does not have a negative impact on the surrounding environment landscape, biodiversity, water quality or local amenities, to ensure the long-term sustainable growth of Limerick.

### Objective CAF O4 Climate Proofing

It is an objective of the Council to ensure climate proofing measures are incorporated into the design, planning, layout and orientation and construction of all developments, including the use of sustainable materials, selection of suitable locations and the use of renewable energy sources.

### Objective CAF O8 Renewable Energy Objective

It is an objective of the Council to promote and support development of renewable energy sources, which will achieve low carbon outputs including on-land and offshore renewable energy production, which support tidal turbine, PV, community energy companies and battery technology, subject to adequate environmental and ecological protection.

### Objective CAF O14 Energy Generation

It is an objective of the Council to support the local production of renewable energy and connection to the gas network. Where electricity is being generated locally, the Council will support the provision of infrastructure for its transmission to the grid, subject to it fulfilling technical and environmental requirements.

### Objective CAF O27 Renewable Energy Production

It is an objective of the Council to encourage and facilitate the production of energy from renewable sources, such as from bioenergy, solar, hydro, tidal, geothermal and wind energy, subject to appropriate levels of environmental assessment and planning considerations.

### Objective CAF O28 Assessment of Renewable Energy Projects

It is an objective of the Council to encourage the development of wind energy, in accordance with Government policy and having regard to the principles and planning guidance set out in the Department of Housing, Planning and Local Government publications relating to Wind Energy Development and the DCCA Code of Practice for Wind Energy Development in Ireland and any other relevant guidance, which may be issued in relation to sustainable energy provisions during the course of the Plan.

### CAF O29 Wind Energy Development and Environmental Considerations

It is an objective of the Council to facilitate the development of wind energy in an environmentally sustainable manner, ensuring proposals are consistent with the landscape character objectives of the Plan, the protection of the natural and built environment and the visual and residential amenities of the area.

### CAF O30 Location of Wind Energy Developments

It is an objective of the Council to promote the location of wind farms and wind energy infrastructure in the 'preferred areas' as outlined on Map 9.1, to prohibit such infrastructure in areas identified as 'not open for consideration' and to consider, subject to appropriate assessment, the location of wind generating infrastructure in areas 'open for consideration'.

### Objective CAF O31 Wind Energy supporting Infrastructure

It is an objective of the Council to support the development of appropriate land based infrastructure and facilities at suitable locations, in order to facilitate the necessary connections for off- shore renewable energy projects.

### Objective TR O39 National Roads

It is an objective of Council to:

- a) Prevent, except in exceptional circumstances and subject to a plan-led evidence-based approach, in consultation with Transport Infrastructure Ireland, in accordance with the Section 28 Ministerial Guidelines Spatial Planning and National Roads Guidelines for Planning Authorities (DoECLG, 2012), development on lands adjacent to the existing national road network, which would adversely affect the safety, current and future capacity and function of national roads and having regard to reservation corridors, to cater for possible future upgrades of the national roads and junctions;
- b) Avoid the creation of any new direct access points from development, or the generation of increased traffic from existing direct access/egress points to the national road network, to which speed limits greater than 60km/h apply;
- c) Facilitate a limited level of new accesses, or the intensified use of existing accesses, to the national road network on the approaches to, or exit from, urban centres that are subject to a speed limit of between 50km/h and 60km/h. Such accesses will be considered where they facilitate orderly urban development and would not result in a proliferation of such entrances.

### Policy EH P1 Protection of Natural Heritage and Biodiversity

It is a policy of the Council to:

- a) Protect and conserve Limerick's natural heritage and biodiversity, in particular, areas designated as part of the European Sites Natura 2000 network, such as Special Protection Areas (SPAs) and Special Areas of Conservations (SACs), in accordance with relevant EU Directives and national legislation and guidelines.
- b) Maintain the conservation value of all Natural Heritage Areas and proposed Natural Heritage Areas (pNHAs) for the benefit of existing and future generations

### Policy CAF P5 Managing Flood Risk

It is a policy of the Council to protect Flood Zone A and Flood Zone B from inappropriate development and direct developments/land uses into the appropriate lands, in accordance with The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 (or any subsequent document) and the guidance contained in Development Management Standards and the Strategic Flood Risk Assessment (SFRA). Where a development/land use is proposed that is inappropriate within the Flood Zone, but that has passed the Plan Making Justification Test, then the development proposal will need to be accompanied by a Development Management Justification Test and Site-Specific Flood Risk Assessment in accordance with the criteria set out under The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 and Circular PL2/2014 (and any

subsequent updates). This will need to demonstrate inclusion of measures to mitigate flood and climate change risk, including those recommended under Part 3 (Specific Flood Risk Assessment) of the Site Specific Plan Making Justification Tests detailed in the SFRA. In Flood Zone C, the developer should satisfy themselves that the probability of flooding is appropriate to the development being proposed and should consider other sources of flooding, residual risks and the implications of climate change.

#### Objective CAF O20 Flood Risk Assessments

It is an objective of the Council to require a Site-Specific Flood Risk Assessment (FRA) for all planning applications in Flood Zones A and B and consider all sources of flooding (for example coastal/tidal, fluvial, pluvial or groundwater), where deemed necessary. The detail of these Site-Specific FRAs (or commensurate assessments of flood risk for minor developments) will depend on the level of risk and scale of development. The FRA will be prepared taking into account the requirements laid out in the SFRA, and in particular in the Plan Making Justification Tests as appropriate to the particular development site. A detailed Site-Specific FRA should quantify the risks, the effects of selected mitigation and the management of any residual risks. The assessments shall consider and provide information on the implications of climate change with regard to flood risk in relevant locations.

#### Policy EH P8 Landscape Character Areas

It is a policy of the Council to promote the distinctiveness and where necessary safeguard the sensitivity of Limerick's landscape types, through the landscape characterisation process in accordance with the Draft Guidelines for Landscape and Landscape Assessment (2000) as issued by the Department of Environment and Local Government, in accordance with the European Landscape Convention (Florence Convention) and with A National Landscape Strategy for Ireland – 2015- 2025. The Council shall implement any relevant recommendations contained in the Department of Arts, Heritage and the Gaeltacht's National Landscape Strategy for Ireland, 2015 – 2025.

#### LCA 01 Agricultural Lowlands

##### *Description:*

This is the largest of the Landscape Character Areas in Limerick and comprises almost the entire central plain. This landscape is a farming landscape and is defined by a series of regular field boundaries, often allowed to grow to maturity. This well-developed hedgerow system is one of its main characteristics. In terms of topography, the landscape is generally rather flat with some locally prominent hills and ridges. The pastoral nature of the landscape is reinforced by the presence of farmyards.

##### *Specific Objectives:*

- a) Encourage, where housing is permitted, design that reflects existing housing stock, such as the two-storey farmhouses which are a feature in the area.
- b) Encourage retention of existing landscape features such as hedgerows and trees and their incorporation into landscaping for new developments.
- c) Discourage development of locally prominent sites.
- d) Encourage the regular arrangement of turbines with equal spacing in proposed wind farm developments, which take field boundaries into account.
- e) Encourage development within existing settlements.

#### Chapter 11 Development Management Standards:

11.6.8 Agricultural Buildings, Re-use of Redundant Farm Buildings, Farm Diversification

11.7 Climate Action

11.7.1 Built Environment

Section 11.7.2.1 Wind Energy - Aspects to be considered by the Council when assessing planning applications for wind energy below SID thresholds include:

- Natural Heritage, including Environmental Assessments, the Landscape Character Areas of the Plan, or any future Seascape Character Assessment;
- Ground conditions, hydrology and topography, soil stability, surface drainage from all structures on site, including turbines, roads/tracks and substation;
- Geology and hydrogeology, impact on groundwater and watercourses, flood risk;
- Archaeology including National Monuments; – Architectural heritage;
- Noise and mitigation measures for sensitive receptor locations such as residences; – Shadow flicker and mitigation measures;
- Electromagnetic interference; – Environmental and ecological aspects including European designated sites, EIAR, AA, SPAs, SACs, NHAs and pNHAs;
- Connection to the National Grid; – Landscape and Visual Impact Assessment, including the size, scale and layout and the degree to which the wind energy project is visible over certain areas and in certain views;
- Traffic movement and safety, during construction and when in operation;
- Carbon emissions balance if the development requires peat extraction;
- Disposal or elimination of waste/ surplus material from construction/ site clearance, particularly significant for peatland sites;
- Information on the location of quarries to be used or borrow pits proposed during the construction phase and associated remedial works thereafter;
- Cumulative impact with similar windfarm development in the area; – Community engagement, investment and dividend;
- Decommissioning and dismantling of the structures and access road/track and restoration of the site; and – Previous planning history of the site.

11.8.1 Access to Roads, Traffic and Transport Assessments (TTAs) and Road Safety Audits (RSAs)

11.8.3 Car and Bicycle Parking Standards

11.8.6 EV Charging Points

11.10.1 Hours of Construction

11.12 Environment and Heritage

## **7. Environmental Impact Assessment / Appropriate Assessment**

The proposed development is strategic in nature, and the application has been made directly to An Coimisiún Pleanála. Therefore, An Coimisiún Pleanála is the Competent Authority in respect to appropriate assessment of the project. A Natura Impact Statement has been submitted in relation to the project and accompanies the application.

An EIAR has been submitted with the application. An Coimisiún Pleanála are the Competent Authority with regard to Environmental Impact Assessment and should therefore satisfy themselves regarding the adequacy of documentation submitted.

The above noted documents have been reviewed, and the key issues are considered in the Section below.

## **8. Views of the authority on the effects of the proposed development on the environment and the proper planning and sustainable development of the area of the authority**

### Proposed Development

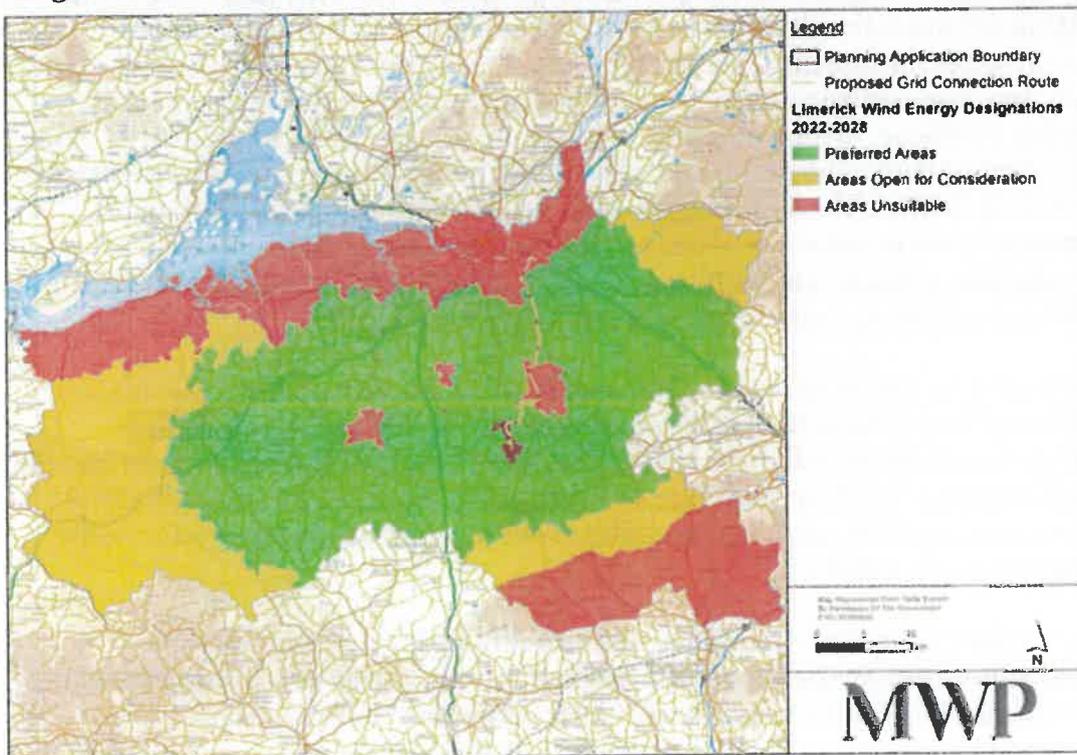
The proposed development provides for the development of 17 No. wind turbines, 92m Meteorological Mast, new 110kV Substation on site, new clear span bridge over the Morningstar River, internal on site underground cable system and underground cabling

system between windfarm site and connection point at Killonan 220/110kV substation, 3 no. temporary construction compounds, 2 no. borrow pits (source of stone material during construction and for storage of excess excavated materials), 9 no. temporary and 2 no. permanent deposition areas, surface water management system, 9 new entrances, new and upgraded access tracks, temporary access track via R516 at Tullovin (to facilitate turbine delivery), biodiversity enhancement and improvements including Whooper Swan Management Area works and Habitat Enhancement Areas works, and Landscaping, fencing and all associated ancillary works.

**Principle of Development**

The site is not zoned under the Limerick Development Plan 2022-2028. The windfarm site and the majority of the Grid Connection Route (GCR) is located in ‘Preferred Areas’ for Wind Energy Locations in the Development Plan. I note a section of the GCR lies within an area designated as being ‘unsuitable for new wind energy development’. Objective CAF O30 clearly prohibits the location of wind farms and wind energy infrastructure within such areas. However, the GCR essentially provides for the transmission of electricity from the windfarm site and could be considered as electricity transmission infrastructure rather than wind energy infrastructure. In this regard, while I note the GCR is part of the overall windfarm development, the designation “unsuitable for new wind energy development” does not preclude the development of electricity transmission development and therefore the provision of a grid connection through such lands as proposed could be acceptable. I also note that the GCR is underground and therefore, there will be no visual impact on the surrounding area once the development is operational.

In this regard, Objective CAF O30 states that is an objective of the Council to promote the location of wind farms and wind energy infrastructure in the ‘preferred areas’ as outlined on Map 9.1 (Figure 3 below). The development as proposed would facilitate 54MW of power and thus potentially accommodate a large proportion of the targeted wind generation for this area as set out in the Development Plan and would provide for c.14% of the renewable energy required to reach renewable energy targets set out in the Development Plan i.e. 386.45MW by 2030.



**Figure 4 – Map 2-4 Wind Energy Zoning within Limerick Development Plan (2022-2028) (taken from submitted Planning Statement)**

## Internal Reports

**(1) Roads Section** (report dated 10/11/2025) - The Roads Department do not support this application due to lack of information provided to make an informed decision as set out below. Conditions have also recommended in the event of a grant of permission and are also set out below:

### **Further Information Recommended:**

1. The proposed development, particularly in construction phase, is likely to have an impact on traffic management and road condition/maintenance and in the period immediately after construction. The major element of the project involves erection of Wind Turbines, which would constitute a major and diverse construction site.

The most serious impacts affecting roads relate to: -

- Impact on traffic management in the area and delivery routes;
- Impact on road structure and condition both during and after construction period;
- Impact and possible after-effects on road/ site drainage.

Drawings and supporting information shall be submitted to and agreed in writing with the Planning Authority prior to the commencement of the development.

2. (a) Sightlines, Stopping Sight Distances & Forward Visibility.
  - The Applicant shall submit detailed locations of the proposed entrances for the wind farm, the submitted locations highlighted on the EIAR do not indicate the exact location of the entrances to allow the Roads Department to make an informed decision.
  - The Applicant shall submit in plan form and to scale for approval with the Planning Authority, onto a **topographical survey** with sufficient detail and background mapping to clearly demonstrate the full and relevant sightlines and stopping sight distances for all 9 number proposed site entrances. The clear sightline triangle should be assessed from a distance of 3.0 metres back from the road edge. Supporting photographs shall be submitted. This should include where required setback of the front boundary approximately 0.5m behind the sightline envelope, even when the vegetation boundary reaches maturity. Note that reducing hedge heights is not allowable and all existing boundaries are to be set back behind the sightlines as outlined. All stationary objects such as overhead services poles are to be setback behind the sightline envelope. Showing the vehicles positions would be of benefit to all when demonstrating sightlines, stopping sight distances and forward visibility.

(b) The Applicant is to highlight on the Site Layout Plan any boundaries that may belong to adjacent landowners that will require setback to achieve the sightlines required. These boundaries shall be shown setback and shall be highlighted and labelled on the revised drawing. Written permission to setback and maintain any boundaries outside the ownership of the applicant is required along with supporting folios and maps to demonstrate ownership.

(c) A Stage 1/2 Road Safety Audit shall be submitted for approval and must be completed and submitted by the Applicant to the Planning Authority for approval in compliance with the TII Publication 'Road Safety Audit GE-STY-01024'.

(d) The Applicant shall address all problems raised with the Stage 1, 2 and 3 Audits in full and submit revised Site Layout Plans to include the recommendations of the Audits, which must be clearly labelled for acceptance by the Planning Authority.

3. Grid Connection Route:

(a) Provide detailed Site-specific drawings for all Joint chamber / communication chambers / link chambers, including:

- Plan views and cross-sections with dimensions
- Communication chambers and associated infrastructure
- All elements within the public road corridor. Existing and proposed.

(b) Drawings must be specific to each jointing location.

(c) Joint chambers shall be relocated off the public road and positioned within adjacent wind turbine farmland.

(d) The Applicant shall provide site specific details for all culvert / river crossings with construction methodologies.

**Recommended Conditions in the event of a grant of permission:**

**Condition 1. Roads**

- (a) A Stage 3 Road Safety Audit shall be submitted and accepted by the Planning Authority upon completion of the development prior to the wind farm coming into full operation. The RSA must be in compliance with the TII Publication 'Road Safety Audit GE-STY-01024'. The Audit Team must be independent in line with the standard.
- (b) The Applicant shall apply to Limerick City and County Council for an 'Abnormal Load Permit' to transport the wind turbine components prior to the commencement of the development and include any amendments required to junctions/roundabouts, traffic islands, signage, road edge strengthening and tree trimming.
- (c) A pre-condition survey of the haulage route at the proposed entrances shall be submitted for the written agreement with the Planning Authority including all bridges prior to the commencement of the development.
- (d) A post condition survey of the haulage route at the proposed entrances shall be submitted for the written agreement with the Planning Authority including all bridges shall be submitted upon completion.
- (e) The Applicant shall show the existing junctions that require works to facilitate the vehicles transporting the wind turbine components. The Applicant shall submit full details required for the written agreement with the Planning Authority prior to the commencement of the development. All costs associated with these works shall be borne by the Applicant and requires a Road Opening Licence.
- (f) The Applicant shall submit a pavement condition survey incorporating report on any structures (e.g. bridges, culverts) along various routes affected by the proposed works for the written agreement with the Planning Authority prior to the commencement of the development. Any works required to Limerick City and County Councils roads, bridges and culverts will require a Road Opening Licence. These works shall be agreed with Limerick City and County Councils Road Section prior to any works carried out to the roads, bridges and culverts. All costs associated with these works shall be borne by the Applicant.
- (g) A Site-Specific Temporary Traffic Management Plan (TTMP) identifying all construction sites, temporary parking areas and delivery routes for various types of material and structural units shall be submitted for the written agreement with the Planning Authority prior to the commencement of the development.

- (h) At proposed access points, the Applicant is to reinstate the area of ground between the road edge and the realigned front boundary to prevent any road safety issues occurring. This treatment is to allow for drainage of surface water from the roadway and is to protect the edge of the road from becoming damaged and breaking up over time. The area between the new boundary and the road edge to be excavated and backfilled with 200mm of clean stone, 150mm of compacted Cl 804 or similar granular material, and seal. The Applicant shall submit photographic evidence for written agreement of the Planning Authority to clearly demonstrate that this has been achieved.
- (i) The Applicant shall be made aware that any works to our road network including junctions and works required along the public road for a connection grid will require a Road Opening Licence (ROL).
- (j) The Applicant shall provide details of the lift plan required for the installation of jointing chambers if precast is the approved option.
- (k) The Applicant shall provide a percolation test results for the locations of the jointing chambers.

**Condition 2. Surface Water Management Plan**

- (a) The Applicants Consulting Engineers shall submit certification for the Surface Water/SuDs Specification that it has been constructed as designed upon completion of the development.
- (b) All surface water run-off from the development shall be disposed of appropriately. No such surface water shall be allowed discharge onto adjoining properties or onto the public road.
- (c) All surface water run-off from the public road, which flows into the site, shall continue to be accommodated within the site unless alternative arrangements acceptable to Limerick City & County Council are carried out. Full details of any such alternative arrangements shall be submitted to the Planning Authority and agreed prior to commencement of development.

Reason- In the interest of public health and to prevent flooding in the interest of traffic safety and amenity.

**Condition 4. Construction Management and Delivery Plan**

- (a) During construction of the proposed development, the following shall apply-
  - No work shall take place on site outside the hours of 8.00 a.m. to 8.00 p.m. Monday to Friday and 8.00 a.m. to 4.00 p.m. Saturday, or on Sundays or public holidays, unless otherwise agreed in writing by the Planning Authority.
  - No surface water run-off shall be discharged onto public roads, foul sewers or adjacent property.
  - Adequate car parking facilities shall be provided on site for all workers and visitors.
  - Deliveries shall be off peak.
  - No stacking of vehicles is permitted on the R516.

Reason – To protect the residential amenities of the area in the interest of proper planning and sustainable development.

- (b) The wheels and underside of all construction traffic leaving the site shall be cleaned, as required, to prevent soiling of public roads. A wheel washing facility, including water jets or other approved cleansing method shall be provided close to the site exit. In the event that any public roads become soiled by construction traffic from the site, these roads shall be cleaned immediately.

Reason - In the interest of the proper planning and sustainable development of the area, road safety and to protect the amenity of the area.

- (c) Prior to commencement of development, a revised Construction Management and Delivery Plan for the construction of the development shall be submitted and agreed in writing with Planning Authority, which shall include a Site-Specific Temporary Traffic Management Plan TTMP, (plan shall also be in drawing format). This is to give advance warning to road users on the public road being made aware that there is a construction site ahead.

Reason- In the interests of public safety and residential amenity.

**(2) Council Ecologist** (report dated 20/11/2025) – The Council Ecologist advises as follows:

**General:** the lack of regional guidance for what are now increasingly large wind energy and other renewable applications is a huge gap for Planning Authorities attempting to assess ever larger and more complex applications which, depending on size and location, now may have regional and landscape level effects. This is a gap which should be filled, in order to adequately inform county level strategies and enable Planning Authorities to adequately assess these applications. In the absence of such guidance individual assessments will lack context. The fact that the wind energy guidance is still in draft format does not help matters.

**EIA Chapter 6 Biodiversity:** Noted that habitat surveys took place at an optimal time i.e. during August and September 2023 and were updated in July 2025, which is consistent with good practice. Hedgerow assessment also took place, using the Hedgerow Appraisal System which is welcomed, as these can be an important habitat feature particularly on lowland sites in Limerick, as are drainage ditches.

Bat surveys were carried out in 2023 but were not subsequently updated which means they are now over two years old. Given the mobile nature of bats and that lowland (rather than upland) wind turbine applications pose a greater risk to bats this is a gap in the ecological analysis and in my view requires a more up to date survey to ensure mitigation measures are adequately informed. The fact that badger surveys were updated in July 25 is noted (p. 6-38). The opportunity should have been taken to update the bat surveys.

The inclusion of a carcass survey and post construction monitoring (which might be difficult to achieve in practice) for bats as outlined in S6.9.3.2 (p. 6-202) is a welcome addition and should be included in any conditions. It does not make up for the two year time gap since the last assessment.

Amphibian surveys and searches for frog spawn took place on 2<sup>nd</sup> of February 2023. Given that drainage ditches will be removed this survey should have been repeated this spring. Should permission be granted it is recommended that a survey of these ditches for amphibians, in particular frogs, takes place at an opportune time before development works begin. The removal of 1.3 km of drainage ditches within the development site is noted. While it is noted (Figure 6-32, p. 6-194) that new water features will be created it would be best if they could be more widely distributed throughout the site, rather than concentrated in Area 3 as shown on the map.

On page 6-62 it is noted that Whooper Swans roosting in Lough Gur are within foraging range of the development site. Though this species has been singled out it is likely that other wild fowl species might also use the site. From the flood report it is noted that 4 turbines of the 17

total lie within Flood Zones A and B. Flooding often attracts wildfowl for which the turbines may pose a displacement or collision risk. This is an aspect of the development which merits further examination.

The potential for badger and otter disturbance is noted. See above in relation to additional water features. The construction of artificial setts (outlined in S.6.8.1.6) is welcomed.

All of the mitigation measures shown in Section 6.8 should be implemented, with as noted above, a more widely distributed network of water features such as ponds. More specific detail is required in relation to the two borrow pits mentioned, in particular during their operational phase and further examination of specific mitigation measures for these should be detailed. The employment of an EcCOW is essential to ensure mitigation measures are properly applied.

### **Chapter 7 Ornithology:**

The bird surveys were comprehensive and carried out over a number of years and were less than a year old prior to submission. However, I think one deficiency remains in that the issue of flooding and its potential for attracting wildfowl to the development site needs further examination. The importance of flooding for wildfowl is acknowledged in the chapter (p.73) which mentions that “intermittent flooded areas within the Development site provide foraging and roosting habitat for water-dependent species, particularly during wetter periods”

It is noted that there was a concentration of Whooper Swan activity close to the site of the proposed Turbine 3, during nighttime (midnight to 1.00 AM, December 2023) which increases the collision risk.

The mitigation measures out-lined in section 7.7 should be implemented in full should permission be granted. I'm unsure of how the management areas (Table 7-13 and Figure 7-8) for the whooper swans will work. On the face of it they will provide valuable habitat and for other species as well but given the swans and other species tendency for night flight and the location of the management area close to the development, this may well increase collision risk, for them and other species which may use it. This is a factor which requires further examination.

Post monitoring seems to concentrate on swans (pp.95, S7.8.2). this should be broadened to include all wildfowl species. Changed conditions on the site post development may increase the attractiveness of the area for a wider variety of bird species. Section 7.8.2.1 Collision Risk Monitoring is essential, should permission be granted and should be the subject of a specific condition.

**NIS:** unsure of how the author could conclude that the SAC otter population presumably those associated with the Shannon would travel as far as the site. Whether they do or not is a moot point as the otter is a QI of the SAC and may well have broader range than the literature on the topic indicates.

All of the measures included in S6.3 Mitigation should be included as a condition. The pre-construction survey for otters (and Amphibians as noted in comments on the EIAR) is regarded as essential.

There seems to be no specific mention of the Whooper Swan Management Works in the mitigation measures of the NIS, though they were mentioned in passing earlier in the document. This omission is notable and should be clarified. They were dealt with in more detail in the EIAR.

### **Recommendation:**

That the gaps identified in the information provided be filled to enable assessment of the project. Such as issues as the role of flooding attracting wildfowl to the site, how the management area for whooper swans will work all need further assessment.

**(3) Council Flood Section (PEMP)** (report dated 18/11/2025) – PEMP has reviewed application 25/323780 with regard to flood risk and makes the following observations:

- The proposed development is located partly within Flood Zone A, B and C as per the Limerick Development Plan 2022-2028.
- The proposed substation is located within Flood Zone C according to the flood risk assessment;
- It is noted that site specific flood modelling has been undertaken by the applicant with a HEC RAS model built to determine baseline hydrological conditions and assess any post development impacts on account of the proposed development;
- It is noted that 4 no. proposed turbines (of 17 no. total) are located within Flood Zone A and B as per Table 4.15 within the flood risk assessment. The remainder of the turbines are within Flood Zone C including the proposed substation;
- From Section 4.4.5, it is unclear as to what elements the applicant is referring to will be set above the 1%AEP level plus allowance for freeboard and climate change however for the avoidance of doubt, it is recommended by way of condition that any essential infrastructure (electrical, M&E etc.) is elevated to this level as a minimum;
- It is stated within the FRS that the post development modelling flood extent in the 1% and 0.1% events indicates there is no appreciable increase in flood risk either upstream or downstream of the proposed development;
- To ensure that no flood flow paths are disrupted that would lead to an increase in flood risk to existing development, it is recommended that sizing of proposed culverts will include appropriate allowance for blockage at detailed design stage;
- It is noted that the Justification Test has been applied to this development within the SSFRA;
- It is recommended that no temporary storage of materials should be stockpiled within Flood Zone A and/or B that would appreciably impact important flood flow routes or result in loss of flood storage that would increase flood risk to existing property either upstream or downstream of the development;
- Any proposed watercourse crossings may be subject to the separate Section 50 process;
- Any development within Flood Zone A and B (such as access roads) should be constructed with flood resilient materials;
- Proposed access roads should be constructed close to existing ground levels to ensure that no adverse flow routes or impact to flood storage should occur.

Subject to the above, PEPM raise no objection on the grounds of flood risk.

**(4) Council Archaeologist** (report dated 10/11/2025) - The Council Archaeologist notes that the proposed development has a very large footprint. Within the site there is an estimated 8.3km of new access track at a minimum width of 5m (on straight stretches), larger splays on curves and at 9 new entrances, upgrade of 0.5km of existing track (500m x 2m); the floated track is likely to require top soil strip (2km x 5m). Hardstand represents 168,000 sqm, turbine bases 9,737sqm, construction compounds 7,500sqm, deposition areas 87,377sqm, borrow pit 60,700sqm. In addition, there is the footprint of the meteor mast and the substation as well as the trenches & settlement tanks |& other infrastructure for waste, foul & potable water. Finally there is the removal of 1,578m of hedgerow and clearfelling of 14.4ha of forestry as well as the replacement of 14.4ha of new planting. Within the site the large scale

items represent direct ground disturbance of a very conservative 52ha, not including the 14.4 replacement planting. In addition there is 26km of ducting to join the grid mainly along public roads, estimated to excavate 24,840 cubic metre of material.

The development is located in an area of high archaeological density, there are over 200 monuments included in the 3km catchment of the development and 31 within the red line boundary. The classification and morphology of many of the Bronze Age sites (over 80 in number) in particular, would indicate that there is a high probability of the proposed development disturbing a large amount of previously unrecorded material. The Framework and Principles for the Protection of the Archaeological Heritage, sets out the basic principles of national policy on the protection of the archaeological heritage. It states 'Preservation insitu must always be the first option to be considered rather than preservation by record in order to allow development to proceed, and preservation in-situ must also be presumed to be the preferred option' (p.24). It is worth restating that the remains of our ancestors are a finite resource and archaeological excavation represents controlled destruction of these sites, with the tools available currently. In making a decision in regard to this development it should be questioned whether the potential destruction, disturbance and other impacts on the archaeological landscape is balanced by the gains from the development, or whether the development would be better relocated to a less sensitive environment.

The Council Archaeologist recommends the following conditions in the event that planning permission is granted:

**Condition 1:** The developer shall appoint a licensable archaeologist who shall apply for a licence to manage all archaeological mitigation required by the Planning Authority, inter alia to advise on all redesign, to monitor all site investigations, excavation works and all ground disturbance associated with the development, to carry out advance archaeological excavations. The name of the archaeologist shall be submitted within one month of the grant of planning permission or at any time before that date, accompanied by a site specific letter from the archaeologist certifying that they have applied for a licence.

**Condition 2:** Within one month of the grant of planning permission, or before, as indicated in the submitted mitigation strategy, a licensed geophysical survey shall be undertaken across the entire site, including the site identified for the replanting of the 14.4ha of forestry. The survey shall employ the system or a combination of systems of survey to amass the best results and the report shall lay out the reasons for this methodology. The results of this survey shall be reviewed by the Planning Authority. In the event that there are further definitively recognisable monuments established during the survey, redesign and buffer areas may be required.

**Condition 3.** Buffers of 25m shall be established from the outer known edge of all of the Recorded Monuments, and any monuments definitively identified during the non-invasive survey. A revised drawing indicating these buffers shall be submitted for the approval of the Planning Authority. The drawing shall show the outer circumference of the individual site and a 25m buffer which mirrors this line which shall be annotated. The buffer shall be maintained in perpetuity and within it no deep rooted planting, landscaping, soil disturbance, or subsequent exempted development shall occur. The buffer shall be physically established prior to the commencement of construction and shall be a fence with driven post & rails with appropriate signage and its construction shall be supervised & certified by the appointed archaeologist.

**Condition 4:** In consultation with the Planning Authority a schedule of licensed archaeological test trenching, as indicated in the mitigation strategy, shall be undertaken, informed by the results of the non-invasive geophysical survey but also including a

representative sample of the site. The preliminary results of this archaeological test trenching shall be submitted to the Planning Authority on completion of site works. Further mitigation may be required at this point either redesign or advance excavation and this is to be agreed in consultation with the Planning Authority. The final report of the test trenching, in the format recommended in the Guidelines for Authors of Reports on Archaeological Excavations 2006 National Monuments Service shall be submitted within 6 months.

**Condition 5:** Following the survey & test trenching there may be a requirement for advance archaeological excavation if redesign is not an option or practicable. If enabling works have commenced on the overall site, then areas for advance excavation shall be fenced off with an adequate working buffer.

**Condition 6:** All areas requiring advance archaeological excavation shall be carried out well in advance of construction in that area. The developer shall provide satisfactory arrangements for the recording and excavation of any archaeological material that may be considered appropriate to excavate and shall undertake to complete all post excavation analysis up to and including final report stage. Excavators should include a catalogue of excavated features with 12 figure ITM coordinates for the centre point of each feature. Within twelve months of the completion of the excavation a final report (in the format recommended in the Guidelines for Authors of Reports on Archaeological Excavations 2006 National Monuments Service) shall be submitted to the Planning Authority

**Condition 7:** Licensed archaeological monitoring shall be in place for all ground disturbance associated with the development, this includes but is not limited to landscaping, tree planting, drainage, hardstand, access routes. Any private arrangements for construction compounds or storage that arise shall be assessed archaeologically and monitored. Areas to be monitored along the 26km route to the grid connection shall be agreed in advance, but, *at a minimum*, will contain all zones of notification along the route.

**Condition 8:** The appointed archaeologist shall:

- a. Submit on completion of the ground works a report detailing the results of the licensed archaeological monitoring works to the Department of Housing, Local Government & Heritage and the Planning Authority. The report shall contain a drawing showing the exact extent of the area that was archaeologically monitored certified by the archaeologist. Excavators should include a catalogue of excavated features with 12 figure ITM coordinates for the centre point of each feature. In the event that the development is phased, interim reports shall be submitted at each stage showing the area monitored and giving preliminary results.
- b. Should archaeological material be found during the course of monitoring, the archaeologist may have work on the site stopped, pending a decision as to how best to deal with the archaeology. The Development Applications Unit, National Monuments Service, Department of Housing, Local Government & Heritage and the Planning Authority Archaeologist shall be informed immediately. The developer shall be prepared to be advised by the National Monuments Service, Department of Housing, Local Government & Heritage and the Planning Authority with regard to any necessary mitigating action.
- c. Should an archaeological excavation be required then the following shall apply: the developer shall provide satisfactory arrangements for the recording and excavation of any archaeological material that may be considered appropriate to excavate and shall undertake to complete all post excavation analysis up to and including final report stage. Excavators should include a catalogue of excavated features with 12 figure ITM coordinates for the centre point of each feature. Within twelve months of the completion of the excavation a final report (in the format recommended in the

Guidelines for Authors of Reports on Archaeological Excavations 2006 National Monuments Service) shall be submitted to the Planning Authority

**(5) Council Conservation Officer** (reports dated 29/10/2025) – The Conservation Officer has examined the documentation submitted in support of the application, with particular regard to Chapter 14 (Archaeology and Cultural Heritage) of the E.I.A.R., and the associated drawings and figures, and provides comments and recommendations including conditions in the event permission is granted, as follows:

Figure 14-5 and the associated Table 14-10, 'NIAH and RPS Structures within 3km study zone', appears to have omitted a number of Protected Structures, including several within the vicinity of the proposed development site. These include:

- Reg. No. 650 – Rathcannon Castle
- Reg. No. 652 – Rathcannon House
- Reg. No. 575 – Maidstown Castle and Maidstone House
- Reg. No. 532 – De Valera Cottage
- Reg. No. 670 – Rockbarton House
- Reg. No. 669 – Rockbarton Outbuildings
- Reg. No. 454 – Glebe House
- Reg. No. 467 – Kilballyowen
- Reg. No. 53 – Summer Ville
- Reg. No. 339 – Dromin Church
- Reg. No. 336 – Tierney's
- Reg. No. 337 – Fair Green
- Reg. No. 192 – Bulgaden Castle
- Reg. No. 190 – Creamery
- Reg. No. 99 – St Mary's Church
- Reg. No. 1704 – Bantard House
- Reg. No. 711 – Cotter's
- Reg. No. 1040 – McMahon's
- Reg. No. 1034 – St. Munchin's Church
- Reg. No. 1035 – Health Centre
- Reg. No. 1036 – Former School
- Reg. No. 1037 – Briar Cottage
- Reg. No. 1039 – Bridge
- Reg. No. 1038 – Creamery
- Reg. No. 1041 – Church
- Reg. No. 1043 – Bruree Lodge
- Reg. No. 559 – Glebe Castle
- Reg. No. 558 – Bruree Castle
- Reg. No. 463 – Howardstown Bridge
- Reg. No. 29 – Glebe House
- Reg. No. 30 – Kilbroney Church
- Reg. No. 28 – Athlacca Bridge
- Reg. No. 210 – Cahir-Guillamore

These missing Protected Structures should be added to the map in Figure 14-5, and potential impacts on these Protected Structures and their settings should be assessed if they are within 3km of the closest point of the proposed development site.

The assessment/Chapter 14 refers to the D.o.E.H.L.G. Historic Gardens and Designed Landscapes survey (the N.I.A.H. Garden Survey), however it does not identify any sites included on this survey within the study area. The proposed development site appears to be located partly within a

designed landscape (Summer Ville – Reg. No. 1561). There are further N.I.A.H. Garden Survey sites within the study area, including:

Greenpark House (Reg. No. 1565)  
Bulgaden Hall (Reg. No. 1569)  
Glebe House (Reg. No. 1521)  
Tullerboy Cottage (Reg. No. 1516)  
Castle Ievers (Reg. No. 1517)  
Green Lawn (Reg. No. 1553)  
Camas House (Reg. No. 1556)  
Clorane House (Reg. No. 1518)  
Rockbarton House (Reg. No. 1562)  
Milltown George (Reg. No. 1571)  
Milltown Lodge (Reg. No. 1572)  
Kilballyowen House (Reg. No. 1577)  
Cahir Guillamore (Reg. No. 1557)

The potential indirect/visual impacts of the proposed wind farm development on these designed landscapes should be assessed. Similarly, the potential impacts of the development on views from the Bruff, Kilmallock and Lough Gur Architectural Conservation Areas should be assessed with regard to the historic architectural character of these areas.

The applicant should have due regard to the relevant policies and objectives in the Limerick Development Plan 2022-28 relating to the Architectural Heritage and Historic Gardens/Landscapes – including Policy EH P9, Objective EH O50, EH O52 and EH O53.

Architectural heritage assets along the route of the proposed Grid Connection and Turbine Delivery Route are described in Sections 14.4 and 14.5 of the E.I.A.R., however insufficient assessment of the potential impacts on these assets is provided, particularly with regard to historic bridges that the routes will cross. The Grid Connection Route and Turbine Delivery Route may impact two historic stone bridges – Ferry Bridge (R.P.S. Reg. No. 257) and Sixmile Bridge (R.P.S. Reg. No. 455). Details of the mitigation measures that will be put in place to protect these bridges (and any other historic bridges along the route) should be submitted.

### **Conclusion:**

The EIAR and LVIA do not include consideration of all cultural heritage assets within the wider setting, as outlined above. I recommend that further information be sought, to adequately assess the potential impacts of the proposed development on the architectural heritage and designed landscapes of the wider context.

I recommend that the following further information be sought from the applicant:

1. A revised Chapter 14 of the EIAR should be submitted, to include assessment of the potential direct and indirect impacts of the proposed development on the cultural heritage assets within the wider context of the site, including:
  - a. Protected Structures omitted from the submitted EIAR Chapter 14.
  - b. Architectural Conservation Areas in the wider context – including Bruff, Lough Gur and Kilmallock.
  - c. Sites included on the N.I.A.H. Garden Survey (Historic Gardens and Designed Landscapes), including in particular Summer Ville (Reg. No. 1561).

This assessment should include a description of the predicted impacts (direct and indirect) and any mitigation measures proposed. Additional photomontages may be required to assess the visual impacts on viewpoints of key significance.

The following additional information should also be included in the revised Chapter 14:

- d. Details of any mitigation measures proposed regarding existing architectural heritage constraints along the Grid Connection and/or Turbine Delivery Route (including Ferry Bridge, R.P.S. Reg. No. 257, and Sixmile Bridge, R.P.S. Reg. No. 455).

**(6) Council Environment Section (Environment & Climate Action)** (report dated 24/10/2025) – The Environment Section’s Executive Scientist provides comments, recommendations and conditions in the event planning is granted in relation to Noise and Shadow Flicker, as follows:

## **Noise**

### **Summary**

There are extensive comments regarding the noise section, Chapter 13, of the EIAR. These are summarised as follows:

- There is an error in the mapping of at least one of the proposed wind turbines, T9, and potentially the other proposed turbines in Figure 13-1. The geographic coordinates of the input and output files for the noise models should be reviewed as the error may compromise the accuracy of calculations at noise sensitive locations.
- Background noise levels at noise monitoring locations NML4 are probably higher than representative for typical low levels in the vicinity of dwellings in the southeast of the study area for higher wind speeds.
- There is a discrepancy between LCCC and the EIAR interpretations for setting of noise limits for day- and night-time.
- The proposed noise limits will potentially allow turbine noise levels to be significantly above background noise at night-time and day-time at moderate wind speeds (up to 18 dB and 14 dB, respectively, downwind at wind speeds of 6 m/s).
- New noise limits should be derived, consistent with the WEDG (2006) and ETSU-R-97 (which is referenced in the WEDG) for day-time (particularly for the setting of the fixed noise limits in *low noise environments* between 35 and 40 dB(A) L90 followed by a limit of 5 dB above background noise) and the Limerick Development Plan 2022-2028 for night-time, and an assessment of any expected exceedances based on the calculated noise levels.
- Proposals should be submitted for mitigation measures to ameliorate exceedances of the noise criteria where they may exist.
- In the event that any planning is granted then background noise from monitoring location NML4 should not be used to determine specific noise levels for nearby dwellings for the assessment of operational compliance. Ideally a background noise monitoring survey should be undertaken again for the southeast of the study area, or the nominal background criteria used in the determination of specific noise levels.
- Consideration should be given to the UK’s Mineral Policy Statement 2 for the setting of noise limits from construction.

Recommendations are included at the end of this report.

## Mapping

There is an error in the mapping of at least one of the proposed turbines in Chapter 13 of the EIAR. Figure 13-1 provides a mapped overview of the seventeen proposed turbine locations and the noise sensitive locations in the study area. It is difficult to determine the exact location of the proposed turbines in the figure due to the type of symbol used and the scale of the image. However, a more precise location for at least one of the proposed turbines, T9, is presented in Figure 13-20 (Figure 1 below), with its Irish Transverse Mercator (ITM) geographic coordinates provided in Table 13-24 (559988 / 633538).



Figure 1. Figure 13-20 of EIAR.

T9 is plotted in Figure 13-20 approximately 40 metres northeast of the actual location of the ITM coordinates in Table 13-24 (Figure 2).

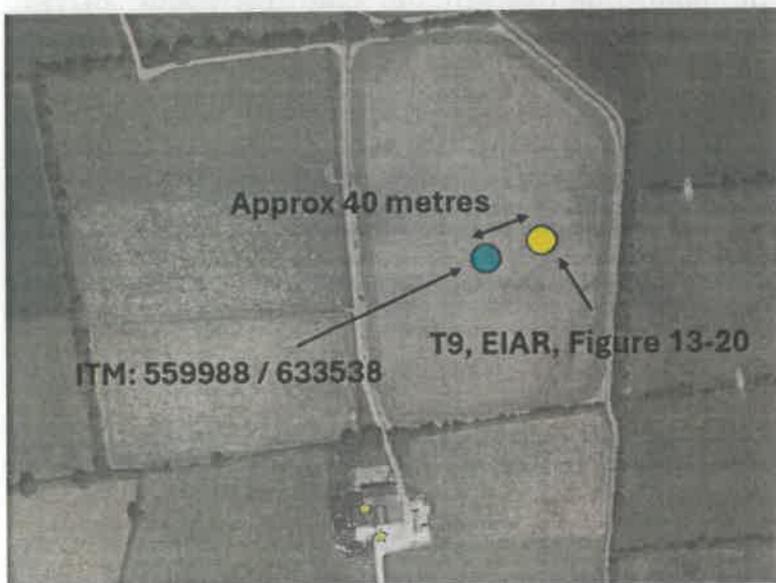


Figure 2. Discrepancy in location of proposed turbine T9.

It appears that the noise sensitive receptors have been plotted correctly in the EIAR (e.g. NSLO56 in Figure 13-18 and NSLO61 in Figure 13-17, plotted from ITM coordinates in Appendix 13C). It is recommended that the consistency of the geographical projections used for all input and export files for the noise calculation model are reviewed to ensure the

accuracy of predicted sound levels at noise sensitive locations and the noise contour plot in Appendix 13E.

### **Assessment of Background Noise**

The *Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise* (GPG) outlines recommendations for siting measurement equipment. ETSU-R-97 (*The Assessment and Rating of Noise from Wind Farms*) and the GPG are referred to being considered in the noise report. The GPG states in part that:

*“Equipment should be placed at outdoor positions where noise levels are representative of typical ‘low’ levels likely to be experienced in the vicinity of a dwelling (or group of dwellings if the measurements are intended to be applied to more than one dwelling). The overriding consideration is that it can reasonably be claimed, from inspection and observation, that there are no other suitable noise-sensitive locations”;*

and

*“The influence of noise from local sources should be taken into account when selecting measurement locations.”*

There is the potential that at higher wind speeds that the vegetation/hedgerow immediately adjacent to Noise Monitoring Location 4 (NML4) potentially will have influenced background sound levels at least at higher wind speeds. NML4 is possibly not representative of the ambient noise conditions at the dwelling that monitoring equipment was located. That location provides some of the highest average noise levels calculated at high wind speeds (i.e. that location is potentially effected by nearby vegetation).

A fourth order polynomial has been used to determine the regression curves for the day-time background noise levels for the six noise monitoring locations. However, a third order polynomial has been used to derive the regression curves for the night-time background noise levels. A fourth order polynomial for the night-time background noise regression curves would be more consistent with the day-time regression curves given the limited data at higher wind speeds. The coefficient of determination ( $R^2$  value) for the regression curves for night-time (and day-time) are not particularly high (day-time  $R^2$  values are generally higher than the night-time  $R^2$  values) and may be improved by using a fourth order polynomial regression curves. Consequently, the derived average background noise levels at higher wind speeds for night-time are possibly higher than expected at higher wind speeds (9 and  $\geq 10$  m/s). It is recommended to review the impact on the coefficient of determination ( $R^2$  value) and noise levels at higher wind speeds by applying a fourth order polynomial to the night-time background noise regression curves.

The GPG and ETSU-R-97 provide recommendations for the temporal filtering of day-time and night-time background noise data to ensure its representativeness. The periods of time and days used to filter day-time and night-time data for the background survey are not clarified in the EIAR. It is recommended that the periods of time used to filter the background noise data are clarified. It is indicated that the wind speed measurements have been corrected to a standardised 10 metres height to account for wind shear in accordance with the GPG.

### **Wind Turbine Noise**

The candidate turbine type is the Vestas V136 with tip heights and hub heights of 160 metres and 92 metres respectively, except for turbine T6 with a tip height and hub height of 150 metres and 82 metres. This will not necessarily be the final turbine type selected which will be decided after any planning is granted during procurement.

The sound power levels at hub height integer wind speeds have been provided but no details have been provided how hub height sound power levels were converted to a standardised 10 metres height. The method used to convert the hub height sound power levels to 10 metres standardised height should be clarified.

### **Setting of Noise Limits**

The wind turbine noise criteria in the EIAR is derived based on the lowest background day- and night-time noise levels from the noise monitoring locations (NML1 to NML6), termed the nominal criteria. The wind turbine noise criteria in the EIAR is derived based on the lowest background day- and night-time noise levels from the noise monitoring locations (NML1 to NML6), termed the nominal criteria.

The EIAR states that:

*“As outlined in Section 13.2.2, the recommended best practice noise limits for the proposed development, shall be a combination of guidance provided in WEDG 2006, ETSU, IOA GPG and SGNs”* (Where SGNs are the Supplementary Guidance Notes to the Institute of Acoustics (IOA) GPG).

There is a discrepancy between the EIAR and LCCC approaches for deriving wind turbine noise limits, including the consideration of:

- the setting of day-time low noise fixed limits;
- the Limerick Development Plan 2022-2028 and setting of night-time limits.

### **Day-time low noise environments**

The WEDG (2006) makes a broad preliminary statement that a lower fixed limit of 45 dB(A) or a maximum increase of 5dB(A) above background noise at nearby noise sensitive locations is considered appropriate to provide protection to wind energy development neighbours. It then goes on to detail the methodology and limits in detail by taking those from the UK Guidance (ETSU-R-97) which is referenced in Appendix 6 of the WEDG.

Background noise levels at the noise monitoring locations for this proposal are all below 30 dB(A) L90 at low to moderate wind speeds (up to 6 m/s at a standardised 10 metres height). In relation to low background noise environments the WEDG (2006) state:

*“in low noise environments where background noise is less than 30 dB(A), it is recommended that the daytime level of the LA90, 10min of the wind energy development noise be limited to an absolute level within the range of 35-40 dB(A).”*

The purpose of low noise fixed limits is meant to protect residents in quiet rural areas from excessive wind turbine noise while still allowing for wind energy development. The limits are considered to provide a reasonable degree of protection and aims to balance the need for renewable energy with local amenity.

There is no discussion in the WEDG how to determine an appropriate limit between 35 and 40 dB(A) but ETSU-R-97 states:

*“The actual value chosen within this range should depend upon a number of factors:*

- 1. the number of noise-affected properties;*
- 2. the potential impact on the power output of the wind farm; and*
- 3. the likely duration and level of exposure.”*

These three factors are not considered in the EIAR. The 40 dB(A) L90 limit is selected based on the EPA's *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)* recommends a 45 dB(A) Leq limit for "areas of low background noise", and a 40 dB(A) L90 limit will be 5 dB below that. This approach is flawed though because the criteria for "areas of low background noise" in NG4 is that the background noise level shall be  $\leq 40$  dB(A) L90 which is 10 dB above the "low noise environment" criteria in the WEDG (a 10 dB reduction is an expected halving of perceived loudness for the average listener). There is a discrepancy between the two terms "areas of low background noise" in NG4 and "low noise environment" in the WEDG although they sound similar. There is a significant number of noise sensitive properties in the study area, many of which are downwind of turbines under predominantly southwesterly wind conditions.

The implication of a *low noise environment* is that for the wind speeds that the background noise is less than 30 dB(A) L90 the absolute noise limit should be between 35 and 40 dB(A) L90 but otherwise the noise limit should not be 5 dB above background noise (Figure 3, left). This is interpreted differently in the EIAR (Figure 3, right) suggesting that any time the background noise level is below 30 dB(A) L90 the turbine noise limit should be 40 dB(A) L90 - but could arguably be as low as 35 dB(A) L90) then - when the background noise level exceeds 30 dB(A) the turbine noise limit rises to 45dB (background noise level is 31 dB dB(A) L90 at 6 m/s). The EIAR approach allows wind turbine noise levels to be 18 dB above background noise at 2 m/s, reducing to 11 dB at 6 m/s, but then increasing again to 13 dB headroom at 7 m/s because the background noise has risen slightly above 30 dB(A). It is the opinion of LCCC that the EIAR approach to setting noise criteria is contrary to providing a reasonable degree of protection to residents.

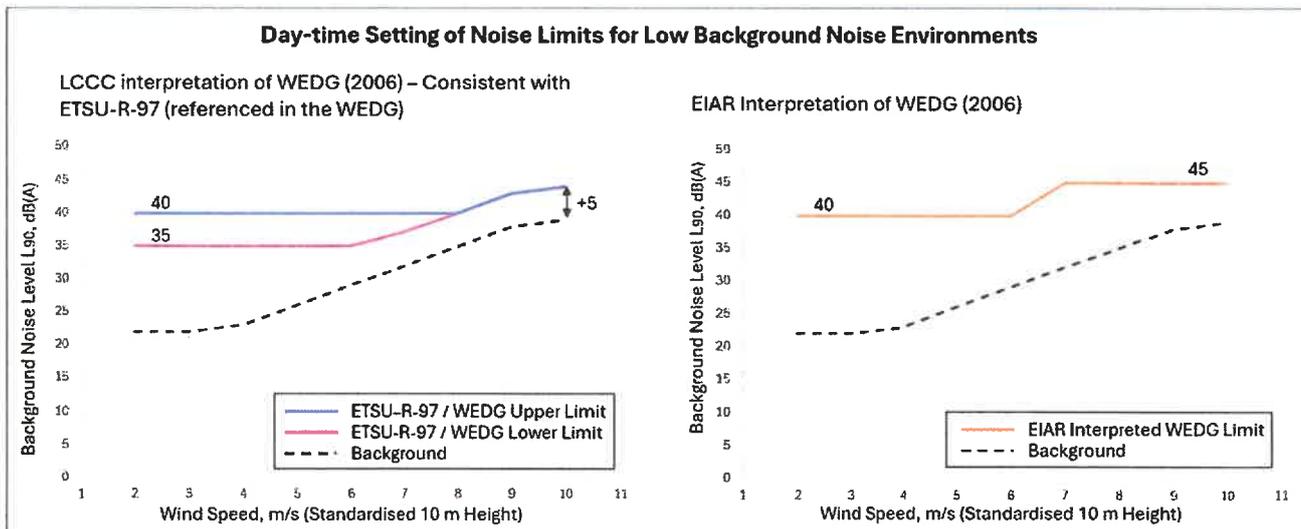


Figure 3. Discrepancy between the interpreted day-time noise limits for low background noise environments between LCCC (based on Figure 10 in ETSU-R-97) and the EIAR.

As mentioned above, the approach to setting noise limits for *low noise environments* at day-time originates from the ETSU-R-97 guidance. The lower limit of 35 dB(A) or 40 dB(A) should be followed by a limit of 5 dB above background noise.

### **Night-time noise limit**

In relation to setting night-time noise limits, the requirement in the Limerick Development Plan (LDP) 2022-2028 is that there shall be a lower fixed noise limit of 38 dB(A) L90 or 5 dB above background noise levels, whichever is the greater. The purpose of the different (outside) LDP lower fixed night-time noise level of 38 dB(A) L90 is because the WEDG (2006) fixed night-time noise limit of 43 dB(A) L90 was based on UK planning guidance

PPG24 (to protect sound inside bedrooms below an average of 35 dB(A) Leq through an open window) which was subsequently repealed. The lower fixed noise level for night-time required by the LDP will protect sound levels inside bedrooms in line with recommendations in BS8233:2014 *Guidance on sound insulation and noise reduction for buildings*, below the recommended target internal level of 30 dB(A) Leq through an open window. The purpose of the LDP lower fixed night-time noise limit of 38 dB(A) L90 is not to be conservative to take account of any special audible characteristics as suggested in the EIAR.

### **Assessment of wind turbine noise levels against noise limits**

The LCCC and EIAR interpretation of the wind turbine noise limits are presented in Table 1 along with the highest calculated wind turbine noise levels for at three noise sensitive locations that, not financially involved (NSL065, NSL370, NSL422), and are reported to be expected to marginally exceed the EIAR noise criteria.

Table 1. Predicted wind turbine noise levels, LCCC and EIAR interpreted noise criteria and any exceedances of the criteria (highlighted bold and underlined).

Wind Speed (standardised 10m H), m/s	3	4	5	6	7	8	9	10
Background Day-time L90, dB(A)	22	23	26	29	32	35	38	39
Background Night-time L90, dB(A)	19	20	22	24	28	32	37	42
LCCC Upper Day-time Noise Limit L90, dB(A)	40	40	40	40	40	40	43	44
LCCC Lower Day-time Noise Limit L90, dB(A)	35	35	35	35	37	40	43	44
LCCC Night-time Noise Limit L90, dB(A)	38	38	38	38	38	38	42	47
EIAR Day-time Noise Limit L90, dB(A)	40	40	40	40	45	45	45	45
EIAR Night-time Noise Limit L90, dB(A)	43	43	43	43	43	43	43	43
<b>NSL065 - Predicted Wind Turbine Noise L90, dB(A)</b>	28.4	30.1	36.8	40.1	41.2	41.2	41.2	41.2
Exceedance LCCC Upper Day-time Limit, dB	-11.6	-9.9	<b>-3.2</b>	<b>0.1</b>	<b>1.2</b>	<b>1.2</b>	-1.8	-2.8
Exceedance LCCC Lower Day-time Limit, dB	-6.6	<b>-4.9</b>	<b>1.8</b>	<b>5.1</b>	<b>4.2</b>	<b>1.2</b>	-1.8	-2.8
Exceedance LCCC Night-time Limit, dB	-9.6	-7.9	<b>-1.2</b>	<b>2.1</b>	<b>3.2</b>	<b>3.2</b>	-0.8	-5.8
Exceedance EIAR Day-time Limit, dB	-11.6	-9.9	-3.2	<b>0.1</b>	-3.8	-3.8	-3.8	-3.8
Exceedance EIAR Night-time Limit, dB	-14.6	-12.9	-6.2	-2.9	-1.8	-1.8	-1.8	-1.8
Exceedance of WTN Level Above Day-time Background Noise	6.4	7.1	10.8	11.1	9.2	6.2	3.2	2.2
Exceedance of WTN Level Above Night-time Background Noise	9.4	10.1	14.8	16.1	13.2	9.2	4.2	-0.8
<b>NSL370 - Predicted Wind Turbine Noise L90, dB(A)</b>	28.7	30.4	37.1	40.4	41.5	41.5	41.5	41.5
Exceedance LCCC Upper Day-time Limit, dB	-11.3	-9.6	<b>-2.9</b>	<b>0.4</b>	<b>1.5</b>	<b>1.5</b>	-1.5	-2.5
Exceedance LCCC Lower Day-time Limit, dB	-6.3	<b>-4.6</b>	<b>2.1</b>	<b>5.4</b>	<b>4.5</b>	<b>1.5</b>	-1.5	-2.5
Exceedance LCCC Night-time Limit, dB	-9.3	-7.6	<b>-0.9</b>	<b>2.4</b>	<b>3.5</b>	<b>3.5</b>	-0.5	-5.5
Exceedance EIAR Day-time Limit, dB	-11.3	-9.6	-2.9	<b>0.4</b>	-3.5	-3.5	-3.5	-3.5
Exceedance EIAR Night-time Limit, dB	-14.3	-12.6	-5.9	-2.6	-1.5	-1.5	-1.5	-1.5
Exceedance of WTN Level Above Day-time Background Noise	6.7	7.4	11.1	11.4	9.5	6.5	3.5	2.5
Exceedance of WTN Level Above Night-time Background Noise	9.7	10.4	15.1	16.4	13.5	9.5	4.5	-0.5
<b>NSL422 - Predicted Wind Turbine Noise L90, dB(A)</b>	28.7	30.4	37.1	40.4	41.5	41.5	41.5	41.5
Exceedance LCCC Upper Day-time Limit, dB	-11.3	-9.6	-2.9	<b>0.4</b>	<b>1.5</b>	<b>1.5</b>	-1.5	-2.5
Exceedance LCCC Lower Day-time Limit, dB	-6.3	<b>-4.6</b>	<b>2.1</b>	<b>5.4</b>	<b>4.5</b>	<b>1.5</b>	-1.5	-2.5
Exceedance LCCC Night-time Limit, dB	-9.3	-7.6	<b>-0.9</b>	<b>2.4</b>	<b>3.5</b>	<b>3.5</b>	-0.5	-5.5
Exceedance EIAR Day-time Limit, dB	-11.3	-9.6	-2.9	<b>0.4</b>	-3.5	-3.5	-3.5	-3.5
Exceedance EIAR Night-time Limit, dB	-14.3	-12.6	-5.9	-2.6	-1.5	-1.5	-1.5	-1.5
Exceedance of WTN Level Above Day-time Background Noise	8.4	14.1	14.4	12.5	9.5	6.5	3.5	2.5
Exceedance of WTN Level Above Night-time Background Noise	11.4	17.1	18.4	17.5	13.5	9.5	4.5	-0.5

There are expected to be marginal exceedances of the predicted wind turbine noise above the EIAR day-time noise criteria without any mitigation (up to 0.4 dB at 6 m/s for NSL370 and NSL422). Greater exceedances are expected based on the LCCC interpreted day-time noise

criteria (up to 5.4 dB above the lower noise fixed limit at 6 m/s for NSL370 and NSL422 and up to 1.5 dB above the upper noise fixed limit at 6 m/s for the same NSLs) and night-time noise criteria (up to 3.5 dB above at 7 and 8 m/s).

Arguably a day-time fixed noise limit below the upper 40 dB(A) limit should apply given that there is up to a 14 dB difference between the predicted wind turbine noise and background noise at low to moderate wind speeds (at 5 m/s). The predicted wind turbine noise levels will potentially be up to 18 dB above background noise at night-time. These are levels that will be perceived as greater than a doubling of loudness above background noise outdoors by the average listener (nearly a quadrupling of loudness at night-time).

It is recommended that the LCCC approach to setting noise limits is adopted and that noise mitigation measures are identified to ensure that predicted wind turbine noise levels do not exceed those new noise limits.

### **Special Audible Characteristics**

Special audible characteristics (SACs) including tones, amplitude modulation (AM), low frequency noise (LFN) and infrasound are discussed in the EIAR as well as a summary of applicable guidance for their assessment. It is not possible to predict the occurrence of any SACs, if they occur, at the planning stage and also without knowing the final turbine type (for tones). It is recommended in the EIAR that *post-construction monitoring programmes and campaigns following prescribed guidelines can objectively investigate these characteristics and appropriate mitigation measures can be identified and implemented at that time.*

It is recommended by LCCC that if any planning is granted then a condition should be attached to support the Planning Authority and require the investigation of special audible characteristics (including amplitude modulation, low frequency noise and tones) in the event of a complaint regarding any or all of those characteristics.

### **Construction Noise**

The EIAR indicates the consideration of the use of *BS 5228-1:2009 + A1:2014 Code of practice for noise and vibration control on construction and open sites - Part 1 (Noise)* for the control of construction and decommissioning noise, specifically the 'ABC Method' in Annex E. It is likely that a day-time noise limit of 65 dB(A) Leq will apply (Category A values) over much of the study area based on the background noise monitoring results. This is a limit that will be approximately 35 dB greater than the lowest background noise levels at noise sensitive locations. Even though a pragmatic approach needs to be taken for construction noise, because it is transitory, it is arguable that if it is permitted to be 35 dB above background noise levels it might have a significant adverse effect at the nearest noise sensitive properties.

While the EIAR indicates that the construction and decommission processes of wind farms will not likely have an adverse impact, the types activities outlined in the Draft WEDG (2019) are similar in nature to mineral extraction, rather than conventional construction activity. It is also indicated in *BS 5228-1:2009 + A1:2014* that where construction works involve long-term and substantial earth moving then the civil works are more akin to surface mineral extraction than to conventional construction activity (Section E.5) and that the use of Mineral Policy Statement 2 needs to be taken into account when setting noise criteria for acceptability. Types of construction and decommissioning works that are identified in the Draft WEDG (2019) include:

- Ground disturbance during construction including excavation of soil and rock;

- Management and treatment of rock and soil excavated during construction work (e.g. crushing);
- Storage and transfer of material, including use of bunded storage areas for use during construction and operational phases to avoid any pollution of surface or ground waters;
- Construction of site access tracks for removal of excavated material, and importation of materials, machinery and construction of hardstandings;
- Reinstatement of the site where construction works result in ground disturbance/surface damage or erosion

It is suggested in *BS 5228-1:2009 + A1:2014* that a limit of 55 dB *L<sub>Aeq,1hr</sub>* should be adopted for day-time construction noise for these types of activities where the works are likely to occur for a period greater six months. The length of time of the construction stage for a wind farm depends on the size and complexity of a project. If it is considered that construction or decommissioning will last for a period of six months or longer the planning authority recommends that a day-time limit of 55 dB *L<sub>Aeq,1hr</sub>* should be conditioned. at noise sensitive locations.

### **Operational Compliance Monitoring**

It is the opinion of LCCC that the background noise levels from noise monitoring location NML4 is possibly not representative of background noise in the external amenity of dwellings nearby.

Background noise levels are required for the assessment of compliance if operational noise levels exceed the noise criteria and specific noise levels need to be determined. If operational wind turbine noise levels (background + specific noise levels) exceed the noise criteria then background noise levels are logarithmically subtracted from the operational noise levels to establish noise levels specifically from the turbines. However, if background noise levels are higher than they actually are then the specific noise levels will be calculated as artificially low i.e. specific noise levels will be below their real value.

In the event of an assessment of compliance at noise sensitive locations then background noise data from NML4 should not be used to determine specific noise levels for dwellings nearby. Background noise monitoring to the southeast of the proposed development should be undertaken again or it should be agreed that the nominal background noise levels in the EIAR will be used to determine specific noise levels where necessary in the assessment of operational compliance.

### **Recommendations**

The planning authority recommends that the following further information is requested:

- Clarify the consistency of the geographical projections used for all input and export files for the noise calculation model to ensure the accuracy of predicted sound levels at noise sensitive locations and the noise contour plot in Appendix 13E.
- Clarify the temporal periods used to filter background noise data for the noise monitoring locations. If they do not meet the recommendations of the *Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise* (GPG) then it is recommended that the determination of background noise levels are recalculated. It is noted that background noise levels from noise monitoring location NML4 (immediately adjacent to vegetation) are expected to be higher than representative of typically low levels in the vicinity of dwellings at the southeast of the study area at higher wind speeds.

- Review the impact on the coefficient of determination ( $R^2$  value) and noise levels at higher wind speeds by applying a fourth order polynomial to the night-time background noise regression curves.
- The Wind Energy Development Guidelines (WEDG, 2006) reference ETSU-R-97 for the determination of noise limits. It is the planning authority's opinion that the day-time wind turbine noise limits should be derived being consistent with the ETSU-R-97 approach. The implication of a *low noise environment* is that for the wind speeds that the background noise is less than 30 dB(A) L90 the absolute noise limit should be between 35 and 40 dB(A) L90 but otherwise the noise limit should not be 5 dB above background noise (Figure 3 of main report above).
- There is a discrepancy between the two terms "*areas of low background noise*" in the EPA's *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities* (NG4) and "*low noise environment*" in the WEDG (2006) although they sound similar. The approach to set the day-time lower noise fixed limit at 40 dB(A) L90 is flawed though because the criteria for "*areas of low background noise*" in NG4 is that the background noise level shall be greater or less than 40 dB(A) L90 which is 10 dB above the "*low noise environment*" criteria in the WEDG. It is the planning authority's opinion that the approach in ETSU-R-97 should be used to derive the day-time lower noise fixed limit between 35 and 40 dB(A) L90.
- Clarify the method used to convert the hub height sound power levels to 10 metres standardised height for the candidate wind turbines.
- Mitigation measures should be identified to ensure that wind turbine noise limits will not exceed any new day-time and night-time noise limits at any noise sensitive locations.
- Clarify the proposed period of construction for the proposed wind energy development. If works are proposed to last for a period of six months or longer the planning authority recommends that a day-time limit of 55 dB *LAeq,1hr* will apply at noise sensitive buildings.
- Background noise monitoring at the southeast of the proposed development should be undertaken again or it should be agreed that the nominal background noise levels (the lowest background noise levels in the study area) will be used to determine specific noise levels where necessary in the assessment of operational compliance at noise sensitive locations.

The above work shall be undertaken by a suitably qualified acoustic engineer.

### **Further Recommendations**

Further recommendations to support the planning authority assess compliance in the event of any planning being granted include that:

- The technical specification of the final selected turbines to be agreed with the planning authority before construction commences, including details of the potential for audible tones.
- The sound power of the final wind turbines selected is not greater at any wind speed than the candidate turbines used for the noise assessment in the EIAR.
- In the event of a noise complaint that the planning authority should have access to wind farm operational data (details to be agreed with the Planning Authority).
- In the event of the planning authority notifying the operator of a complaint regarding noise levels and/or special audible characteristics the operator will be required to engage a suitably qualified acoustic engineer to prepare a noise monitoring protocol to be agreed with the planning authority within a specified timeframe. In the event of a complaint the planning authority shall have the discretion to require temporary switching on and off of turbines during hours, specified by the planning authority, to allow for testing to take place for noise monitoring purposes.

## **Shadow Flicker**

An assessment has been carried out to establish sensitive buildings where shadow flicker may exceed recommendations in the WEDG (2006), that is exposed to 30 hours per year or 30 minutes per day of shadow flicker per day. Based on a worst-case scenario it is reported that *“the 30-hour threshold limit per year may be reached or exceeded at 100 locations”* and that *“Theoretically 99 houses are expected to exceed the 30-hour threshold limit per year and 126 are expected to exceed the 30-minute threshold per day”*. Table 15.2 includes the maximum (worst-case) hours per day of shadow flicker, maximum minutes per day of shadow flicker and what is termed a realistic maximum hours per day of shadow flicker (29% of the maximum hours per day of shadow flicker – no reference is made to where the 29% originates). This realistic model assumes that *“In reality the sun is not always visible and often covered by clouds and therefore, the actual number of shadow flicker hours that a receptor experiences is lower than what the conservative software model simulate”* as well as other factors such as wind turbine operational conditions and the potential for screening by vegetation. However, the assumption does not take account of days that the sun is not covered by clouds and operational conditions (e.g. the directions the turbines are facing) and vegetation are such that the worst-case does occur. It is proposed that mitigation measures will be implemented to ensure shadow flicker meets the requirements of the WEDG (2006) for the 99 properties referred to above. However, it is not clear whether the proposed mitigation is based on ameliorating the worst-case scenario or the realistic scenario. The scenario termed *realistic* may not protect sensitive locations on days where the worst-case scenario does occur (e.g. 100% sunshine including worst-case operational and non-vegetation screening conditions). It is noted in the EIAR that *“Should the Draft Revised Wind Energy Development Guidelines (2019) be formally adopted, the same control system can be adapted to meet the updated requirements”*.

## **Recommendation**

The LDP 2022-2028 indicates that cognisance should be had to the WEDG (2006) and Draft Revised Wind Energy Development Guidelines (2019). The planning authority recommends that measures to provide for automated turbine shut down to eliminate shadow flicker at any nearby dwelling, including for the period of time it takes for the blades to stop rotating after turbines are shut-down should be required as a condition of any grant of permission.

**(7) Council Environment Section (Air, Dangerous Structures, Noise, Public Health and Water Pollution)** (report dated 21/10/2025) – The Environment Section have reviewed both the Environmental Impact Assessment (EIA) Report and the Appropriate Assessment (AA) Screening Report and note the references to:

- a) "Uncontrolled releases of sediments and/or other pollutants to air due to earthworks" and
- b) "elevated levels of noise, airborne particles, and ground disturbance associated with excavation, rock blasting, drilling, or similar groundworks" at the construction stage.
- c) No air pollution or air quality issues are anticipated during the operational phase.

Given the above, subject to best practice being followed at the construction phase, the Environment Section no further observations at this time.

**(8) Council Fire Service** (report dated 21/10/2025) – The Fire Service has no objection to this planning application.

See Appendix 1 for Internal Reports.

## Visual Amenity

The subject site is located LCA 01 Agricultural Lowlands – Farming landscape, defined by regular field boundaries, well developed hedgerow system, generally flat with prominent hills and ridges. Where Specific Objectives apply. In particular Specific Objective d) encourages the regular arrangement of turbines with equal spacing in proposed wind farm developments, which take field boundaries into account.

Chapter 12 of the EIAR notes that several other Limerick LCA's are located within the Study Area, as follows:

- 'LCA 02 Ballyhoura / Slieve Reagh' to c. 6km south of the Proposed Development.
- 'LCA 04 Knockfierna' is located approximately c.12km from the Site to the west.
- 'LCA 09 Tory Hill' is located c.6km to the northwest.
- 'LCA 05 Lough Gur' located 3.5km to the northeast of the Site
- 'LCA 06 Shannon ICZM' located 13km north of the Site
- 'LCA 12 Southern Environs' of Limerick City located 14.5km north of the Site

In addition, while there are no immediate views and prospects directly towards the Site. The closest view to the Site is the Lough Gur view, located approximately 4.6 km northeast of the Site. Other notable scenic views include:

- The view from local roads in the vicinity of Tory Hill, approximately 7 km northwest of the Site.
- The Kilfinane Scenic Drive view, approximately 13.2 km southeast of the Site.
- The Castleoliver Scenic Drive view, approximately 12.6 km southeast of the Site.

In support of the application, the applicants have carried out a detailed landscape impact assessment and have included photomontages from surrounding areas with a total of 22 (VRP) from representative / sensitive visual receptor locations. Some viewpoints of particular note include (VP10) Dromin Graveyard and (VP11) Local Road at Dromin North where a Substantial-moderate/ Negative / Long Term visual impact is noted. Overall landscape sensitivity of the central Study Area (within 5km of the site) is deemed to be Medium-low as the landscape is considered to be relatively homogenous in terms of its consistent gently rolling terrain and agricultural farmland land cover with occasional patches of commercial forestry. The Morningstar River corridor is a natural and scenic feature that passes through the Site and Drommin Church and graveyard is a notable heritage feature, but neither is particularly remarkable in terms of its contribution to the landscape character of the area.

In terms of the wider study area (>5km) it is noted that much of this wider landscape is contained in the 'Agricultural Lowlands' LCA, key exceptions are separate and more sensitive LCAs associated with the Lough Gur archaeological complex around 6km to the northeast and Tory Hill a similar distance to the northwest. Both of these LCAs are also circumnavigated by designated scenic routes and classified as 'Unsuitable for wind energy development'. The Knockfierna LCA is c.12km to the west of the Site and although it does not host a designated scenic route it is also deemed unsuitable for wind energy development as is the Shannon ICZM in the northern periphery of the study area. Whilst the landscape associated with Lough Gur, Tory Hill, Knockfierna and the Shannon corridor is considered to have a comparatively high landscape sensitivity as a result of their comparative scenic, recreational, and heritage values, the landscape sensitivity of the Wider Study Area is deemed to retain an underlying Medium-Low sensitivity.

It is noted that the majority of the site is located in 'Preferred Areas' for Wind Energy Locations in the Development Plan and in this regard, Objective CAF O30 states that is an objective of the Council to promote the location of wind farms and wind energy infrastructure in the 'preferred areas'. However, there are concerns in relation to potential visual impact on the form and setting

of a number of archaeological sites, protected structures and Architectural Conservation Areas including the Bruff, Kilmallock and Lough Gur Architectural Conservation Areas.

In terms of archaeology, the proposed development has a very large footprint. Within the site there is an estimated 8.3km of new access track at a minimum width of 5m (on straight stretches), larger splays on curves and at 9 new entrances, upgrade of 0.5km of existing track (500m x 2m); the floated track is likely to require top soil strip (2km x 5m). Hardstand represents 168,000 sqm, turbine bases 9,737sqm, construction compounds 7,500sqm, deposition areas 87,377sqm, borrow pit 60,700sqm. In addition, there is the footprint of the meteor mast and the substation as well as the trenches & settlement tanks |& other infrastructure for waste, foul & potable water. Finally there is the removal of 1,578m of hedgerow and clear-felling of 14.4ha of forestry as well as the replacement of 14.4ha of new planting. Within the site the large scale items represent direct ground disturbance of a very conservative 52ha, not including the 14.4 replacement planting. In addition there is 26km of ducting to join the grid mainly along public roads, estimated to excavate 24,840 cubic metre of material.

The development is located in an area of high archaeological density, there are over 200 monuments included in the 3km catchment of the development and 31 within the red line boundary. The classification and morphology of many of the Bronze Age sites (over 80 in number) in particular, would indicate that there is a high probability of the proposed development disturbing a large amount of previously unrecorded material. The Framework and Principles for the Protection of the Archaeological Heritage, sets out the basic principles of national policy on the protection of the archaeological heritage. It states 'Preservation insitu must always be the first option to be considered rather than preservation by record in order to allow development to proceed, and preservation in-situ must also be presumed to be the preferred option' (p.24). It is worth restating that the remains of our ancestors are a finite resource and archaeological excavation represents controlled destruction of these sites, with the tools available currently.

In making a decision in regard to this development, it should be questioned whether the potential destruction, disturbance and other impacts on the archaeological landscape is balanced by the gains from the development, or whether the development would be better relocated to a less sensitive environment. In the event that permission is granted, archaeological conditions are recommended and are included in Appendix 1 below:

In terms of architectural and cultural heritage, Figure 14-5 and the associated Table 14-10, 'NIAH and RPS Structures within 3km study zone', appears to have omitted a number of Protected Structures, including several within the vicinity of the proposed development site. These include:

- Reg. No. 650 – Rathcannon Castle
- Reg. No. 652 – Rathcannon House
- Reg. No. 575 – Maidstown Castle and Maidstone House
- Reg. No. 532 – De Valera Cottage
- Reg. No. 670 – Rockbarton House
- Reg. No. 669 – Rockbarton Outbuildings
- Reg. No. 454 – Glebe House
- Reg. No. 467 – Kilballyowen
- Reg. No. 53 – Summer Ville
- Reg. No. 339 – Dromin Church
- Reg. No. 336 – Tierney's
- Reg. No. 337 – Fair Green
- Reg. No. 192 – Bulgaden Castle

Reg. No. 190 – Creamery  
Reg. No. 99 – St Mary’s Church  
Reg. No. 1704 – Bantard House  
Reg. No. 711 – Cotter’s  
Reg. No. 1040 – McMahan’s  
Reg. No. 1034 – St. Munchin’s Church  
Reg. No. 1035 – Health Centre  
Reg. No. 1036 – Former School  
Reg. No. 1037 – Briar Cottage  
Reg. No. 1039 – Bridge  
Reg. No. 1038 – Creamery  
Reg. No. 1041 – Church  
Reg. No. 1043 – Bruree Lodge  
Reg. No. 559 – Glebe Castle  
Reg. No. 558 – Bruree Castle  
Reg. No. 463 – Howardstown Bridge  
Reg. No. 29 – Glebe House  
Reg. No. 30 – Kilbroney Church  
Reg. No. 28 – Athlacca Bridge  
Reg. No. 210 – Cahir-Guillamore

These missing Protected Structures should be added to the map in Figure 14-5, and potential impacts on these Protected Structures and their settings should be assessed if they are within 3km of the closest point of the proposed development site.

The assessment/Chapter 14 refers to the DEHLG Historic Gardens and Designed Landscapes survey (the NIAH Garden Survey), however it does not identify any sites included on this survey within the study area. The proposed development site appears to be located partly within a designed landscape (Summer Ville – Reg. No. 1561). There are further NIAH Garden Survey sites within the study area, including:

Greenpark House (Reg. No. 1565)  
Bulgaden Hall (Reg. No. 1569)  
Glebe House (Reg. No. 1521)  
Tullerboy Cottage (Reg. No. 1516)  
Castle Ievers (Reg. No. 1517)  
Green Lawn (Reg. No. 1553)  
Camas House (Reg. No. 1556)  
Clorane House (Reg. No. 1518)  
Rockbarton House (Reg. No. 1562)  
Milltown George (Reg. No. 1571)  
Milltown Lodge (Reg. No. 1572)  
Kilballyowen House (Reg. No. 1577)  
Cahir Guillamore (Reg. No. 1557)

The potential indirect/visual impacts of the proposed wind farm development on these designed landscapes should be assessed. Similarly, the potential impacts of the development on views from the Bruff, Kilmallock and Lough Gur Architectural Conservation Areas should be assessed with regard to the historic architectural character of these areas.

The applicant should have due regard to the relevant policies and objectives in the Limerick Development Plan 2022-28 relating to the Architectural Heritage and Historic Gardens/Landscapes – including Policy EH P9, Objective EH O50, EH O52 and EH O53.

Architectural heritage assets along the route of the proposed Grid Connection and Turbine Delivery Route are described in Sections 14.4 and 14.5 of the EIAR., however insufficient assessment of the potential impacts on these assets is provided, particularly with regard to historic bridges that the routes will cross. The Grid Connection Route and Turbine Delivery Route may impact two historic stone bridges – Ferry Bridge (RPS Reg. No. 257) and Sixmile Bridge (RPS. Reg. No. 455). Details of the mitigation measures that will be put in place to protect these bridges (and any other historic bridges along the route) should be submitted. The EIAR and LVIA do not include consideration of all cultural heritage assets within the wider setting, as outlined above. In this regard, it is recommended that further information be sought, to adequately assess the potential impacts of the proposed development on the architectural heritage and designed landscapes of the wider context.

In addition, given the height and scale of the turbines as proposed there are concerns that the development would have a negative impact on landscape and visual impact, both locally and over greater distances from houses, roads, villages, and amenity locations and in particular the two named VRPs named above. Section 28 Guidelines on Wind Energy in 2006 also defined large turbines as over 100m to blade tip whilst recognising that turbine heights will change over time. It is clear that the heights of the turbines as now proposed are not representative of the range of turbines identified in the 2006 Guidelines.

In light of the above, there are concerns in respect of this development from a visual amenity perspective.

### Residential Amenity

#### *Shadow Flicker*

The analysis is noted in terms of shadow flicker as set out in Section 14 of the EIAR, whereby all turbines, identified as 150m in height with the exception of T6 which is 160m in height, were assessed. The Study Area is defined as 10 times the widest possible potential rotor diameter within the range (10 x 136m = 1,360m), I note the study area is identified as being 1.36km in Chapter 15 of the EIAR which is acceptable. It is noted that there are 228 dwelling receptors within the identified 1.36km radius of turbines, whereby 99 dwellings are expected to exceed the 30-hour threshold limit per year and 126 are expected to exceed the 30-minute threshold per day. However, applying the ‘real world’ scenario i.e. actual sunshine hours it is noted that 8 sensitive receptors (3.5%) could experience a maximum of more than 30 minutes of shadow flicker per day, while 1 sensitive receptors (0.45%) could be exposed to over 30 hours of shadow flicker per year which exceeds the 2006 Guidelines recommendation of 30 minutes per day/ 30 hours per year and the Draft 2019 Guidelines which aim to eliminate negative shadow flicker. I note that no details of the Met Éireann observatory weather station used in identifying the real world scenario has been submitted, this should be queried.

In relation to the above, mitigation measures proposed including the implementation of a programmable shadow flicker control system during periods of potential shadow flicker to mitigate against adverse shadow flicker effects experienced at any sensitive receptor within the Study Area (allowing for a short period of time for the rotor to come to a stop). It is noted that this mitigation measure will ensure the proposed development will be fully compliant with the 2006 Wind Energy Guidelines, and no residual significant effects on human health or population are expected. In addition, it is noted in the EIAR that “Should the Draft Revised Wind Energy Development Guidelines (2019) be formally adopted, the same control system can be adapted to meet the updated requirements”. The development would therefore not only compliant under current policy but also future-proofed for alignment with forthcoming regulatory changes.

In terms of the above, this realistic model used assumes that *“In reality the sun is not always visible and often covered by clouds and therefore, the actual number of shadow flicker hours that a receptor experiences is lower than what the conservative software model simulate”* (EIAR S.15.3.5, page 15-7) as well as other factors such as wind turbine operational conditions and the potential for screening by vegetation. However, the assumption does not take account of days that the sun is not covered by clouds and operational conditions (e.g. the directions the turbines are facing) and vegetation are such that the worst-case does occur. It is proposed that mitigation measures will be implemented to ensure shadow flicker meets the requirements of the WEDG (2006) for the 99 properties referred to above. However, it is not clear whether the proposed mitigation is based on ameliorating the worst-case scenario or the realistic scenario. The scenario termed realistic may not protect sensitive locations on days where the worst-case scenario does occur (e.g. 100% sunshine including worst-case operational and non-vegetation screening conditions).

In this regard, the Limerick Development Plan 2022-2028 indicates that cognisance should be had to the WEDG (2006) and Draft Revised Wind Energy Development Guidelines (2019). It is therefore recommended that measures to provide for automated turbine shut down to eliminate shadow flicker at any nearby dwelling, including for the period of time it takes for the blades to stop rotating after turbines are shut-down should be required as a condition of any grant of permission.

In terms of cumulative effects (cumulative shadow flicker effects could arise if dwellings are at risk from potential shadow flicker effects as a result of more than one wind farm) the EIAR notes that in line with IWEA Guidelines, there are no proposed or operational wind farm within a 8km range of the turbines that may cause cumulative effects. The nearest operational wind farm is the Glenbrohane Wind Farm (John Clery) c.15 km from the proposed development and the nearest proposed wind farm located c.8.2km away (Garrane Wind Farm).

### *Noise*

The 2006 guidelines state that noise is unlikely to be a significant problem where the distance from the nearest turbine to any noise sensitive property is more than 500 metres. In this case it is noted in Chapter 13 of the EIAR that there are 519 no. noise sensitive receptors in the identified study area the subject site. However, it is not clear whether the study area includes the 500m prescribed in the 2006 guideline, this should be clarified.

As part of the noise assessment methodology a total of 6 no. residential noise monitoring locations were examined in order to determine background noise. Windspeed data was measured using a Lidar wind sensor and was standardised to a height of 10m. These results were then used to model predicated noise levels at all properties within the study area. The analysis also includes the cumulative impact. The EIAR notes that the predicted cumulative noise levels from the proposed development, when combined with the noise emissions from the schedule of other wind farms identified in the wider area, were below the noise limit criteria at all noise sensitive receptors with the exception of 6no. of the closest dwellings where the criteria was exceeded by up to 0.8dB. Of these, 3 no. are financially involved in the proposed development and it was therefore considered appropriate to add 5dB to the applicable noise limits at these noise sensitive receptors (as set out in Section 13.2.2.5 of the EIAR), it was therefore considered that there would be no exceedance for these 3 no. noise sensitive receptors. Of the remaining 3no. noise sensitive receptors (not financially involved in the project), the Daytime Amenity limit is exceeded at the 6m/s wind speed bin by 0.1dB and 0.4dB. This is considered a marginal exceedance based on a worst-case with the sensitive receptors simultaneously downwind of all wind turbines (an impossible scenario). Noise levels are noted as being below the limit at wind speeds less than 5m/s and greater than 7m/s.

Noise levels do not exceed the night-time criteria at any wind speed. In this regard it is noted that there is an error in the mapping of at least one of the proposed wind turbines, T9, and potentially the other proposed turbines in Figure 13-1, chapter 13 of the EIAR. The geographic coordinates of the input and output files for the noise models should be reviewed as the error may compromise the accuracy of calculations at noise sensitive locations.

Having regard to the chosen Noise Monitoring locations, background noise levels at noise monitoring locations NML4 are probably higher than representative for typical low levels in the vicinity of dwellings in the southeast of the study area for higher wind speeds. Therefore, the background noise levels from noise monitoring location NML4 is not representative of background noise in the external amenity of dwellings nearby.

In this regard, background noise levels are required for the assessment of compliance if operational noise levels exceed the noise criteria and specific noise levels need to be determined. If operational wind turbine noise levels (background + specific noise levels) exceed the noise criteria then background noise levels are logarithmically subtracted from the operational noise levels to establish noise levels specifically from the turbines. However, if background noise levels are higher than they actually are then the specific noise levels will be calculated as artificially low i.e. specific noise levels will be below their real value. Therefore, in the event that a grant of planning is considered, then background noise from monitoring location NML4 should not be used to determine specific noise levels for nearby dwellings for the assessment of operational compliance. Ideally, and it is recommended, that a background noise monitoring survey should be undertaken again for the southeast of the study area, or the nominal background criteria used in the determination of specific noise levels.

In terms of the proposed noise limits, there is a discrepancy between those set out in the Limerick Development Plan 2022-2028 and the EIAR interpretations for setting of noise limits for day- and night-time. The proposed noise limits will potentially allow turbine noise levels to be significantly above background noise at night-time and day-time at moderate wind speeds (up to 18 dB and 14 dB, respectively, downwind at wind speeds of 6 m/s). New noise limits should be derived, consistent with the Wind Energy Guidelines 2006 and ETSU-R-97 (which is referenced in the Wind Energy Guidelines 2006) for day-time (particularly for the setting of the fixed noise limits in *low noise environments* between 35 and 40 dB(A) L90 followed by a limit of 5 dB above background noise) and the Limerick Development Plan 2022-2028 for night-time, and an assessment of any expected exceedances based on the calculated noise levels. Proposals should be submitted for mitigation measures to ameliorate exceedances of the noise criteria where they may exist.

In terms of Special audible characteristics including amplitude modulation (AM), low frequency noise (LFN) and infrasound are discussed in the EIAR. However, there is no consideration of tones and the discussion regarding infrasound and LFN is ambiguous. It is not possible to predict the occurrence of any Special audible characteristics, if they occur, at the planning stage and also without knowing the final turbine type (for tones). It is recommended that if any planning is granted then a condition should be attached that requires the investigation of special audible characteristics (including amplitude modulation, low frequency noise and tones) in the event of a complaint regarding any or all of those characteristics.

In terms of construction noise, the EIAR specifies the use of *BS 5228-1:2009 + A1:2014 Code of practice for noise and vibration control on construction and open sites - Part 1 (Noise)* for the control of construction and decommissioning noise, specifically the 'ABC Method' in Annex E. It is likely that a day-time noise limit of 65 dB(A) Leq will apply (Category A values) over much of the study area based on the background noise monitoring results. This is a limit that will be approximately 35 dB greater than the lowest background noise levels at noise

sensitive locations. Even though a pragmatic approach needs to be taken for construction noise, because it is transitory, it is arguable that if it is permitted to be 35 dB above background noise levels it might have a significant adverse effect at the nearest noise sensitive properties.

While the EIAR indicates that the construction and decommission processes of wind farms will not likely have an adverse impact, the types activities outlined in the Draft Wind Energy Guidelines 2019 are similar in nature to mineral extraction, rather than conventional construction activity. It is also indicated in *BS 5228-1:2009 + A1:2014* that where construction works involve long-term and substantial earth moving then the civil works are more akin to surface mineral extraction than to conventional construction activity (Section E.5) and that the use of Mineral Policy Statement 2 needs to be taken into account when setting noise criteria for acceptability. Types of construction and decommissioning works that are identified in the Draft WEDG (2019) include:

- Ground disturbance during construction including excavation of soil and rock;
- Management and treatment of rock and soil excavated during construction work (e.g. crushing);
- Storage and transfer of material, including use of bunded storage areas for use during construction and operational phases to avoid any pollution of surface or ground waters;
- Construction of site access tracks for removal of excavated material, and importation of materials, machinery and construction of hardstandings;
- Reinstatement of the site where construction works result in ground disturbance/surface damage or erosion

It is suggested in *BS 5228-1:2009 + A1:2014* that a limit of 55 dB *L<sub>Aeq,1hr</sub>* should be adopted for day-time construction noise for these types of activities where the works are likely to occur for a period greater six months. The length of time of the construction stage for a wind farm depends on the size and complexity of a project. If it is considered that construction or decommissioning will last for a period of six months or longer the planning authority recommends that a day-time limit of 55 dB *L<sub>Aeq,1hr</sub>* should be conditioned. at noise sensitive locations.

Having regard to the above, the following further information should be requested prior to consideration of any grant of permission:

- Clarify the consistency of the geographical projections used for all input and export files for the noise calculation model to ensure the accuracy of predicted sound levels at noise sensitive locations and the noise contour plot in Appendix 13E.
- Clarify the temporal periods used to filter background noise data for the noise monitoring locations. If they do not meet the recommendations of the *Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise* (GPG) then it is recommended that the determination of background noise levels are recalculated. It is noted that background noise levels from noise monitoring location NML4 (immediately adjacent to vegetation) are expected to be higher than representative of typically low levels in the vicinity of dwellings at the southeast of the study area at higher wind speeds.
- Review the impact on the coefficient of determination ( $R^2$  value) and noise levels at higher wind speeds by applying a fourth order polynomial to the night-time background noise regression curves.
- The Wind Energy Development Guidelines (WEDG, 2006) reference ETSU-R-97 for the determination of noise limits. It is the planning authority's opinion that the day-time wind turbine noise limits should be derived being consistent with the ETSU-R-97 approach. The implication of a *low noise environment* is that for the wind speeds that the background noise is less than 30 dB(A)  $L_{90}$  the absolute noise limit should be

between 35 and 40 dB(A) L90 but otherwise the noise limit should not be 5 dB above background noise (Figure 3 of main report above).

- There is a discrepancy between the two terms “*areas of low background noise*” in the EPA’s *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities* (NG4) and “*low noise environment*” in the WEDG (2006) although they sound similar. The approach to set the day-time lower noise fixed limit at 40 dB(A) L90 is flawed though because the criteria for “*areas of low background noise*” in NG4 is that the background noise level shall be greater or less than 40 dB(A) L90 which is 10 dB above the “*low noise environment*” criteria in the WEDG. It is the planning authority’s opinion that the approach in ETSU-R-97 should be used to derive the day-time lower noise fixed limit between 35 and 40 dB(A) L90.
- Clarify the method used to convert the hub height sound power levels to 10 metres standardised height for the candidate wind turbines.
- Mitigation measures should be identified to ensure that wind turbine noise limits will not exceed any new day-time and night-time noise limits at any noise sensitive locations.
- Clarify the proposed period of construction for the proposed wind energy development. If works are proposed to last for a period of six months or longer the planning authority recommends that a day-time limit of 55 dB *L<sub>Aeq,1hr</sub>* will apply at noise sensitive buildings.
- Background noise monitoring at the southeast of the proposed development should be undertaken again or it should be agreed that the nominal background noise levels (the lowest background noise levels in the study area) will be used to determine specific noise levels where necessary in the assessment of operational compliance at noise sensitive locations.

Further recommendations to support the Planning Authority assess compliance in the event of planning permission is granted include that:

- The technical specification of the final selected turbines to be agreed with the planning authority before construction commences, including details of the potential for audible tones.
- The sound power of the final wind turbines selected is not greater at any wind speed than the candidate turbines used for the noise assessment in the EIAR.
- In the event of a noise complaint that the planning authority should have access to wind farm operational data (details to be agreed with the Planning Authority).
- In the event of the planning authority notifying the operator of a complaint regarding noise levels and/or special audible characteristics the operator will be required to engage a suitably qualified acoustic engineer to prepare a noise monitoring protocol to be agreed with the planning authority within a specified timeframe. In the event of a complaint the planning authority shall have the discretion to require temporary switching on and off of turbines during hours, specified by the planning authority, to allow for testing to take place for noise monitoring purposes.

### Traffic & Transport

The turbine delivery routes include the delivery of turbine components from Shannon Foynes Port in Co. Limerick to the wind farm site. The routes would involve the following:

#### (1) Port of Foynes

- National Road network (N69, N18, M20, N20 and R516),
- Construction of a temporary access track approximately 250m in length at Tullovin Bridge.

- Transported via public road network using abnormal load vehicles between the landing port and Site Entrance 8 and Site Entrance 9, avoiding the Tullovin bridge, and both are off the R-516.
- Approximately 160 - 180 deliveries are expected, mostly at night over a c.6-month construction period.

The turbine components will be transported on the public road network using abnormal load vehicles between the landing port and Site Entrance 8 and Site Entrance 9 on the R516, avoiding the Tullovin bridge. The longest components are the turbine blades which are usually the most onerous for delivery.

Chapter 16 Material Assets Traffic and Transportation of the submitted EIAR states that the delivery of road construction materials, concrete for turbine foundations, building materials, drainage, ducting and cables and grid connection route works will be carried out using standard heavy goods vehicles (HGV). Delivery of turbine components will be carried out using specialist abnormal load vehicles. Turbine blades will be delivered on an extendable semi-trailer, one per trailer. The turbine blades will be 68m long, approximately 12m of the blade will overhang the rear of the trailer. Following delivery to the Site, the trailer will be retracted for the return trip. Each turbine tower will be delivered to site in sections using tower clamps and extendable semi-trailers. Standard delivery clearance area for manufacturers of this class of turbine which would typically be 6m wide. When road alignments are straight the blade delivery truck is not the most onerous in terms of width and height. For some turbines, as an example the Vestas V136, the height or width of the tower sections and the nacelle can be limiting. The bottom tower section is likely to have a bottom flange diameter of up to 4.5m. A maximum load height of 5m has been assumed for the tower sections to allow for ground and overhead clearance. Typical abnormal load vehicles used for the transportation of turbine components

Delivery route and enabling works summary:

Via. Shannon Foynes Port:

- Depart Foynes Port turn left onto the N69
  - Junction of Dock Road L6188 with N69 in Corgrig facing south-west - hedge and vegetation trimming and removal of 6 no. street signs.
- Travel along the N69 as far as the N18/N69 junction, junction #2: Dock Road.
  - 69 Ferry Bridge over the River Maigue facing east - vertical profile of bridge to be determined prior to delivery. It is noted that this route has been previously used before for the delivery of similar turbine components.
  - N69 Clarina Roundabout in Ballybrown facing east – 2 no. street signs to be removed, planter boxes to be removed/relocated and temporary access track surface required.
  - N69 Dock Road West Roundabout in Bunlicky facing north-east -2 no. street signs to be removed and temporary access track surface required.
  - N69 Dock Road East Roundabout in Ballykeefe facing north-east – 3 no. street signs to be removed, 1 no. light pole to be removed, tree/hedge trimming and/or removal required and temporary access track surface required
- Exit the junction and travel east onto the N18
  - 1<sup>st</sup> exit off the N18 at the M7/N18/M20 junction in Rossbrien facing north-east - Verge strengthening required.

- 5<sup>th</sup> exit off the M20 in junction with N21/R526 in Attyflin facing south-west – 4 no. street signs to be removed and hedge/vegetation trimming required.
- Travel along the N18 as far as the N18/M7/M20 junction, junction #3.
- Exit the junction and travel southwest onto the M20.
- Travel along the M20 as far as the M20/N21/R526 junction, junction #5: Cork.
- Exit the junction and travel south onto the N20.
- Travel along the N20 as far as the N20/R516 junction, Croom exit.
  - 1 no. street signs to be removed, 2 no. light poles to be removed, hedge/vegetation trimming required and verge strengthening required.
- Exit the junction and travel through Croom on the R516.
  - Croom Roundabout onto the R516 facing south-east – 7 no. street signs to be removed, 2 no. light poles to be removed, flower beds/hedge trimming and/or removal and verge strengthening.
- Travel along the R516 southeast as far the R516/R511 junction.
  - 3<sup>rd</sup> junction on the R516 in Croom facing north-east – 1 no. street signs to be removed, 1 no. light pole to be removed and temporary access over footpath.
  - 5<sup>th</sup> junction on the R516 where L1478 and Cois Má Avenue intersect in Croom facing north-east – 1 no. bollard to be removed, 1 no. light pole to be removed and temporary access over footpath.
  - Bend in the road around Croom United FC on the R516 in Croom facing east - Verge strengthening and flower beds/hedge trimming.
  - R516 crosses the River Camoge onto Clogghanduff Bridge in Tooreen facing south - Verge strengthening.
- Continue through the junction along the R516 for approximately 2.85km.
  - R516 reaches a junction with L8058 in Tullovin facing south-east - hedge/vegetation trimming.
  - V-shaped road with two large turns on the R516 in Tullovin facing south-east – 1 no. wall section removed, hedge/vegetation trimming and temporary access track surface required.
  - R516 intersects Ballintaw Road in Ballintaw facing east - hedge/vegetation trimming.
  - R516 heading east passing Lynchpin cottage in Carrigen/Camas North - Verge strengthening.
- Turn right at the site entrance.
- Site entrance is approximately 250m south-east from Lynchpin cottage in Carrigen – 1 no. telecom pole to be removed/relocated, 2 no. earth mounds to be removed, 2 no. concrete walls to be removed, hedge/vegetation trimming required, temporary access track surface required and temporary widening surface required.

The total length of the Turbine Delivery Route from Foynes Port to the access junction off the R516 is c.50 kms.

The turbine delivery route maps are provided at Appendix 2.

It is estimated that during the wind farm construction, 24 months overall, an approximate total of 14,714 loads of material and building supplies will be delivered and the removal of 3,105 loads from the grid connection works along the public road network to a licensed waste

facility. Peak daily numbers of heavy vehicles is 142 with 16 per hour maximum. The wind turbine abnormal loads would be delivered in consultation with Limerick City and County Council and An Garda Síochána, during off-peak traffic periods, typically at night and under Garda escort. A total of 170 vehicle deliveries would be required for the seventeen turbines in delivery convoys at nights. The expected peak staff would be up to 80 construction personnel, which would generate approximately 60 car and van trips, both to and from the site each working day, based on an average vehicle occupancy rate of 1.33 personnel per vehicle, including staff that travel in contractor vehicles. Canteen facilities for personnel will be provided on-site. Site personnel would travel to site prior to 7.00 a.m. and depart from site from 7.00 p.m., on weekdays, outside the peak traffic hours. It is envisaged that the construction crew for the proposed grid connection works would include 15 to 25 construction personnel, which are included in the foregoing expected peak construction staff. Parking for staff will be provided within the Temporary Construction Compounds which will include materials' storage/laydown areas, parking and staff facilities. Temporary construction materials' storage for the grid connection route along the public road network may be provided at existing site locations convenient to the works' locations, as the circa 24.4 kms route works progress, which would be subject to the pre-approval of the planning authority prior to the works.

The EIAR (Appendix 16A Traffic Management Plan) advises the following phasing plan for the proposed development:

- Phase 1 Clearfelling (to be complete ahead of construction site mobilisation) - 2 months
- Phase 2 Prepare site, pre-construction activities, site entrance, temporary compounds - 1 month
- Phase 3 Access track construction + Drainage plan implementation - 3 months
- Phase 4 Hard standing construction for turbines - 3 months
- Phase 5 Turbine Foundation construction - 4 months
- Phase 6 Trenching and ducting (underground electrical collection system) - 2 months
- Phase 7 Substation construction - 4 months
- Phase 8 Permanent meteorological mast erection - 1 month
- Phase 9 Turbine delivery 3 months Phase 10 Turbine erection - 4 months
- Phase 11 Commissioning - 6 months

Based on the indicative timetable outlined above the peak times for HGV deliveries to Site will be during Phase 4 to Phase 9 (months 6 to 21). Project traffic will be distributed throughout the day with morning, afternoon and evening peaks.

In terms of mitigation, a traffic management plan has been submitted and is contained in Appendix 16 of the EIAR and sets out general details of haul route, enabling works, delivery vehicle specification, permits and surveys required, emergency access, public information, construction, operation, decommissioning and traffic volumes. The appointed contractor shall compile a detailed Traffic Management Plan for the works which will specify the precise traffic management measures for each works section and submit to relevant authority for approval. The contractor will appoint a competent traffic management coordinator who will be the main point of contact for all traffic management matters during the course of the works. The agreed traffic management systems shall be installed and maintained by

operatives with the appropriate training to carry out works on traffic management systems. The final Traffic Management Plan shall be submitted to the owners engineer and Developer for review 1 month before scheduled works.

In terms of assessing the above, the following further information is recommended:

- The proposed development, particularly in construction phase, is likely to have an impact on traffic management and road condition/maintenance and in the period immediately after construction. The major element of the project involves erection of Wind Turbines, which would constitute a major and diverse construction site. The most serious impacts affecting roads relate to: -
  - Impact on traffic management in the area and delivery routes;
  - Impact on road structure and condition both during and after construction period;
  - Impact and possible after-effects on road/ site drainage.

Drawings and supporting information shall be submitted to and agreed in writing with the Planning Authority prior to the commencement of the development.

- Sightlines, Stopping Sight Distances & Forward Visibility.
  - The Applicant shall submit detailed locations of the proposed entrances for the wind farm, the submitted locations highlighted on the EIAR do not indicate the exact location of the entrances to allow the Roads Department to make an informed decision.
  - The Applicant shall submit in plan form and to scale for approval with the Planning Authority, onto a **topographical survey** with sufficient detail and background mapping to clearly demonstrate the full and relevant sightlines and stopping sight distances for all 9 number proposed site entrances. The clear sightline triangle should be assessed from a distance of 3.0 metres back from the road edge. Supporting photographs shall be submitted. This should include where required setback of the front boundary approximately 0.5m behind the sightline envelope, even when the vegetation boundary reaches maturity. Note that reducing hedge heights is not allowable and all existing boundaries are to be set back behind the sightlines as outlined. All stationary objects such as overhead services poles are to be setback behind the sightline envelope. Showing the vehicles positions would be of benefit to all when demonstrating sightlines, stopping sight distances and forward visibility.
- The Applicant is to highlight on the Site Layout Plan any boundaries that may belong to adjacent landowners that will require setback to achieve the sightlines required. These boundaries shall be shown setback and shall be highlighted and labelled on the revised drawing. Written permission to setback and maintain any boundaries outside the ownership of the applicant is required along with supporting folios and maps to demonstrate ownership.
- A Stage 1/2 Road Safety Audit shall be submitted for approval and must be completed and submitted by the Applicant to the Planning Authority for approval in compliance with the TII Publication 'Road Safety Audit GE-STY-01024'.
- The Applicant shall address all problems raised with the Stage 1, 2 and 3 Audits in full and submit revised Site Layout Plans to include the recommendations of the Audits, which must be clearly labelled for acceptance by the Planning Authority.
- Grid Connection Route:
  - Provide detailed Site-specific drawings for all Joint chamber / communication chambers / link chambers, including:
    - Plan views and cross-sections with dimensions

- Communication chambers and associated infrastructure
- All elements within the public road corridor. Existing and proposed.
- Drawings must be specific to each jointing location.
- Joint chambers shall be relocated off the public road and positioned within adjacent wind turbine farmland.
- The Applicant shall provide site specific details for all culvert / river crossings with construction methodologies.

### Natural Heritage

The application site is not within EU designations, the nearest is Glen Bog SAC (Site Code: 001430) located c. 5 km to the east of the Proposed Development, and c. 2.3 km east of the grid connection route at its nearest point. The proximity between the Lower River Shannon SAC (Site Code: 0026165) and the Proposed Development, given the inclusion of the grid connection route to the north, is c. 5.3 km at its nearest point. In addition to this physical hydrological link, albeit distant, intervening watercourses such as the River Maigue support key functional requirements for QI species. These include foraging and spawning areas for salmon and lamprey, as well as riparian corridors used by otter for commuting and feeding. Accordingly, the Lower River Shannon SAC, as well as the River Shannon and River Fergus Estuaries SPA (Site Code: 004077), are deemed to be the primary European Sites with the potential to be affected by the Proposed Development based on the Source-Pathway-Receptor model. Having regard to the above, there is potential impact via River Maigue to Lower River Shannon SAC (c.24km) and the River Shannon and River Fergus Estuaries SPA (c.40km).

In terms of the submitted NIS there are a number of concerns as follows:

It is not clear how the author could conclude that the SAC otter population presumably those associated with the Shannon would travel as far as the site. Whether they do or not is a moot point as the otter is a QI of the SAC and may well have broader range than the literature on the topic indicates. In this regard, all of the measures included in S6.3 Mitigation should be included as a condition in the event that permission is granted. In particular, the pre-construction survey for otters (and Amphibians as noted in comments on the EIAR) is regarded as essential.

There seems to be no specific mention of the Whooper Swan Management Works in the mitigation measures of the NIS, though they were mentioned in passing earlier in the document. This omission is notable and should be clarified. It is noted that this issue was dealt with in more detail in the submitted EIAR.

In terms of the submitted EIAR, the following should be noted and appropriately addressed. In terms of Chapter 6 Biodiversity, it is noted that habitat surveys took place at an optimal time i.e. during August and September 2023 and were updated in July 2025, which is consistent with good practice. Hedgerow assessment also took place, using the Hedgerow Appraisal System which is welcomed, as these can be an important habitat feature particularly on lowland sites in Limerick, as are drainage ditches.

It is noted that Bat surveys were carried out in 2023 but were not subsequently updated which means they are now over two years old. Given the mobile nature of bats and that lowland (rather than upland) wind turbine applications pose a greater risk to bats this is a gap in the ecological analysis and in my view requires a more up to date survey to ensure mitigation measures are adequately informed. The fact that badger surveys were updated in July 25 is noted (p. 6-38). The opportunity should have been taken to update the bat surveys. The inclusion of a carcass survey and post construction monitoring (which might be difficult to achieve in practice) for bats as outlined in S6.9.3.2 (p. 6-202) is a welcome addition and

should be included in any conditions. It does not make up for the two year time gap since the last assessment. This should be addressed.

Amphibian surveys and searches for frog spawn took place on 2<sup>nd</sup> of February 2023. Given that drainage ditches will be removed this survey should have been repeated this spring. Should permission be granted it is recommended that a survey of these ditches for amphibians, in particular frogs, takes place at an opportune time before development works begin. The removal of 1.3 km of drainage ditches within the development site is noted. While it is noted (Figure 6-32, p. 6-194) that new water features will be created it would be best if they could be more widely distributed throughout the site, rather than concentrated in Area 3 as shown on the map.

On page 6-62 it is noted that Whooper Swans roosting in the Lough Gur area within foraging range of the development site. Though this species has been singled out it is likely that other wild fowl species might also use the site. From the flood report it is noted that 4 turbines of the 17 total lie within Flood Zones A and B. Flooding often attracts wildfowl for which the turbines may pose a displacement or collision risk. This is an aspect of the development which merits further examination.

The potential for badger and otter disturbance is noted. See above in relation to additional water features. The construction of artificial setts (outlined in S.6.8.1.6) is welcomed.

All of the mitigation measures shown in Section 6.8 should be implemented, with as noted above, a more widely distributed network of water features such as ponds. More specific detail is required in relation to the two borrow pits mentioned, in particular during their operational phase and further examination of specific mitigation measures for these should be detailed. The employment of an EcCOW is essential to ensure mitigation measures are properly applied.

In relation to Chapter 7 Ornithology of the EIAR, it is noted that the bird surveys were comprehensive and carried out over a number of years and were less than a year old prior to submission. However, a deficiency remains in that the issue of flooding and its potential for attracting wildfowl to the development site needs further examination. The importance of flooding for wildfowl is acknowledged in the chapter (p.73) which mentions that “intermittent flooded areas within the Development site provide foraging and roosting habitat for water-dependent species, particularly during wetter periods”

It is noted that there was a concentration of Whooper Swan activity close to the site of the proposed Turbine 3, during nighttime (midnight to 1.00 AM, December 2023) which increases the collision risk.

The mitigation measures outlined in section 7.7 should be implemented in full should permission be granted. I'm unsure of how the management areas (Table 7-13 and Figure 7-8) for the whooper swans will work. On the face of it they will provide valuable habitat and for other species as well but given the swans and other species tendency for night flight and the location of the management area close to the development, this may well increase collision risk, for them and other species which may use it. This is a factor which requires further examination.

Post monitoring seems to concentrate on swans (pp.95, S7.8.2), this should be broadened to include all wildfowl species. Changed conditions on the site post development may increase the attractiveness of the area for a wider variety of bird species. Section 7.8.2.1 Collision Risk Monitoring is essential, should permission be granted and should be the subject of a specific condition.

In relation to the above, it is recommended that the gaps identified in the information provided be filled to enable assessment of the project. Such as issues as the role of flooding attracting wildfowl to the site, how the management area for whooper swans will work all need further assessment.

### Drainage

The Morningstar River flows and several minor tributary streams flow through the northern portion of the site east to west. The minor streams generally flow perpendicular to the Morningstar River. Listed from east to west these are the Killorath Stream, the Rathcannon Stream (also known as Raymondstown Stream), the Balinlee South Stream, the Ballinrea Stream, the Ballingayrou Stream, the North Balinlee Stream, Parkroe Stream and Camas South Stream. The Morningstar River ultimately confluences with the Mague River approximately 5.8km west of the site at its closest point. The proposed development will require new crossings of all watercourses within the main development site with the only exceptions being the Killorath and South Ballinlee streams.

In addition, the proposed grid connection route directly crosses the Camoge River and crosses minor headwater streams / drainage channels contributing to the Groody River. The Camoge crossing will require horizontal directional drilling as the existing road bridge is a protected structure.

In terms of surface water management on the site, the following mitigation measures are proposed.

- Surface water drainage measures, pollution control and other preventative measures to minimise significant effects on water quality and downstream designated sites.
  - Preparation of a Pollution Prevention Plan (or similar),
  - All open water bodies adjacent to areas of proposed works, including settlement ponds, will be protected by fencing. A 20m buffer will be retained for construction works. Site traffic will only be permitted within this buffer to facilitate near-stream works.
- Construction and Environmental Management Plan includes fuel and oils management, concrete management and a construction and waste management plan.
- A suitably qualified Environmental Clerk of Works (ECoW) will be appointed.

In this regard, the Planning Authority have reviewed the proposal and recommend conditions in relation to surface water management.

### Flooding

The proposed development is located partly within Flood Zone A, B and C as per the Limerick Development Plan 2022-2028, in particular, the proposed substation is located within Flood Zone C according to the flood risk assessment. In this regard, it is noted that site specific flood modelling has been undertaken by the applicant with a HEC RAS model built to determine baseline hydrological conditions and assess any post development impacts on account of the proposed development and 4 no. proposed turbines (of 17 no. total) are identified as being located within Flood Zone A and B as per Table 4.15 within submitted the flood risk assessment. The remainder of the turbines are within Flood Zone C including the proposed substation;

In this regard, having reviewed Section 4.4.5, it is unclear as to what elements the applicant is referring to will be set above the 1%AEP level plus allowance for freeboard and climate change however for the avoidance of doubt, and therefore it is recommended by way of condition than any essential infrastructure (electrical, M&E etc.) is elevated to this level as a minimum. It is stated within the Flood Risk Assessment that the post development modelling

flood extent in the 1% and 0.1% events indicates there is no appreciable increase in flood risk either upstream or downstream of the proposed development, to ensure that no flood flow paths are disrupted that would lead to an increase in flood risk to existing development, it is recommended that sizing of proposed culverts will include appropriate allowance for blockage at detailed design stage.

A site specific flood risk assessment (SSFRA) has been submitted and it is noted that the justification test has been applied to this development in the SSFRA. In addition, mitigation measures are proposed within the turbines located within Flood Zone A and B to include elevation of critical components suitably above flood level. In this regard, it is recommended that no temporary storage of materials should be stockpiled within Flood Zone A and/or B, development within Flood Zone A and B (such as access roads) should be constructed with flood resilient materials and Proposed access roads should be constructed close to existing ground levels to ensure that no adverse flow routes or impact to flood storage should occur. It is also advised that any proposed watercourse crossings may be subject to the separate Section 50 process.

## **Conclusion**

The above report sets out the views of the Planning Authority in accordance with Section 37E (4) and (5) of the Planning and Development Act, 2000, as amended. It is respectfully requested that the Board take the above issues into consideration in the assessment of this application.

In summary, the proposal is broadly supported by the Limerick Development Plan 2022-2028 and recognises that the majority of the site is located in 'Preferred Areas' for Wind Energy Locations in the Development Plan. However, there are concerns in relation to the following:

In terms of archaeology, it is noted that the proposed development has a very large footprint and is located in an area of high archaeological density, there are over 200 monuments included in the 3km catchment of the development and 31 within the red line boundary. The classification and morphology of many of the Bronze Age sites (over 80 in number) in particular, would indicate that there is a high probability of the proposed development disturbing a large amount of previously unrecorded material. In making a decision in regard to this development it should be questioned whether the potential destruction, disturbance and other impacts on the archaeological landscape is balanced by the gains from the development, or whether the development would be better relocated to a less sensitive environment. Conditions are recommended in term archaeology, in the event that planning permission is granted.

Potential visual impact on the form and setting of a large number of archaeological sites, the Bruff, Kilmallock and Lough Gur Architectural Conservation Areas, 13 No. NIAH Historic Gardens and Designed Landscape sites and 34 No. Protected Structures.

There are concerns in relation to the potential impact on Architectural heritage assets along the route of the proposed Grid Connection and Turbine Delivery Route and it is considered that insufficient assessment of the potential impacts on these assets is provided, particularly with regard to historic bridges that the routes will cross. The Grid Connection Route and Turbine Delivery Route may impact two historic stone bridges – Ferry Bridge (RPS Reg. No. 257) and Sixmile Bridge (RPS. Reg. No. 455). Details of the mitigation measures that will be put in place to protect these bridges (and any other historic bridges along the route) should be submitted. The EIAR and LVIA do not include consideration of all cultural heritage assets within the wider setting, as outlined above. In this regard, it is recommended that further information be sought,

to adequately assess the potential impacts of the proposed development on the architectural heritage and designed landscapes of the wider context.

In addition, given the height and scale of the turbines as proposed there are concerns that the development would have a negative impact on landscape and visual impact, both locally and over greater distances from houses, roads, villages, and amenity locations and in particular the two named VRPs named above. Section 28 Guidelines on Wind Energy in 2006 also defined large turbines as over 100m to blade tip whilst recognising that turbine heights will change over time. It is clear that the heights of the turbines as now proposed are not representative of the range of turbines identified in the 2006 Guidelines.

In term of Shadow Flicker, while mitigation measures, including the implementation of a shadow control system during periods of potential shadow flicker, are proposed, the following should be clarified/addressed:

- No details of the Met Éireann observatory weather station used in identifying the 'real world scenario' has been submitted, this should be clarified.
- It is recommended that measures to provide for automated turbine shut down to eliminate shadow flicker at any nearby dwelling, including for the period of time it takes for the blades to stop rotating after turbines are shut-down should be required as a condition of any grant of permission.

In relation to noise impacts, the following should be clarified/addressed:

- It is noted in Chapter 13 of the EIAR that there are 519 no. noise sensitive receptors in the identified study area the subject site. However, it is not clear whether the study area includes the 500m prescribed in the 2006 guideline, this should be clarified.
- There is an error in the mapping of at least one of the proposed wind turbines, T9, and potentially the other proposed turbines in Figure 13-1. The geographic coordinates of the input and output files for the noise models should be reviewed as the error may compromise the accuracy of calculations at noise sensitive locations.
- Background noise levels at noise monitoring locations NML4 are probably higher than representative for typical low levels in the vicinity of dwellings in the southeast of the study area for higher wind speeds.
- In the event that any planning is granted then background noise from monitoring location NML4 should not be used to determine specific noise levels for nearby dwellings for the assessment of operational compliance. Ideally a background noise monitoring survey should be undertaken again for the southeast of the study area, or the nominal background criteria used in the determination of specific noise levels.
- There is a discrepancy between LCCC and the EIAR interpretations for setting of noise limits for day- and night-time.
- The proposed noise limits will potentially allow turbine noise levels to be significantly above background noise at night-time and day-time at moderate wind speeds (up to 18 dB and 14 dB, respectively, downwind at wind speeds of 6 m/s).
- New noise limits should be derived, consistent with the WEDG (2006) and ETSU-R-97 (which is referenced in the WEDG) for day-time (particularly for the setting of the fixed noise limits in *low noise environments* between 35 and 40 dB(A) L90 followed by a limit of 5 dB above background noise) and the Limerick Development Plan 2022-2028 for night-time, and an assessment of any expected exceedances based on the calculated noise levels.
- Proposals should be submitted for mitigation measures to ameliorate exceedances of the noise criteria where they may exist.
- Consideration should be given to the UK's Mineral Policy Statement 2 for the setting of noise limits from construction.

In the event that planning permission is granted for the proposed development, a number of conditions are also recommended and are attached in Appendix 1.

In terms of traffic management, mitigation measures outlined in the EIAR are generally acceptable, further information is recommended in relation to elements of the construction phase, traffic management and impact on road infrastructure, information on sightlines, stopping sight distances and forward visibility. Conditions are recommended in the event of a grant of planning permission.

In terms of the submitted NIS and EIAR there are a number of concerns in relation to the impact on relevant species such as otters, Whooper Swan and bats, recommendations are included in this regard. It is considered that the pre-construction survey for otters (and Amphibians) noted in the EIAR is essential and it is noted that there no specific mention of the Whooper Swan Management Works in the NIS. It is noted that bat surveys are over 2 years old and that while the inclusion of a carcass survey and post construction monitoring is welcome, it does not make up for the two year time gap since the last bat assessment. Concerns are noted in relation to Amphibian surveys, additional surveys should have been carried out and the removal of 1.3 km of drainage ditches within a specific area is a concern, removal of same could be more widely distributed throughout the site, rather than concentrated in a single area. It is noted that Whooper Swans roosting in the Lough Gur area within foraging range of the development site. Though this species has been singled out it is likely that other wild fowl species might also use the site and given that flooding often attracts wildfowl for which the turbines may pose a displacement or collision risk, potential impacts should be further investigated. It is considered that post monitoring seems to concentrate on swans (pp.95, S7.8.2 of the EIAR) should be broadened to include all wildfowl species. Overall it is recommended that the gaps identified in the information provided be filled to enable assessment of the project. Such as issues as the role of flooding attracting wildfowl to the site, how the management area for whooper swans will work all need further assessment. Finally, in the event that planning permission is granted, it is recommended that all of the measures included in the NIS and EIAR should be included as a condition(s).

In relation to surface water and flooding, in the event that planning is granted, conditions in relation to surface water management including that no temporary storage of materials should be stockpiled within Flood Zone A and/or B, development within Flood Zone A and B (such as access roads) should be constructed with flood resilient materials and Proposed access roads should be constructed close to existing ground levels to ensure that no adverse flow routes or impact to flood storage should occur. It is also advised that any proposed watercourse crossings may be subject to the separate Section 50 process.

In the event of a grant of permission it is recommended that appropriate conditions are attached for a windfarm development of this scale including residential amenity (noise/shadow flicker levels), construction management and oversight, road network, protection of water quality, archaeology and built heritage, bond conditions, and relevant community gain conditions.



**Dr. Pat Daly**  
**Director General,**  
**Limerick City & County Council**  
**21<sup>st</sup> November 2025**



## **Appendix 1: Recommended Conditions**

The Planning Authority recommends the following conditions in addition to standard conditions relating to development contributions, special development contributions, bond, decommissioning etc.

1. Prior to commencement of development the following shall be submitted for the written agreement of the Planning Authority:
  - (a) Drawings to include detailed locations of the proposed entrances for the wind farm, the locations highlighted on the submitted EIAR do not indicate the exact location of the entrances.
  - (b) Drawings to clearly demonstrate the full and relevant sightlines and stopping sight distances for all 9 number proposed site entrances, in plan form and to scale, onto a topographical survey with sufficient detail and background mapping. The clear sightline triangle should be assessed from a distance of 3.0 metres back from the road edge. Supporting photographs shall be submitted. This should include where required setback of the front boundary approximately 0.5m behind the sightline envelope, even when the vegetation boundary reaches maturity. Note that reducing hedge heights is not allowable and all existing boundaries are to be set back behind the sightlines as outlined. All stationary objects such as overhead services poles are to be setback behind the sightline envelope. Showing the vehicles positions would be of benefit to all when demonstrating sightlines, stopping sight distances and forward visibility.
  - (c) Highlight on the Site Layout Plan any boundaries that may belong to adjacent landowners that will require setback to achieve the sightlines required. These boundaries shall be shown setback and shall be highlighted and labelled on the revised drawing. Written consent from the relevant landowner to setback and maintain any boundaries outside the ownership of the applicant shall be submitted along with supporting folios and maps to demonstrate ownership.

Reason- In the interest of public health and to prevent flooding in the interest of traffic safety and amenity.

2. In relation to the grid connection Route, prior to commencement of development the following shall be submitted for the written agreement of the Planning Authority:
  - (a) Provide detailed Site-specific drawings for all Joint chamber / communication chambers / link chambers, including:
    - i. Plan views and cross-sections with dimensions
    - ii. Communication chambers and associated infrastructure
    - iii. All elements within the public road corridor. Existing and proposed.
  - (b) Drawings must be specific to each jointing location.
  - (c) Joint chambers shall be relocated off the public road and positioned within adjacent wind turbine farmland.
  - (d) Provide site specific details for all culvert / river crossings with construction methodologies.

Reason- In the interest of public health and to prevent flooding in the interest of traffic safety and amenity.

3. (a) A Stage 1/2 Road Safety Audit, in compliance with the TII Publication 'Road Safety Audit GE-STY-01024', shall be submitted for the written approval of the Planning Authority prior to commencement of development.
- (b) A Stage 3 Road Safety Audit shall be submitted upon completion of the development prior to the wind farm coming into full operation. The RSA must be in

compliance with the TII Publication 'Road Safety Audit GE-STY-01024'. The Audit Team must be independent in line with the standard.

(c) The developer shall address all problems raised with the Stage 1, 2 and 3 Audits in full and shall submit revised Site Layout Plans to include the recommendations of the Audits, which must be clearly labelled to assist consideration by the Planning Authority.

Reason- In the interest of public health and to prevent flooding in the interest of traffic safety and amenity.

4. (a) The developer shall apply to Limerick City and County Council for an 'Abnormal Load Permit' to transport the wind turbine components prior to the commencement of the development and include any amendments required to junctions/roundabouts, traffic islands, signage, road edge strengthening and tree trimming.
- (b) The Applicant shall submit a pavement condition survey incorporating report on any structures (e.g. bridges, culverts) along various routes affected by the proposed works for the written agreement with the Planning Authority prior to the commencement of the development. Any works required to Limerick City and County Councils roads, bridges and culverts will require a Road Opening Licence. These works shall be agreed with Limerick City and County Councils Road Section prior to any works carried out to the roads, bridges and culverts. All costs associated with these works shall be borne by the Applicant.
- (c) A Site-Specific Temporary Traffic Management Plan (TTMP) identifying all construction sites, temporary parking areas and delivery routes for various types of material and structural units shall be submitted for the written agreement with the Planning Authority prior to the commencement of the development.
- (d) At proposed access points, the Applicant is to reinstate the area of ground between the road edge and the realigned front boundary to prevent any road safety issues occurring. This treatment is to allow for drainage of surface water from the roadway and is to protect the edge of the road from becoming damaged and breaking up over time. The area between the new boundary and the road edge to be excavated and backfilled with 200mm of clean stone, 150mm of compacted Cl 804 or similar granular material, and seal. The Applicant shall submit photographic evidence for written agreement of the Planning Authority to clearly demonstrate that this has been achieved.
- (e) The Applicant shall be made aware that any works to our road network including junctions and works required along the public road for a connection grid will require a Road Opening Licence (ROL).
- (f) The Applicant shall provide details of the lift plan required for the installation of jointing chambers if precast is the approved option.
- (g) The Applicant shall provide a percolation test results for the locations of the jointing chambers.

Reason- In the interest of public health and to prevent flooding in the interest of traffic safety and amenity.

5. (a) A pre-condition survey of the haulage route at the proposed entrances shall be submitted for the written agreement of the Planning Authority including all bridges prior to the commencement of the development.
- (b) A post condition survey of the haulage route at the proposed entrances shall be submitted for the written agreement of the Planning Authority including all bridges shall be submitted upon completion.

Reason - In the interest of public health and to prevent flooding in the interest of traffic safety and amenity.

6. (a) The Applicants Consulting Engineers shall submit certification for the Surface Water/SuDs Specification that it has been constructed as designed upon completion of the development.
- (b) All surface water run-off from the development shall be disposed of appropriately. No such surface water shall be allowed discharge onto adjoining properties or onto the public road.
- (c) All surface water run-off from the public road, which flows into the site, shall continue to be accommodated within the site unless alternative arrangements acceptable to Limerick City & County Council are carried out. Full details of any such alternative arrangements shall be submitted to the Planning Authority and agreed prior to commencement of development.

Reason- In the interest of public health and to prevent flooding in the interest of traffic safety and amenity.

7. (a) During construction of the proposed development, the following shall apply-
  - i. No work shall take place on site outside the hours of 8.00 a.m. to 8.00 p.m. Monday to Friday and 8.00 a.m. to 4.00 p.m. Saturday, or on Sundays or public holidays, unless otherwise agreed in writing by the Planning Authority.
  - ii. No surface water run-off shall be discharged onto public roads, foul sewers or adjacent property.
  - iii. Adequate car parking facilities shall be provided on site for all workers and visitors.
  - iv. Deliveries shall be off peak.
  - v. No stacking of vehicles is permitted on the R516 Regional Road or adjacent local roads.

Reason – To protect the residential amenities of the area in the interest of proper planning and sustainable development.

8. The wheels and underside of all construction traffic leaving the site shall be cleaned, as required, to prevent soiling of public roads. A wheel washing facility, including water jets or other approved cleansing method shall be provided close to the site exit. In the event that any public roads become soiled by construction traffic from the site, these roads shall be cleaned immediately.

Reason - In the interest of the proper planning and sustainable development of the area, road safety and to protect the amenity of the area.

9. Prior to commencement of development, a revised Construction Management and Delivery Plan for the construction of the development shall be submitted and agreed in writing with Planning Authority, which shall include a Site-Specific Temporary Traffic Management Plan TTMP, (plan shall also be in drawing format). This is to give advance warning to road users on the public road being made aware that there is a construction site ahead.

Reason- In the interests of public safety and residential amenity.

10. (a) No temporary storage of materials that would appreciably impact important flood flow routes or result in loss of flood storage that would increase flood risk to existing

property either upstream or downstream of the development shall be stockpiled within Flood Zone A and/or B.

(b) Any development within Flood Zone A and B (such as access roads) shall be constructed with flood resilient materials.

(c) Access roads shall be constructed close to existing ground levels to ensure that no adverse flow routes or impact to flood storage occurs.

Reason- In the interest of public health and to prevent flooding in the interest of traffic safety and amenity.

11. The developer shall appoint a licensable archaeologist who shall apply for a licence to manage all archaeological mitigation required by the Planning Authority, inter alia to advise on all redesign, to monitor all site investigations, excavation works and all ground disturbance associated with the development, to carry out advance archaeological excavations. The name of the archaeologist shall be submitted within one month of the grant of planning permission or at any time before that date, accompanied by a site specific letter from the archaeologist certifying that they have applied for a licence.

Reason - In order to conserve the archaeological heritage of the site and to secure the preservation of any remains that may exist within the site.

12. (a) The developer shall appoint a licensable archaeologist who shall apply for a licence to manage all archaeological mitigation required by the Planning Authority, inter alia to advise on all redesign, to monitor all site investigations, excavation works and all ground disturbance associated with the development, to carry out advance archaeological excavations. The name of the archaeologist shall be submitted within one month of the grant of planning permission or at any time before that date, accompanied by a site specific letter from the archaeologist certifying that they have applied for a licence.  
(b) Within one month of the grant of planning permission, or before, as indicated in the submitted mitigation strategy, a licensed geophysical survey shall be undertaken across the entire site within Co. Limerick. The survey shall employ the system or a combination of systems of survey to amass the best results and the report shall lay out the reasons for this methodology. The results of this survey shall be submitted for the written agreement of the Planning Authority prior to commencement of development. In the event that there are further definitively recognisable monuments established during the survey, redesign and buffer areas may be required.  
(c) Buffers of 25m shall be established from the outer known edge of all of the Recorded Monuments, and the known monuments and a revised drawing indicating these buffers shall be submitted for the written agreement of the Planning Authority prior to commencement of development. The drawing shall show the outer circumference of the individual site and a 25m buffer which mirrors this line which shall be annotated. These buffers shall be maintained in perpetuity and within it no deep rooted planting, landscaping, soil disturbance, or subsequent exempted development shall occur. These buffered shall be physically established prior to the commencement of construction and shall be a fence with driven post and rails with appropriate signage and their construction shall be supervised and certified by the appointed archaeologist. Details of same shall be submitted for the written agreement of the Planning Authority prior to commencement of development.

Reason - In order to conserve the archaeological heritage of the site and to secure the preservation of any remains which may exist within the site.

(c) A schedule of licensed archaeological test trenching, as indicated in the mitigation strategy, shall be undertaken in consultation with the Planning Authority. Test trenching shall be informed by the results of the non-invasive geophysical survey but also including a representative sample of the site. The preliminary results of this archaeological test trenching shall be submitted for the written agreement of the Planning Authority on completion of site works. Further mitigation may be required at this point either redesign or advance excavation and this shall be agreed in consultation with the Planning Authority. The final report of the test trenching, in the format recommended in the Guidelines for Authors of Reports on Archaeological Excavations 2006 National Monuments Service shall be submitted within 6 months.

(b) Following the survey and test trenching there may be a requirement for advance archaeological excavation if redesign is not an option or practicable. If enabling works have commenced on the overall site, then areas for advance excavation shall be fenced off with an adequate working buffer.

Reason - In order to conserve the archaeological heritage of the site and to secure the preservation of any remains which may exist within the site.

13. All areas requiring advance archaeological excavation shall be carried out well in advance of construction in that area. The developer shall provide satisfactory arrangements for the recording and excavation of any archaeological material that may be considered appropriate to excavate and shall undertake to complete all post excavation analysis up to and including final report stage. Excavators should include a catalogue of excavated features with 12 figure ITM coordinates for the centre point of each feature. Within twelve months of the completion of the excavation a final report (in the format recommended in the Guidelines for Authors of Reports on Archaeological Excavations 2006 National Monuments Service) shall be submitted to the Planning Authority

Reason - In order to conserve the archaeological heritage of the site and to secure the preservation of any remains which may exist within the site.

14. Licensed archaeological monitoring shall be in place for all ground disturbance associated with the development, this includes but is not limited to landscaping, tree planting, drainage, hardstand, access routes. Any private arrangements for construction compounds or storage that arise shall be assessed archaeologically and monitored. Areas to be monitored along the 26km route to the grid connection shall be agreed in advance, but, at a minimum, will contain all zones of notification along the route.

Reason - In order to conserve the archaeological heritage of the site and to secure the preservation of any remains which may exist within the site.

15. The appointed archaeologist shall:

- (a) Submit on completion of the ground works a report detailing the results of the licensed archaeological monitoring works to the Department of Housing, Local Government & Heritage and the Planning Authority. The report shall contain a drawing showing the exact extent of the area that was archaeologically monitored certified by the archaeologist. Excavators should include a catalogue of excavated features with 12 figure ITM coordinates for the centre point of each feature. In the event that the development is phased, interim reports shall be submitted at each stage showing the area monitored and giving preliminary results.

- (b) Should archaeological material be found during the course of monitoring, the archaeologist may have work on the site stopped, pending a decision as to how best to deal with the archaeology. The Development Applications Unit, National Monuments Service, Department of Housing, Local Government & Heritage and the Planning Authority Archaeologist shall be informed immediately. The developer shall be prepared to be advised by the National Monuments Service, Department of Housing, Local Government & Heritage and the Planning Authority with regard to any necessary mitigating action.
- (c) Should an archaeological excavation be required then the following shall apply: the developer shall provide satisfactory arrangements for the recording and excavation of any archaeological material that may be considered appropriate to excavate and shall undertake to complete all post excavation analysis up to and including final report stage. Excavators should include a catalogue of excavated features with 12 figure ITM coordinates for the centre point of each feature. Within twelve months of the completion of the excavation a final report (in the format recommended in the Guidelines for Authors of Reports on Archaeological Excavations 2006 National Monuments Service) shall be submitted to the Planning Authority

Reason - In order to conserve the archaeological heritage of the site and to secure the preservation of any remains which may exist within the site.

16. Prior to the commencement of development, a revised EIAR (Chapter 14 – Archaeology and Cultural Heritage) shall be submitted for the written agreement of the Planning Authority. This shall include:
- (a) An assessment of the potential visual impacts of the proposed development on the following cultural heritage assets within the wider context of the site, the Protected Structures omitted from the submitted EIAR Chapter 14, including key views within the Bruff, Lough Gur and Kilmallock Architectural Conservation Areas and neighbouring NIAH Historic Gardens and Designed Landscape site (in particular Summer Ville Reg. No. 1561). Revised proposals, including drawings, to eliminate any potential impacts on same shall also be submitted.
  - (b) Details of any mitigation measures proposed regarding existing architectural heritage constraints along the Grid Connection and/or Turbine Delivery Route (including Ferry Bridge, RPS. Reg. No. 257, and Sixmile Bridge, RPS Reg. No. 455).

Reason: In order to establish an accurate record of the impacts of this development and in the interest of the protection of architectural heritage in accordance with the provisions of the Architectural Heritage Protection Guidelines for Planning Authorities.

17. Prior to commencement of development, the developer shall submit for the written agreement of the Planning Authority a detailed Construction Management Plan, including a monitoring regime. The Plan shall make provision for inclusion of all relevant mitigation proposed in the Environmental Impact Statement and Natura Impact Statement and shall in any event ensure that its scope extends to the following parameters:
- (a) surface water management during construction to control runoff from the site onto the public roads, unnatural flooding and/or the occurrence of any deleterious matter in the rivers and the tributaries and watercourses of their catchments or other waters within and adjoining the site including groundwater in accordance with best practice,
  - (b) detail of treatment of stockpiled material arising from excavation during construction, management of peat storage and disposal,

- (c) dust minimisation including dust potentially generated from vehicles, measures to include appropriately located wheel wash facilities and appropriate good practice in the covering of laden and unladen vehicles,
- (d) management of public roads in the vicinity so that they are kept free of soil, clay, gravel, mud or other debris and general site management to the satisfaction of the planning authorities,
- (e) provision of detailed plans for all temporary facilities,
- (f) preparation of a formal Project Construction and Demolition Waste Management Plan, and
- (g) control of adverse noise and disturbance by reference to construction working hours, noise limits and traffic management arrangements.

A record of daily checks that the works are being undertaken in accordance with the Construction Management Plan shall be kept for inspection by the relevant planning authorities. The developer shall satisfy the requirements of the planning authority in relation to measures to be proposed to prevent pollution run-off into water courses. The development shall thereafter be implemented in accordance with the agreed details.

Reason - In the interest of amenities, public health and safety, and to protect the adjoining surface watercourses and areas subject to environmental designations

18. All mitigation and enhancement measures set out in the submitted Environmental Impact Statement and Natura Impact Statement and Construction Environmental Management Plan shall be implemented and adhered to. The following measures shall also be implemented:

- Vegetation removal should include timing of works around bird nesting season and in the case of suitable trees peak bat activity season
- Pre removal endoscope surveys for bats should be undertaken prior to tree felling and soft felling should be practiced
- Post construction carcass searches for bats and birds using detection dogs should be employed to provide an accurate representation of fatalities across the site. The reports/data should be submitted to the relevant enforcement office at the standard frequency
- External lighting at substations compounds etc to be sensor controlled to prevent light spill
- Bridges on site new and old to be designed in wildlife friendly manner, nest boxes bat boxes to be included
- Biosecurity when working in or near watercourses to be strictly adhered to.
- Prudent to apply strict daylight working hours regime when working on or near watercourses
- Any areas in which cattle poaching or where open access direct to streams/waterbodies should be fenced off and alternative drinking facilities provided.

Reason - In the interest of amenities, public health and safety, and to protect the adjoining surface watercourses and areas subject to environmental designations

19. (a) Prior to commencement of development, the developer shall submit the technical specification of the final selected turbines for the written agreement of the Planning Authority including details of the potential for audible tones.

(b) The sound power of the final wind turbines selected shall not be greater at any wind speed than the candidate turbines identified in the noise assessment in the submitted EIAR.

(c) In the event of a noise complaint the Planning Authority shall have access to wind farm operational data. Details to be agreed in writing with the Planning Authority prior to commencement of development.

(d) In the event of the Planning Authority notifying the operator of a complaint regarding noise levels and/or special audible characteristics, the operator shall engage a suitably qualified independent acoustic engineer to prepare a noise monitoring protocol to be agreed in writing with the Planning Authority within a specified timeframe. In the event of a complaint, operational data shall be provided on request to the Planning Authority and the discretion provided to require temporary switching on and off of turbines during hours specified by the Planning Authority, to allow for testing to take place for noise monitoring purposes.

Reason – To protect the residential amenities and in the interest of proper planning and sustainable development of the area.

20.(a) All watercourses running through project lands be fenced, cattle access removed, and alternative drinking points be provided. Riparian planting is particularly important for river thermal regimes in light of future climate change predications. IFI therefore request that where possible, riparian planting is established or enhanced, particularly over pools and glides.

(b) Settlement ponds shall be maintained, where appropriate, during the operational phase to allow for the adequate settlement of suspended solids and sediments and prevent any deleterious matter from discharging. In constructing and designing silt traps particular attention should be paid to rainfall levels and intensity. The silt traps should be designed to minimise the movement of silt during intense precipitation events where the trap may become hydraulically overloaded. It is essential that they are located with good access to facilitate monitoring sampling and maintenance.

(c) Any instream works will be restricted to the annual open season for such works, July to September inclusive. The ECoW shall have the power to stop works if a pollution event or potential for a pollution event are identified.

Reason - In the interest of amenities, public health and safety, and to protect the adjoining surface watercourses and areas subject to environmental designations.

21. Prior to commencement of development, the developer shall submit the following for the written agreement of the Planning Authority:

(a) A revised Chapter 13 of the EIAR to address mapping error as follows:

a. Include the locations of all wind turbines, including T9, in line with its Irish Transverse Mercator (ITM) geographic coordinates. A table and map outlining same shall be submitted.

(b) A revised background noise survey for the southeast of the study area shall be prepared in consultation with and in line with the requirements of the Environment Section of Limerick City and County Council.

(c) A revision of noise limits for day-time in line with the Wind Energy Development Guidelines (2006) and night-time noise limits in line with the Limerick Development Plan 2022-2028.

(d) An investigation of special audible characteristics (including amplitude modulation, low frequency noise and tones) in the event of a complaint regarding any or all of those characteristics.

(e) Should construction or decommissioning last for a period of six months or longer, a day-time limit of 55 dB  $L_{Aeq,1hr}$  shall be adopted at noise sensitive buildings.

- (f) Measures for automated turbine shut down to eliminate shadow flicker at any nearby dwelling, including for the period of time it takes for the blades to stop rotating after turbines are shut-down.

Reason – To protect the residential amenities and in the interest of proper planning and sustainable development of the area.

## Appendix 2: Internal Reports

### ROADS SECTION



Comhairle Cathrach  
& Contae Luimnigh

Limerick City  
& County Council

### **Planning Application Internal Report**

**Planning Ref:** 25323780  
**Applicant:** Ballinlee Wind Farm  
**Development Address:** Ballincurra, Ballingayrou, Ballinlee South, Ballinlee North, Ballinrea, Ballyreesode, Camas North, Camas South, Carrigeen, Knockuregare, Ballybane, Ballynanty, Cahirguillamore, Coolyhenan, Knockananty, Ballysimon Commons, Tullovin and Milltown, Co. Limerick.

**Development Description:** a 10 year permission and an operational period of no less than 35 years from the date of commissioning of the entire wind farm. • Seventeen (17) No. wind turbines (turbine tip height of 160m, and 150m (T6 only)) with associated foundations and crane hardstand areas. • One (1) No. Permanent Meteorological Mast (92m height) and associated foundation, hardstand area and ancillary main crane hardstand area. • One (1) No. Electrical Substation (110kV) including Eirgrid compound, IPP, maintenance compounds, ancillary building, security fencing and all associated works. • Nine (9) No. site entrances. • New and upgraded internal site service tracks (approximately 10.8km of new internal access tracks to be constructed). • New clear span bridge over the Morningstar River. • Underground electric collector cable systems between turbines within the wind farm site. • Underground electric cabling systems between the wind farm site and connection point at existing Killonan 220/110kV substation. • New temporary access track via R-516 to facilitate the turbine delivery route located in the townland of Tullovin. • Three (3) No. temporary construction site compounds (one approximately 95m x 50m and two approximately 55m x 25m). • Two (2) No. borrow pits to be used as a source of stone material during construction and for storage of excess excavated materials. • Nine (9) No. permanent and two (2) temporary deposition areas. • Associated surface water management systems. • Tree felling required for wind farm infrastructure. • Whooper Swan Management Area works. • Habitat Enhancement Areas works. • Landscaping, fencing and all associated works  
Development.

**Report Prepared By:** Christopher Liddy

**Date:** 10.11.2025

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#### **Comments:**

##### **1. Roads**

The proposed development, particularly in construction phase, is likely to have an impact on traffic management and road condition/maintenance and in the period immediately after construction. The major element of the project involves erection of Wind Turbines, which would constitute a major and diverse construction site.

The most serious impacts affecting roads relate to: -

- Impact on traffic management in the area and delivery routes.
- Impact on road structure and condition both during and after construction period.
- Impact and possible after-effects on road/ site drainage.

Drawings and supporting information shall be submitted to and agreed in writing with the Planning Authority prior to the commencement of the development.

**The Roads Department do not support this application due to lack of information provided to make an informed decision.**

(a) Sightlines, Stopping Sight Distances & Forward Visibility.

- The Applicant shall submit detailed locations of the proposed entrances for the wind farm, the submitted locations highlighted on the EIAR do not indicate the exact location of the entrances to allow the Roads Department to make an informed decision.
- The Applicant shall submit in plan form and to scale for approval with the Planning Authority, onto a **topographical survey** with sufficient detail and background mapping to clearly demonstrate the full and relevant sightlines and stopping sight distances for all 9 number proposed site entrances. The clear sightline triangle should be assessed from a distance of 3.0 metres back from the road edge. Supporting photographs shall be submitted. This should include where required setback of the front boundary approximately 0.5m behind the sightline envelope, even when the vegetation boundary reaches maturity. Note that reducing hedge heights is not allowable and all existing boundaries are to be set back behind the sightlines as outlined. All stationary objects such as overhead services poles are to be setback behind the sightline envelope. Showing the vehicles positions would be of benefit to all when demonstrating sightlines, stopping sight distances and forward visibility.

(b) The Applicant is to highlight on the Site Layout Plan any boundaries that may belong to adjacent landowners that will require setback to achieve the sightlines required. These boundaries shall be shown setback and shall be highlighted and labelled on the revised drawing. Written permission to setback and maintain any boundaries outside the ownership of the applicant is required along with supporting folios and maps to demonstrate ownership.

(c) A Stage 1/2 Road Safety Audit shall be submitted for approval and must be completed and submitted by the Applicant to the Planning Authority for approval in compliance with the TII Publication 'Road Safety Audit GE-STY-01024'.

(d) The Applicant shall address all problems raised with the Stage 1, 2 and 3 Audits in full and submit revised Site Layout Plans to include the recommendations of the Audits, which must be clearly labelled for acceptance by the Planning Authority.

## **2. Grid Connection Route**

- Provide detailed Site-specific drawings for all Joint chamber / communication chambers / link chambers, including:
  - Plan views and cross-sections with dimensions
  - Communication chambers and associated infrastructure
  - All elements within the public road corridor. Existing and proposed.
- Drawings must be specific to each jointing location.

- c. Joint chambers shall be relocated off the public road and positioned within adjacent wind turbine farmland.
- d. The Applicant shall provide site specific details for all culvert / river crossings with construction methodologies.

**Conditions are highlighted below if this application passes the approval stage.**

### **3. Roads**

- a. A Stage 3 Road Safety Audit shall be submitted and accepted by the Planning Authority upon completion of the development prior to the wind farm coming into full operation. The RSA must be in compliance with the TII Publication 'Road Safety Audit GE-STY-01024'. The Audit Team must be independent in line with the standard.
- b. The Applicant shall apply to Limerick City and County Council for an 'Abnormal Load Permit' to transport the wind turbine components prior to the commencement of the development and include any amendments required to junctions/roundabouts, traffic islands, signage, road edge strengthening and tree trimming.
- c. A pre-condition survey of the haulage route at the proposed entrances shall be submitted for the written agreement with the Planning Authority including all bridges prior to the commencement of the development.
- d. A post condition survey of the haulage route at the proposed entrances shall be submitted for the written agreement with the Planning Authority including all bridges shall be submitted upon completion.
- e. The Applicant shall show the existing junctions that require works to facilitate the vehicles transporting the wind turbine components. The Applicant shall submit full details required for the written agreement with the Planning Authority prior to the commencement of the development. All costs associated with these works shall be borne by the Applicant and requires a Road Opening Licence.
- f. The Applicant shall submit a pavement condition survey incorporating report on any structures (e.g. bridges, culverts) along various routes affected by the proposed works for the written agreement with the Planning Authority prior to the commencement of the development. Any works required to Limerick City and County Councils roads, bridges and culverts will require a Road Opening Licence. These works shall be agreed with Limerick City and County Councils Road Section prior to any works carried out to the roads, bridges and culverts. All costs associated with these works shall be borne by the Applicant.
- g. A Site-Specific Temporary Traffic Management Plan (TTMP) identifying all construction sites, temporary parking areas and delivery routes for various types of material and structural units shall be submitted for the written agreement with the Planning Authority prior to the commencement of the development.
- h. At proposed access points, the Applicant is to reinstate the area of ground between the road edge and the realigned front boundary to prevent any road safety issues occurring. This treatment is to allow for drainage of surface water from the roadway and is to protect the edge of the road from becoming damaged and breaking up over time. The area between the

new boundary and the road edge to be excavated and backfilled with 200mm of clean stone, 150mm of compacted CI 804 or similar granular material, and seal. The Applicant shall submit photographic evidence for written agreement of the Planning Authority to clearly demonstrate that this has been achieved.

- i. The Applicant shall be made aware that any works to our road network including junctions and works required along the public road for a connection grid will require a Road Opening Licence (ROL).
- j. The Applicant shall provide details of the lift plan required for the installation of jointing chambers if precast is the approved option.
- k. The Applicant shall provide a percolation test results for the locations of the jointing chambers.

#### **4. Surface Water Management Plan**

- (d) The Applicants Consulting Engineers shall submit certification for the Surface Water/SuDs Specification that it has been constructed as designed upon completion of the development.
- (e) All surface water run-off from the development shall be disposed of appropriately. No such surface water shall be allowed discharge onto adjoining properties or onto the public road.
- (f) All surface water run-off from the public road, which flows into the site, shall continue to be accommodated within the site unless alternative arrangements acceptable to Limerick City & County Council are carried out. Full details of any such alternative arrangements shall be submitted to the Planning Authority and agreed prior to commencement of development.

Reason- In the interest of public health and to prevent flooding in the interest of traffic safety and amenity.

#### **5. Construction Management and Delivery Plan**

- (d) During construction of the proposed development, the following shall apply-
  - No work shall take place on site outside the hours of 8.00 a.m. to 8.00 p.m. Monday to Friday and 8.00 a.m. to 4.00 p.m. Saturday, or on Sundays or public holidays, unless otherwise agreed in writing by the Planning Authority.
  - No surface water run-off shall be discharged onto public roads, foul sewers or adjacent property.
  - Adequate car parking facilities shall be provided on site for all workers and visitors.
  - Deliveries shall be off peak.

Reason – To protect the residential amenities of the area in the interest of proper planning and sustainable development.

- (e) The wheels and underside of all construction traffic leaving the site shall be cleaned, as required, to prevent soiling of public roads. A wheel washing facility, including water jets or other approved cleansing method shall be provided close to the site exit. In the event that any public roads become soiled by construction traffic from the site, these roads shall be cleaned immediately.

Reason - In the interest of the proper planning and sustainable development of the area, road safety and to protect the amenity of the area.

- (f) Prior to commencement of development, a revised Construction Management and Delivery Plan for the construction of the development shall be submitted and agreed in writing with Planning Authority, which shall include a Site-Specific Temporary Traffic Management Plan TTMP, (plan shall also be in drawing format). This is to give advance warning to road users on the public road being made aware that there is a construction site ahead.

Reason- In the interests of public safety and residential amenity.

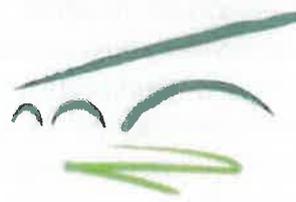
**Recommendation:**

*Approval subject to conditions.*

**Signed**

*Christopher Liddy*

**Date:** 10.11.2025



## **Planning Application Internal Report – Flood Risk**

**Planning Ref:** 25/323780

**Applicant:** Ballinlee Wind Farm

**Development Description:** a 10 year permission and an operational period of no less than 35 years from the date of commissioning of the entire wind farm. • Seventeen (17) No. wind turbines (turbine tip height of 160m, and 150m (T6 only)) with associated foundations and crane hardstand areas. • One (1) No. Permanent Meteorological Mast (92m height) and associated foundation, hardstand area and ancillary main crane hardstand area. • One (1) No. Electrical Substation (110kV) including Eirgrid compound, IPP, maintenance compounds, ancillary building, security fencing and all associated works. • Nine (9) No. site entrances. • New and upgraded internal site service tracks (approximately 10.8km of new internal access tracks to be constructed). • New clear span bridge over the Morningstar River. • Underground electric collector cable systems between turbines within the wind farm site. • Underground electric cabling systems between the wind farm site and connection point at existing Killonan 220/110kV substation. • New temporary access track via R-516 to facilitate the turbine delivery route located in the townland of Tullovin. • Three (3) No. temporary construction site compounds (one approximately 95m x 50m and two approximately 55m x 25m). • Two (2) No. borrow pits to be used as a source of stone material during construction and for storage of excess excavated materials. • Nine (9) No. permanent and two (2) temporary deposition areas. • Associated surface water management systems. • Tree felling required for wind farm infrastructure. • Whooper Swan Management Area works. • Habitat Enhancement Areas works. • Landscaping, fencing and all associated works

**Development Address:** Ballincurra, Ballingayrou, Ballinlee South, Ballinlee North, Ballinrea, Ballyreesode, Camas North, Camas South, Carrigeen, Knockuregare, Ballybane, Ballynanty, Cahirguillamore, Coolyhenan, Knockananty, Ballysimon Commons, Tullovin and Milltown, Co. Limerick.

**Report Prepared By:** PEMP (Darragh Ryan, A/SEE)

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### **Comments:**

PEPM has reviewed application 25/323780 with regard to flood risk and makes the following observations;

- The proposed development is located partly within Flood Zone A, B and C as per the Limerick Development Plan 2022-2028.
- The proposed substation is located within Flood Zone C according to the flood risk assessment;

- It is noted that site specific flood modelling has been undertaken by the applicant with a HEC RAS model built to determine baseline hydrological conditions and assess any post development impacts on account of the proposed development;
- It is noted that 4 no. proposed turbines (of 17 no. total) are located within Flood Zone A and B as per Table 4.15 within the flood risk assessment. The remainder of the turbines are within Flood Zone C including the proposed substation;
- From Section 4.4.5, it is unclear as to what elements the applicant is referring to will be set above the 1%AEP level plus allowance for freeboard and climate change however for the avoidance of doubt, it is recommended by way of condition that any essential infrastructure (electrical, M&E etc.) is elevated to this level as a minimum;
- It is stated within the FRS that the post development modelling flood extent in the 1% and 0.1% events indicates there is no appreciable increase in flood risk either upstream or downstream of the proposed development;
- To ensure that no flood flow paths are disrupted that would lead to an increase in flood risk to existing development, it is recommended that sizing of proposed culverts will include appropriate allowance for blockage at detailed design stage;
- It is noted that the Justification Test has been applied to this development within the SSFRA;
- It is recommended that no temporary storage of materials should be stockpiled within Flood Zone A and/or B that would appreciably impact important flood flow routes or result in loss of flood storage that would increase flood risk to existing property either upstream or downstream of the development;
- Any proposed watercourse crossings may be subject to the separate Section 50 process;
- Any development within Flood Zone A and B (such as access roads) should be constructed with flood resilient materials;
- Proposed access roads should be constructed close to existing ground levels to ensure that no adverse flow routes or impact to flood storage should occur.

**Recommendation:**

Subject to the above, PEPM raise no objection on the grounds of flood risk.

**Signed** Darragh Ryan      **Date:** 18/11/25



## **Planning Application Internal Report**

**Planning Ref: 25/323780**

**Applicant: Ballinlee Wind Farm**

**Development Description:** a 10 year permission and an operational period of no less than 35 years from the date of commissioning of the entire wind farm. • Seventeen (17) No. wind turbines (turbine tip height of 160m, and 150m (T6 only)) with associated foundations and crane hardstand areas. • One (1) No. Permanent Meteorological Mast (92m height) and associated foundation, hardstand area and ancillary main crane hardstand area. • One (1) No. Electrical Substation (110kV) including Eirgrid compound, IPP, maintenance compounds, ancillary building, security fencing and all associated works. • Nine (9) No. site entrances. • New and upgraded internal site service tracks (approximately 10.8km of new internal access tracks to be constructed). • New clear span bridge over the Morningstar River. • Underground electric collector cable systems between turbines within the wind farm site. • Underground electric cabling systems between the wind farm site and connection point at existing Killonan 220/110kV substation. • New temporary access track via R-516 to facilitate the turbine delivery route located in the townland of Tullovin. • Three (3) No. temporary construction site compounds (one approximately 95m x 50m and two approximately 55m x 25m). • Two (2) No. borrow pits to be used as a source of stone material during construction and for storage of excess excavated materials. • Nine (9) No. permanent and two (2) temporary deposition areas. • Associated surface water management systems. • Tree felling required for wind farm infrastructure. • Whooper Swan Management Area works. • Habitat Enhancement Areas works. • Landscaping, fencing and all associated works.

**Address:** Ballincurra, Ballingayrou, Ballinlee South, Ballinlee North, Ballinrea, Ballyreesode, Camas North, Camas South, Carrigeen, Knockuregare, Ballybane, Ballynanty, Cahirguillamore, Coolyhenan, Knockananty, Ballysimon Commons, Tullovin and Milltown,

**Date of Referral:** 24.10.2025

**Report Prepared By:** Sarah McCutcheon, Local Authority Archaeologist

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**Comments:** The proposed development has a very large footprint. Within the site there is an estimated 8.3km of new access track at a minimum width of 5m (on straight stretches), larger splays on curves and at 9 new entrances, upgrade of 0.5km of existing track (500m x 2m); the floated track is likely to require top soil strip (2km x 5m). Hardstand represents 168,000 sqm, turbine bases 9,737sqm, construction compounds 7,500sqm, deposition areas 87,377sqm, borrow pit 60,700sqm. In addition, there is the footprint of the meteor mast and the substation as well as the trenches & settlement tanks |& other infrastructure for waste, foul & potable water. Finally there is the removal of 1,578m of hedgerow and clearfelling of 14.4ha of forestry as well as the replacement of 14.4ha of new planting. Within the site the large scale items represent direct ground disturbance of a very conservative 52ha, not including the 14.4 replacement planting. In addition there is 26km of ducting to join the grid mainly along public roads, estimated to excavate 24,840 cubic metre of material.

The development is located in an area of high archaeological density, there are over 200 monuments included in the 3km catchment of the development and 31 within the red line boundary. The classification and morphology of many of the Bronze Age sites (over 80 in number) in particular, would indicate that there is a high probability of the proposed development disturbing a large amount of previously unrecorded material. The Framework and Principles for the Protection of the Archaeological Heritage, sets out the basic principles of national policy on the protection of the archaeological heritage. It states '*Preservation insitu must always be the first option to be considered rather than preservation by record in order to allow development to proceed, and preservation in-situ must also be presumed to be the preferred option*' (p.24). It is worth restating that the remains of our ancestors are a finite resource and archaeological excavation represents controlled destruction of these sites, with the tools available currently. In making a decision in regard to this development it should be questioned whether

the potential destruction, disturbance and other impacts on the archaeological landscape is balanced by the gains from the development, or whether the development would be better relocated to a less sensitive environment.

**Recommendation:** In the event that the development is granted the following shall apply:

**Condition 1:** The developer shall appoint a licensable archaeologist who shall apply for a licence to manage all archaeological mitigation required by the Planning Authority, inter alia to advise on all redesign, to monitor all site investigations, excavation works and all ground disturbance associated with the development, to carry out advance archaeological excavations. The name of the archaeologist shall be submitted within one month of the grant of planning permission or at any time before that date, accompanied by a site specific letter from the archaeologist certifying that they have applied for a licence.

**Condition 2:** Within one month of the grant of planning permission, or before, as indicated in the submitted mitigation strategy, a licensed geophysical survey shall be undertaken across the entire site, including the site identified for the replanting of the 14.4ha of forestry. The survey shall employ the system or a combination of systems of survey to amass the best results and the report shall lay out the reasons for this methodology. The results of this survey shall be reviewed by the Planning Authority. In the event that there are further definitively recognisable monuments established during the survey, redesign and buffer areas may be required.

**Condition 3.** Buffers of 25m shall be established from the outer known edge of all of the Recorded Monuments, and any monuments definitively identified during the non-invasive survey. A revised drawing indicating these buffers shall be submitted for the approval of the Planning Authority. The drawing shall show the outer circumference of the individual site and a 25m buffer which mirrors this line which shall be annotated. The buffer shall be maintained in perpetuity and within it no deep rooted planting, landscaping, soil disturbance, or subsequent exempted development shall occur. The buffer shall be physically established prior to the commencement of construction and shall be a fence with driven post & rails with appropriate signage and its construction shall be supervised & certified by the appointed archaeologist.

**Condition 4:** In consultation with the Planning Authority a schedule of licensed archaeological test trenching, as indicated in the mitigation strategy, shall be undertaken, informed by the results of the non-invasive geophysical survey but also including a representative sample of the site. The preliminary results of this archaeological test trenching shall be submitted to the Planning Authority on completion of site works. Further mitigation may be required at this point either redesign or advance excavation and this is to be agreed in consultation with the Planning Authority. The final report of the test trenching, in the format recommended in the Guidelines for Authors of Reports on Archaeological Excavations 2006 National Monuments Service shall be submitted within 6 months.

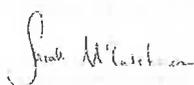
**Condition 5:** Following the survey & test trenching there may be a requirement for advance archaeological excavation if redesign is not an option or practicable. If enabling works have commenced on the overall site, then areas for advance excavation shall be fenced off with an adequate working buffer.

**Condition 6:** All areas requiring advance archaeological excavation shall be carried out well in advance of construction in that area. The developer shall provide satisfactory arrangements for the recording and excavation of any archaeological material that may be considered appropriate to excavate and shall undertake to complete all post excavation analysis up to and including final report stage. Excavators should include a catalogue of excavated features with 12 figure ITM coordinates for the centre point of each feature. Within twelve months of the completion of the excavation a final report (in the format recommended in the Guidelines for Authors of Reports on Archaeological Excavations 2006 National Monuments Service) shall be submitted to the Planning Authority

**Condition 7:** Licensed archaeological monitoring shall be in place for all ground disturbance associated with the development, this includes but is not limited to landscaping, tree planting, drainage, hardstand, access routes. Any private arrangements for construction compounds or storage that arise shall be assessed archaeologically and monitored. Areas to be monitored along the 26km route to the grid connection shall be agreed in advance, but, *at a minimum*, will contain all zones of notification along the route.

**Condition 8:** The appointed archaeologist shall:

- a. Submit on completion of the ground works a report detailing the results of the licensed archaeological monitoring works to the Department of Housing, Local Government & Heritage and the Planning Authority. The report shall contain a drawing showing the exact extent of the area that was archaeologically monitored certified by the archaeologist. Excavators should include a catalogue of excavated features with 12 figure ITM coordinates for the centre point of each feature. In the event that the development is phased, interim reports shall be submitted at each stage showing the area monitored and giving preliminary results.
- b. Should archaeological material be found during the course of monitoring, the archaeologist may have work on the site stopped, pending a decision as to how best to deal with the archaeology. The Development Applications Unit, National Monuments Service, Department of Housing, Local Government & Heritage and the Planning Authority Archaeologist shall be informed immediately. The developer shall be prepared to be advised by the National Monuments Service, Department of Housing, Local Government & Heritage and the Planning Authority with regard to any necessary mitigating action.
- c. Should an archaeological excavation be required then the following shall apply: the developer shall provide satisfactory arrangements for the recording and excavation of any archaeological material that may be considered appropriate to excavate and shall undertake to complete all post excavation analysis up to and including final report stage. Excavators should include a catalogue of excavated features with 12 figure ITM coordinates for the centre point of each feature. Within twelve months of the completion of the excavation a final report (in the format recommended in the Guidelines for Authors of Reports on Archaeological Excavations 2006 National Monuments Service) shall be submitted to the Planning Authority



**Signed:**

\_\_\_\_\_  
**Local Authority Archaeologist**

**Date:** 10.11.2025



**S.I.D. Planning Application - Referral  
Architectural Conservation**

**Planning Ref:** 25/323780

**Applicant:** Ballinlee Wind Farm.

**Development Description:** Planning Permission for:  
*“a 10 year permission and an operational period of no less than 35 years from the date of commissioning of the entire wind farm.*

- *Seventeen (17) No. wind turbines (turbine tip height of 160m, and 150m (T6 only)) with associated foundations and crane hardstand areas.*
- *One (1) No. Permanent Meteorological Mast (92m height) and associated foundation, hardstand area and ancillary main crane hardstand area.*
- *One (1) No. Electrical Substation (110kV) including Eirgrid compound, IPP, maintenance compounds, ancillary building, security fencing and all associated works.*
- *Nine (9) No. site entrances.*
- *New and upgraded internal site service tracks (approximately 10.8km of new internal access tracks to be constructed).*
- *New clear span bridge over the Morningstar River.*
- *Underground electric collector cable systems between turbines within the wind farm site.*
- *Underground electric cabling systems between the wind farm site and connection point at existing Killonan 220/110kV substation.*
- *New temporary access track via R-516 to facilitate the turbine delivery route located in the townland of Tullovin.*
- *Three (3) No. temporary construction site compounds (one approximately 95m x 50m and two approximately 55m x 25m).*
- *Two (2) No. borrow pits to be used as a source of stone material during construction and for storage of excess excavated materials.*
- *Nine (9) No. permanent and two (2) temporary deposition areas.*
- *Associated surface water management systems.*
- *Tree felling required for wind farm infrastructure.*
- *Whooper Swan Management Area works.*
- *Habitat Enhancement Areas works.*
- *Landscaping, fencing and all associated works.”*

**Location:** Ballincurra, Ballingayrou, Ballinlee South, Ballinlee North, Ballinrea, Ballyreesode, Camas North, Camas South, Carrigeen, Knockuregare, Ballybane, Ballynanty, Cahirguillamore, Coolyhenan, Knockananty, Ballysimon Commons, Tullovin and Milltown, Co. Limerick.

**R.P.S. Reg. No.:** Within the site: N/A

Within the wider setting:

Reg. No. 650 – Rathcannon Castle  
Reg. No. 652 – Rathcannon House  
Reg. No. 575 – Maidstown Castle/House  
Reg. No. 578 – R.C. Church  
Reg. No. 532 – De Valera Cottage  
Reg. No. 213 – Camas House  
Reg. No. 670 – Rockbarton House  
Reg. No. 669 – Rockbarton Outbuildings  
Reg. No. 454 – Glebe House  
Reg. No. 98 – Ballygrennan Castle  
Reg. No. 991 – Teampuillin Graveyard  
Reg. No. 992 – O'Regans  
Reg. No. 994 – Court House  
Reg. No. 995 – Keating's  
Reg. No. 996 – SS. Peter and Paul  
Reg. No. 1001 – Garda Station  
Reg. No. 998 – O'Connor's Pharmacy  
Reg. No. 999 – O'Connor's House  
Reg. No. 1000 – Bank of Ireland  
Reg. No. 1002 – O'Donovan's  
Reg. No. 1003 – O'Donovan's  
Reg. No. 1004 – Bank  
Reg. No. 1005 – Restaurant  
Reg. No. 1006 – Derry's Bar  
Reg. No. 1007 – Hourigan's  
Reg. No. 1008 – Quilty's  
Reg. No. 1009 – Hehir Photogrpahy  
Reg. No. 1012 – Mulcahy's  
Reg. No. 1014 – Collin's Premises  
Reg. No. 1015 – Glynn's  
Reg. No. 1016 – Kiely's  
Reg. No. 1017 – Carew's  
Reg. No. 1018 – Neilan's  
Reg. No. 1022 – J. Howard's  
Reg. No. 1023 – Raleigh's  
Reg. No. 1019 – Purcell's House  
Reg. No. 1021 – O'Connor's  
Reg. No. 1020 – Prior's House  
Reg. No. 1024 – Church  
Reg. No. 1025 – Mausoleum  
Reg. No. 1028 – Bridge  
Reg. No. 1029 – Bridge  
Reg. No. 1032 – Hotel  
Reg. No. 1031 – Hotel  
Reg. No. 1030 – Presbytery  
Reg. No. 1033 – St Mary's Convent  
Reg. No. 1027 – Dispensary  
Reg. No. 1026 – Grove House  
Reg. No. 467 – Kilballyowen  
Reg. No. 533 – Uregare Church  
Reg. No. 53 – Summer Ville  
Reg. No. 338 – Holy Trinity Church  
Reg. No. 661 – Scanlan's

**R.P.S. Within the Wider Setting (Cont'd):**

Reg. No. 339 – Dromin Church  
 Reg. No. 336 – Tierney’s  
 Reg. No. 337 – Fair Green  
 Reg. No. 39 – O’Neill’s  
 Reg. No. 147 – Ballynamuddagh House  
 Reg. No. 192 – Bulgaden Castle  
 Reg. No. 171 - House  
 Reg. No. 190 – Creamery  
 Reg. No. 99 – St Mary’s Church  
 Reg. No. 1704 – Bantard House  
 Reg. No. 711 – Cotter’s  
 Reg. No. 1040 – McMahan’s  
 Reg. No. 1034 – St. Munchin’s Church  
 Reg. No. 1035 – Health Centre  
 Reg. No. 1036 – Former School  
 Reg. No. 1037 – Briar Cottage  
 Reg. No. 1039 – Bridge  
 Reg. No. 1038 – Creamery  
 Reg. No. 1041 – Church  
 Reg. No. 1043 – Bruree Lodge  
 Reg. No. 559 – Glebe Castle  
 Reg. No. 558 – Bruree Castle  
 Reg. No. 463 – Howardstown Bridge  
 Reg. No. 29 – Glebe House  
 Reg. No. 30 – Kilbroney Church  
 Reg. No. 28 – Athlacca Bridge  
 Reg. No. 735 – Castle Ievers  
 Reg. No. 210 – Cahir-Guillamore

**A.C.A.:**

Within the site:

N/A

Within the wider setting:

Bruff A.C.A. (Reg. No. 16)  
 Lough Gur A.C.A. (Reg. No. 20)  
 Kilmallock A.C.A. (Reg. No. 15)

**N.I.A.H. Reg. Ref.:**

Within the site:

N/A

Within the wider setting:

Reg. No. 21903128 – Turret/Folly  
 Reg. No. 21903127 – Camas House  
 Reg. No. 21903123 – Rockbarton House  
 Reg. No. 21903212 – Glebe House  
 Reg. No. 21803003 – Courthouse  
 Reg. No. 21803002 – SS. Peter and Paul  
 Reg. No. 21803004 – Memorial  
 Reg. No. 21803006 – Old Barracks  
 Reg. No. 21803007 – O’Connors  
 Reg. No. 21803008 – Bank of Ireland  
 Reg. No. 21803010 – The Old Bank  
 Reg. No. 21803014 – House  
 Reg. No. 21803015 – Terraced Houses  
 Reg. No. 21803016 – Jim Butler’s  
 Reg. No. 21803021 – Bookmakers  
 Reg. No. 21803022 – Kiely’s

**N.I.A.H. Within the Wider Setting (Cont’d):**

Reg. No. 21803025 – J. Howard’s  
 Reg. No. 21803027 – C.O.I. Church

Reg. No. 21803040 – Vent Pipe  
 Reg. No. 21803036 – Bridge  
 Reg. No. 21803037 – Vent Pipe  
 Reg. No. 21803028 – Bridge  
 Reg. No. 21803031 – Former Hotel  
 Reg. No. 21803030 – Former Hotel  
 Reg. No. 21803029 – Former Hotel  
 Reg. No. 21803038 – Adelaide House  
 Reg. No. 21803033 – Former Presbytery  
 Reg. No. 21803035 – Convent Chapel  
 Reg. No. 21803034 – Convent  
 Reg. No. 21803041 – Sherbury  
 Reg. No. 21904003 – Milltown House  
 Reg. No. 21904001 – Ballyvulhane Bridge  
 Reg. No. 21903215 – Kilballyowen  
 Reg. No. 21904004 – Greenpark House  
 Reg. No. 21903920 – Post Box  
 Reg. No. 21903918 – Holy Trinity Church  
 Reg. No. 21903919 – Thatched House  
 Reg. No. 21903914 – Thatched House  
 Reg. No. 21904006 – Roche Mausoleum  
 Reg. No. 21904008 – Creamery  
 Reg. No. 21904007 – R.C. Church  
 Reg. No. 21904801 – Bawntard House  
 Reg. No. 21903915 – Thatched House  
 Reg. No. 21804001 – Thatched House  
 Reg. No. 21804019 – Water Pump  
 Reg. No. 21804020 – Water Hydrant  
 Reg. No. 21804017 – Railway Station  
 Reg. No. 21804003 – Bruree Lodge  
 Reg. No. 21804002 – R.C. Church  
 Reg. No. 21804009 – C.O.I. Church  
 Reg. No. 21804008 – Bridge  
 Reg. No. 21804011 – The Old Mill  
 Reg. No. 21804012 – The Old Mill  
 Reg. No. 21804013 – Bruree Mill  
 Reg. No. 21804014 – De Valera Museum  
 Reg. No. 21804015 – Briar Cottage  
 Reg. No. 21804016 – Munchin’s Terrace  
 Reg. No. 21903913 – De Valera Cottage  
 Reg. No. 21903912 – Kilbrien Bridge  
 Reg. No. 21903911 – Railway Bridge  
 Reg. No. 21903910 – Railway Bridge  
 Reg. No. 21903909 – Howardstown Bridge  
 Reg. No. 21903907 – Glebe House  
 Reg. No. 21903906 – Athlacca Church  
 Reg. No. 21903904 – R.C. Church  
 Reg. No. 21903905 – Chimney  
 Reg. No. 21903903 – Bridge  
 Reg. No. 21903114 – Castle Ievers  
 Reg. No. 21903112 – Bridge  
 Reg. No. 21903111 – Railway Bridge  
 Reg. No. 21903115 – Gray’s Bridge

**N.I.A.H. Within the Wider Setting (Cont’d):**



Reg. No. 1037 – Briar Cottage  
Reg. No. 1039 – Bridge  
Reg. No. 1038 – Creamery  
Reg. No. 1041 – Church  
Reg. No. 1043 – Bruree Lodge  
Reg. No. 559 – Glebe Castle  
Reg. No. 558 – Bruree Castle  
Reg. No. 463 – Howardstown Bridge  
Reg. No. 29 – Glebe House  
Reg. No. 30 – Kilbroney Church  
Reg. No. 28 – Athlacca Bridge  
Reg. No. 210 – Cahir-Guillamore

These missing Protected Structures should be added to the map in Figure 14-5, and potential impacts on these Protected Structures and their settings should be assessed if they are within 3km of the closest point of the proposed development site.

The assessment/Chapter 14 refers to the D.o.E.H.L.G. Historic Gardens and Designed Landscapes survey (the N.I.A.H. Garden Survey), however it does not identify any sites included on this survey within the study area. The proposed development site appears to be located partly within a designed landscape (Summer Ville – Reg. No. 1561). There are further N.I.A.H. Garden Survey sites within the study area, including:

Greenpark House (Reg. No. 1565)  
Bulgaden Hall (Reg. No. 1569)  
Glebe House (Reg. No. 1521)  
Tullerboy Cottage (Reg. No. 1516)  
Castle Ievers (Reg. No. 1517)  
Green Lawn (Reg. No. 1553)  
Camas House (Reg. No. 1556)  
Clorane House (Reg. No. 1518)  
Rockbarton House (Reg. No. 1562)  
Milltown George (Reg. No. 1571)  
Milltown Lodge (Reg. No. 1572)  
Kilballyowen House (Reg. No. 1577)  
Cahir Guillamore (Reg. No. 1557)

The potential indirect/visual impacts of the proposed wind farm development on these designed landscapes should be assessed. Similarly, the potential impacts of the development on views from the Bruff, Kilmallock and Lough Gur Architectural Conservation Areas should be assessed with regard to the historic architectural character of these areas.

The applicant should have due regard to the relevant policies and objectives in the Limerick Development Plan 2022-28 relating to the Architectural Heritage and Historic Gardens/Landscapes – including Policy EH P9, Objective EH O50, EH O52 and EH O53.

Architectural heritage assets along the route of the proposed Grid Connection and Turbine Delivery Route are described in Sections 14.4 and 14.5 of the E.I.A.R., however insufficient assessment of the potential impacts on these assets is provided, particularly with regard to historic bridges that the routes will cross. The Grid Connection Route and Turbine Delivery Route may impact two historic stone bridges – Ferry Bridge (R.P.S. Reg. No. 257) and Sixmile Bridge (R.P.S. Reg. No. 455). Details of the mitigation measures

that will be put in place to protect these bridges (and any other historic bridges along the route) should be submitted.

**Conclusion:**

The EIAR and LVIA do not include consideration of all cultural heritage assets within the wider setting, as outlined above. I recommend that further information be sought, to adequately assess the potential impacts of the proposed development on the architectural heritage and designed landscapes of the wider context.

I recommend that the following further information be sought from the applicant:

1. A revised Chapter 14 of the EIAR should be submitted, to include assessment of the potential direct and indirect impacts of the proposed development on the cultural heritage assets within the wider context of the site, including:
  - a. Protected Structures omitted from the submitted EIAR Chapter 14.
  - b. Architectural Conservation Areas in the wider context – including Bruff, Lough Gur and Kilmallock.
  - c. Sites included on the N.I.A.H. Garden Survey (Historic Gardens and Designed Landscapes), including in particular Summer Ville (Reg. No. 1561).

This assessment should include a description of the predicted impacts (direct and in-direct) and any mitigation measures proposed. Additional photomontages may be required to assess the visual impacts on viewpoints of key significance.

The following additional information should also be included in the revised Chapter 14:

- d. Details of any mitigation measures proposed regarding existing architectural heritage constraints along the Grid Connection and/or Turbine Delivery Route (including Ferry Bridge, R.P.S. Reg. No. 257, and Sixmile Bridge, R.P.S. Reg. No. 455).

**Signed:**   
Shóna O'Keeffe  
Executive Architectural Conservation Officer

**Date:** 29<sup>th</sup> October 2025

## **ENVIRONMENT SECTION (ENVIRONMENT & CLIMATE ACTION)**

**From:** Jennings, Simon

**Sent:** Friday 24 October 2025 15:35

**To:** Planning Referrals <[planningreferrals@limerick.ie](mailto:planningreferrals@limerick.ie)>; Henn, Barry <[barry.henn@limerick.ie](mailto:barry.henn@limerick.ie)>

**Subject:** 25323780 - Proposed Ballinlee Wind Farm

**Applicant Name:** Ballinlee Wind Farm

**Development Description:** a 10 year permission and an operational period of no less than 35 years from the date of commissioning of the entire wind farm. · Seventeen (17) No. wind turbines (turbine tip height of 160m, and 150m (T6 only)) with associated foundations and crane hardstand areas. · One (1) No. Permanent Meteorological Mast (92m height) and associated foundation, hardstand area and ancillary main crane hardstand area. · One (1) No. Electrical Substation (110kV) including Eirgrid compound, IPP, maintenance compounds, ancillary building, security fencing and all associated works. · Nine (9) No. site entrances. · New and upgraded internal site service tracks (approximately 10.8km of new internal access tracks to be constructed). · New clear span bridge over the Morningstar River. · Underground electric collector cable systems between turbines within the wind farm site. · Underground electric cabling systems between the wind farm site and connection point at existing Killonan 220/110kV substation. · New temporary access track via R-516 to facilitate the turbine delivery route located in the townland of Tullovin. · Three (3) No. temporary construction site compounds (one approximately 95m x 50m and two approximately 55m x 25m). · Two (2) No. borrow pits to be used as a source of stone material during construction and for storage of excess excavated materials. · Nine (9) No. permanent and two (2) temporary deposition areas. · Associated surface water management systems. · Tree felling required for wind farm infrastructure. · Whooper Swan Management Area works. · Habitat Enhancement Areas works. · Landscaping, fencing and all associated works

**Development Address:** Ballincurra, Ballingayrou, Ballinlee South, Ballinlee North, Ballinrea, Ballyreesode, Camas North, Camas South, Carrigeen, Knockuregare, Ballybane, Ballynanty, Cahirguillamore, Coolyhenan, Knockananty, Ballysimon Commons, Tullovin and Milltown, Co. Limerick.

### **Noise**

#### **Summary**

There are extensive comments regarding the noise section, Chapter 13, of the EIAR. These are summarised as follows:

- There is an error in the mapping of at least one of the proposed wind turbines, T9, and potentially the other proposed turbines in Figure 13-1. The geographic coordinates of the input and output files for the noise models should be reviewed as the error may compromise the accuracy of calculations at noise sensitive locations.
- Background noise levels at noise monitoring locations NML4 are probably higher than representative for typical low levels in the vicinity of dwellings in the southeast of the study area for higher wind speeds.
- There is a discrepancy between LCCC and the EIAR interpretations for setting of noise limits for day- and night-time.
- The proposed noise limits will potentially allow turbine noise levels to be significantly above background noise at night-time and day-time at moderate wind speeds (up to 18 dB and 14 dB, respectively, downwind at wind speeds of 6 m/s).

- New noise limits should be derived, consistent with the WEDG (2006) and ETSU-R-97 (which is referenced in the WEDG) for day-time (particularly for the setting of the fixed noise limits in *low noise environments* between 35 and 40 dB(A) L90 followed by a limit of 5 dB above background noise) and the Limerick Development Plan 2022-2028 for night-time, and an assessment of any expected exceedances based on the calculated noise levels.
- Proposals should be submitted for mitigation measures to ameliorate exceedances of the noise criteria where they may exist.
- In the event that any planning is granted then background noise from monitoring location NML4 should not be used to determine specific noise levels for nearby dwellings for the assessment of operational compliance. Ideally a background noise monitoring survey should be undertaken again for the southeast of the study area, or the nominal background criteria used in the determination of specific noise levels.
- Consideration should be given to the UK's Mineral Policy Statement 2 for the setting of noise limits from construction.

Recommendations are included at the end of this report.

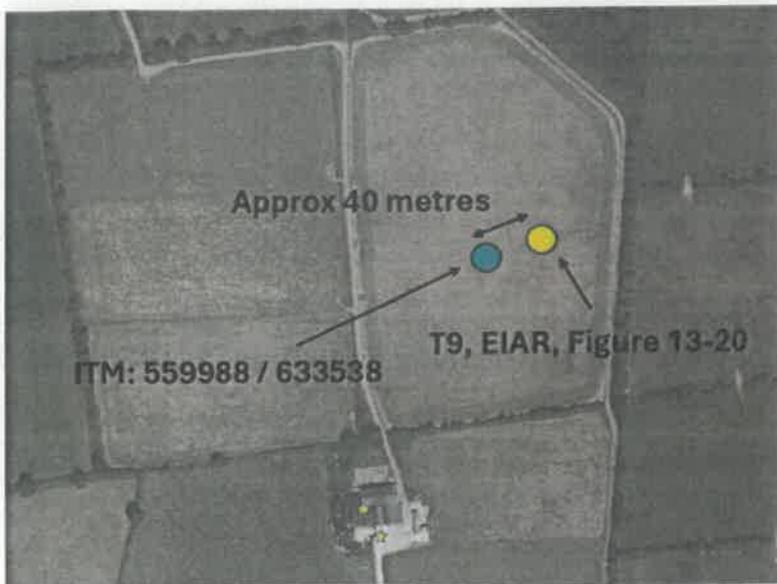
### **Mapping**

There is an error in the mapping of at least one of the proposed turbines in Chapter 13 of the EIAR. Figure 13-1 provides a mapped overview of the seventeen proposed turbine locations and the noise sensitive locations in the study area. It is difficult to determine the exact location of the proposed turbines in the figure due to the type of symbol used and the scale of the image. However, a more precise location for at least one of the proposed turbines, T9, is presented in Figure 13-20 (Figure 1 below), with its Irish Transverse Mercator (ITM) geographic coordinates provided in Table 13-24 (559988 / 633538).



**Figure 1. Figure 13-20 of EIAR.**

T9 is plotted in Figure 13-20 approximately 40 metres northeast of the actual location of the ITM coordinates in Table 13-24 (Figure 2).



**Figure 2. Discrepancy in location of proposed turbine T9.**

It appears that the noise sensitive receptors have been plotted correctly in the EIAR (e.g. NSLO56 in Figure 13-18 and NSLO61 in Figure 13-17, plotted from ITM coordinates in Appendix 13C). It is recommended that the consistency of the geographical projections used for all input and export files for the noise calculation model are reviewed to ensure the accuracy of predicted sound levels at noise sensitive locations and the noise contour plot in Appendix 13E.

### **Assessment of Background Noise**

The *Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise* (GPG) outlines recommendations for siting measurement equipment. ETSU-R-97 (*The Assessment and Rating of Noise from Wind Farms*) and the GPG are referred to being considered in the noise report. The GPG states in part that:

*“Equipment should be placed at outdoor positions where noise levels are representative of typical ‘low’ levels likely to be experienced in the vicinity of a dwelling (or group of dwellings if the measurements are intended to be applied to more than one dwelling). The overriding consideration is that it can reasonably be claimed, from inspection and observation, that there are no other suitable noise-sensitive locations”;*

and

*“The influence of noise from local sources should be taken into account when selecting measurement locations.”*

There is the potential that at higher wind speeds that the vegetation/hedgerow immediately adjacent to Noise Monitoring Location 4 (NML4) potentially will have influenced background sound levels at least at higher wind speeds. NML4 is possibly not representative of the ambient noise conditions at the dwelling that monitoring equipment was located. That location provides some of the highest average noise levels calculated at high wind speeds (i.e. that location is potentially effected by nearby vegetation).

A fourth order polynomial has been used to determine the regression curves for the day-time background noise levels for the six noise monitoring locations. However, a third order polynomial has been used to derive the regression curves for the night-time background noise levels. A fourth order polynomial for the night-time background noise regression curves would be more consistent with the day-time regression curves given the limited data at higher

wind speeds. The coefficient of determination ( $R^2$  value) for the regression curves for night-time (and day-time) are not particularly high (day-time  $R^2$  values are generally higher than the night-time  $R^2$  values) and may be improved by using a fourth order polynomial regression curves. Consequently, the derived average background noise levels at higher wind speeds for night-time are possibly higher than expected at higher wind speeds (9 and  $\geq 10$  m/s). It is recommended to review the impact on the coefficient of determination ( $R^2$  value) and noise levels at higher wind speeds by applying a fourth order polynomial to the night-time background noise regression curves.

The GPG and ETSU-R-97 provide recommendations for the temporal filtering of day-time and night-time background noise data to ensure its representativeness. The periods of time and days used to filter day-time and night-time data for the background survey are not clarified in the EIAR. It is recommended that the periods of time used to filter the background noise data are clarified. It is indicated that the wind speed measurements have been corrected to a standardised 10 metres height to account for wind shear in accordance with the GPG.

### **Wind Turbine Noise**

The candidate turbine type is the Vestas V136 with tip heights and hub heights of 160 metres and 92 metres respectively, except for turbine T6 with a tip height and hub height of 150 metres and 82 metres. This will not necessarily be the final turbine type selected which will be decided after any planning is granted during procurement.

The sound power levels at hub height integer wind speeds have been provided but no details have been provided how hub height sound power levels were converted to a standardised 10 metres height. The method used to convert the hub height sound power levels to 10 metres standardised height should be clarified.

### **Setting of Noise Limits**

The wind turbine noise criteria in the EIAR is derived based on the lowest background day- and night-time noise levels from the noise monitoring locations (NML1 to NML6), termed the nominal criteria. The wind turbine noise criteria in the EIAR is derived based on the lowest background day- and night-time noise levels from the noise monitoring locations (NML1 to NML6), termed the nominal criteria.

The EIAR states that:

*“As outlined in Section 13.2.2, the recommended best practice noise limits for the proposed development, shall be a combination of guidance provided in WEDG 2006, ETSU, IOA GPG and SGNs”* (Where SGNs are the Supplementary Guidance Notes to the Institute of Acoustics (IOA) GPG).

There is a discrepancy between the EIAR and LCCC approaches for deriving wind turbine noise limits, including the consideration of:

- the setting of day-time low noise fixed limits;
- the Limerick Development Plan 2022-2028 and setting of night-time limits.

### **Day-time low noise environments**

The WEDG (2006) makes a broad preliminary statement that a lower fixed limit of 45 dB(A) or a maximum increase of 5dB(A) above background noise at nearby noise sensitive locations is considered appropriate to provide protection to wind energy development neighbours. It then goes on to detail the methodology and limits in detail by taking those from the UK Guidance (ETSU-R-97) which is referenced in Appendix 6 of the WEDG.

Background noise levels at the noise monitoring locations for this proposal are all below 30 dB(A) L90 at low to moderate wind speeds (up to 6 m/s at a standardised 10 metres height). In relation to low background noise environments the WEDG (2006) state:

*“in low noise environments where background noise is less than 30 dB(A), it is recommended that the daytime level of the LA90, 10min of the wind energy development noise be limited to an absolute level within the range of 35-40 dB(A).”*

The purpose of low noise fixed limits is meant to protect residents in quiet rural areas from excessive wind turbine noise while still allowing for wind energy development. The limits are considered to provide a reasonable degree of protection and aims to balance the need for renewable energy with local amenity.

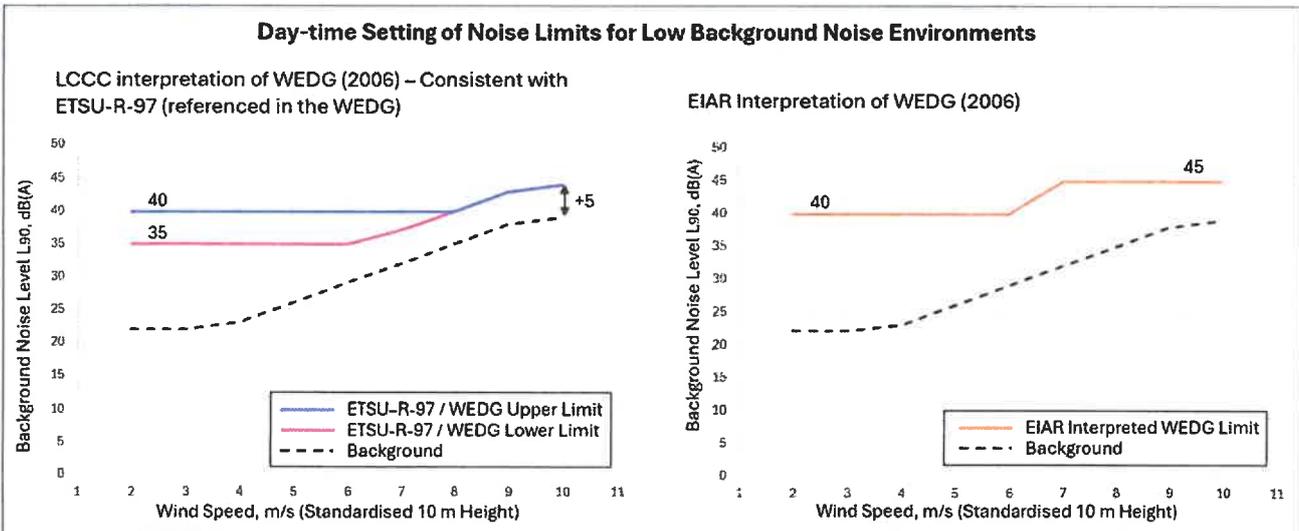
There is no discussion in the WEDG how to determine an appropriate limit between 35 and 40 dB(A) but ETSU-R-97 states:

*“The actual value chosen within this range should depend upon a number of factors:*

- 4. the number of noise-affected properties;*
- 5. the potential impact on the power output of the wind farm; and*
- 6. the likely duration and level of exposure.”*

These three factors are not considered in the EIAR. The 40 dB(A) L90 limit is selected based on the EPA's *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)* recommends a 45 dB(A) Leq limit for “*areas of low background noise*”, and a 40 dB(A) L90 limit will be 5 dB below that. This approach is flawed though because the criteria for “*areas of low background noise*” in NG4 is that the background noise level shall be  $\leq 40$  dB(A) L90 which is 10 dB above the “*low noise environment*” criteria in the WEDG (a 10 dB reduction is an expected halving of perceived loudness for the average listener). There is a discrepancy between the two terms “*areas of low background noise*” in NG4 and “*low noise environment*” in the WEDG although they sound similar. There is a significant number of noise sensitive properties in the study area, many of which are downwind of turbines under predominantly southwesterly wind conditions.

The implication of a *low noise environment* is that for the wind speeds that the background noise is less than 30 dB(A) L90 the absolute noise limit should be between 35 and 40 dB(A) L90 but otherwise the noise limit should not be 5 dB above background noise (Figure 3, left). This is interpreted differently in the EIAR (Figure 3, right) suggesting that any time the background noise level is below 30 dB(A) L90 the turbine noise limit should be 40 dB(A) L90 - but could arguably be as low as 35 dB(A) L90) then - when the background noise level exceeds 30 dB(A) the turbine noise limit rises to 45dB (background noise level is 31 dB dB(A) L90 at 6 m/s). The EIAR approach allows wind turbine noise levels to be 18 dB above background noise at 2 m/s, reducing to 11 dB at 6 m/s, but then increasing again to 13 dB headroom at 7 m/s because the background noise has risen slightly above 30 dB(A). It is the opinion of LCCC that the EIAR approach to setting noise criteria is contrary to providing a reasonable degree of protection to residents.



**Figure 3. Discrepancy between the interpreted day-time noise limits for low background noise environments between LCCC (based on Figure 10 in ETSU-R-97) and the EIAR.**

As mentioned above, the approach to setting noise limits for *low noise environments* at day-time originates from the ETSU-R-97 guidance. The lower limit of 35 dB(A) or 40 dB(A) should be followed by a limit of 5 dB above background noise.

**Night-time noise limit**

In relation to setting night-time noise limits, the requirement in the Limerick Development Plan (LDP) 2022-2028 is that there shall be a lower fixed noise limit of 38 dB(A) L90 or 5 dB above background noise levels, whichever is the greater. The purpose of the different (outside) LDP lower fixed night-time noise level of 38 dB(A) L90 is because the WEDG (2006) fixed night-time noise limit of 43 dB(A) L90 was based on UK planning guidance PPG24 (to protect sound inside bedrooms below an average of 35 dB(A) Leq through an open window) which was subsequently repealed. The lower fixed noise level for night-time required by the LDP will protect sound levels inside bedrooms in line with recommendations in BS8233:2014 *Guidance on sound insulation and noise reduction for buildings*, below the recommended target internal level of 30 dB(A) Leq through an open window. The purpose of the LDP lower fixed night-time noise limit of 38 dB(A) L90 is not to be conservative to take account of any special audible characteristics as suggested in the EIAR.

**Assessment of wind turbine noise levels against noise limits**

The LCCC and EIAR interpretation of the wind turbine noise limits are presented in Table 1 along with the highest calculated wind turbine noise levels for at three noise sensitive locations that, not financially involved (NSL065, NSL370, NSL422), and are reported to be expected to marginally exceed the EIAR noise criteria.

**Table 1. Predicted wind turbine noise levels, LCCC and EIAR interpreted noise criteria and any exceedances of the criteria (highlighted bold and underlined).**

Wind Speed (standardised 10m H), m/s	3	4	5	6	7	8	9	10
Background Day-time L90, dB(A)	22	23	26	29	32	35	38	39
Background Night-time L90, dB(A)	19	20	22	24	28	32	37	42
LCCC Upper Day-time Noise Limit L90, dB(A)	40	40	40	40	40	40	43	44
LCCC Lower Day-time Noise Limit L90, dB(A)	35	35	35	35	37	40	43	44
LCCC Night-time Noise Limit L90, dB(A)	38	38	38	38	38	38	42	47
EIAR Day-time Noise Limit L90, dB(A)	40	40	40	40	45	45	45	45
EIAR Night-time Noise Limit L90, dB(A)	43	43	43	43	43	43	43	43
<b>NSL065</b> - Predicted Wind Turbine Noise L90, dB(A)	28.4	30.1	36.8	40.1	41.2	41.2	41.2	41.2
Exceedance LCCC Upper Day-time Limit, dB	-11.6	-9.9	-3.2	0.1	1.2	1.2	-1.8	-2.8
Exceedance LCCC Lower Day-time Limit, dB	-6.6	-4.9	1.8	5.1	4.2	1.2	-1.8	-2.8
Exceedance LCCC Night-time Limit, dB	-9.6	-7.9	-1.2	2.1	3.2	3.2	-0.8	-5.8
Exceedance EIAR Day-time Limit, dB	-11.6	-9.9	-3.2	0.1	-3.8	-3.8	-3.8	-3.8
Exceedance EIAR Night-time Limit, dB	-14.6	-12.9	-6.2	-2.9	-1.8	-1.8	-1.8	-1.8
Exceedance of WTN Level Above Day-time Background Noise	6.4	7.1	10.8	11.1	9.2	6.2	3.2	2.2
Exceedance of WTN Level Above Night-time Background Noise	9.4	10.1	14.8	16.1	13.2	9.2	4.2	-0.8
<b>NSL370</b> - Predicted Wind Turbine Noise L90, dB(A)	28.7	30.4	37.1	40.4	41.5	41.5	41.5	41.5
Exceedance LCCC Upper Day-time Limit, dB	-11.3	-9.6	-2.9	0.4	1.5	1.5	-1.5	-2.5
Exceedance LCCC Lower Day-time Limit, dB	-6.3	-4.6	2.1	5.4	4.5	1.5	-1.5	-2.5
Exceedance LCCC Night-time Limit, dB	-9.3	-7.6	-0.9	2.4	3.5	3.5	-0.5	-5.5
Exceedance EIAR Day-time Limit, dB	-11.3	-9.6	-2.9	0.4	-3.5	-3.5	-3.5	-3.5
Exceedance EIAR Night-time Limit, dB	-14.3	-12.6	-5.9	-2.6	-1.5	-1.5	-1.5	-1.5
Exceedance of WTN Level Above Day-time Background Noise	6.7	7.4	11.1	11.4	9.5	6.5	3.5	2.5
Exceedance of WTN Level Above Night-time Background Noise	9.7	10.4	15.1	16.4	13.5	9.5	4.5	-0.5
<b>NSL422</b> - Predicted Wind Turbine Noise L90, dB(A)	28.7	30.4	37.1	40.4	41.5	41.5	41.5	41.5
Exceedance LCCC Upper Day-time Limit, dB	-11.3	-9.6	-2.9	0.4	1.5	1.5	-1.5	-2.5
Exceedance LCCC Lower Day-time Limit, dB	-6.3	-4.6	2.1	5.4	4.5	1.5	-1.5	-2.5
Exceedance LCCC Night-time Limit, dB	-9.3	-7.6	-0.9	2.4	3.5	3.5	-0.5	-5.5
Exceedance EIAR Day-time Limit, dB	-11.3	-9.6	-2.9	0.4	-3.5	-3.5	-3.5	-3.5
Exceedance EIAR Night-time Limit, dB	-14.3	-12.6	-5.9	-2.6	-1.5	-1.5	-1.5	-1.5
Exceedance of WTN Level Above Day-time Background Noise	8.4	14.1	14.4	12.5	9.5	6.5	3.5	2.5
Exceedance of WTN Level Above Night-time Background Noise	11.4	17.1	18.4	17.5	13.5	9.5	4.5	-0.5

There are expected to be marginal exceedances of the predicted wind turbine noise above the EIAR day-time noise criteria without any mitigation (up to 0.4 dB at 6 m/s for NSL370 and NSL422). Greater exceedances are expected based on the LCCC interpreted day-time noise criteria (up to 5.4 dB above the lower noise fixed limit at 6 m/s for NSL370 and NSL422 and up to 1.5 dB above the upper noise fixed limit at 6 m/s for the same NSLs) and night-time noise criteria (up to 3.5 dB above at 7 and 8 m/s).

Arguably a day-time fixed noise limit below the upper 40 dB(A) limit should apply given that there is up to a 14 dB difference between the predicted wind turbine noise and background noise at low to moderate wind speeds (at 5 m/s). The predicted wind turbine noise levels will potentially be up to 18 dB above background noise at night-time. These are levels that will be perceived as greater than a doubling of loudness above background noise outdoors by the average listener (nearly a quadrupling of loudness at night-time).

It is recommended that the LCCC approach to setting noise limits is adopted and that noise mitigation measures are identified to ensure that predicted wind turbine noise levels do not exceed those new noise limits.

### **Special Audible Characteristics**

Special audible characteristics (SACs) including tones, amplitude modulation (AM), low frequency noise (LFN) and infrasound are discussed in the EIAR as well as a summary of applicable guidance for their assessment. It is not possible to predict the occurrence of any SACs, if they occur, at the planning stage and also without knowing the final turbine type (for tones). It is recommended in the EIAR that *post-construction monitoring programmes and campaigns following prescribed guidelines can objectively investigate these characteristics and appropriate mitigation measures can be identified and implemented at that time.*

It is recommended by LCCC that if any planning is granted then a condition should be attached to support the Planning Authority and require the investigation of special audible characteristics (including amplitude modulation, low frequency noise and tones) in the event of a complaint regarding any or all of those characteristics.

### **Construction Noise**

The EIAR indicates the consideration of the use of *BS 5228-1:2009 + A1:2014 Code of practice for noise and vibration control on construction and open sites - Part 1 (Noise)* for the control of construction and decommissioning noise, specifically the 'ABC Method' in *Annex E*. It is likely that a day-time noise limit of 65 dB(A)  $L_{eq}$  will apply (Category A values) over much of the study area based on the background noise monitoring results. This is a limit that will be approximately 35 dB greater than the lowest background noise levels at noise sensitive locations. Even though a pragmatic approach needs to be taken for construction noise, because it is transitory, it is arguable that if it is permitted to be 35 dB above background noise levels it might have a significant adverse effect at the nearest noise sensitive properties.

While the EIAR indicates that the construction and decommission processes of wind farms will not likely have an adverse impact, the types activities outlined in the Draft WEDG (2019) are similar in nature to mineral extraction, rather than conventional construction activity. It is also indicated in *BS 5228-1:2009 + A1:2014* that where construction works involve long-term and substantial earth moving then the civil works are more akin to surface mineral extraction than to conventional construction activity (Section E.5) and that the use of Mineral Policy Statement 2 needs to be taken into account when setting noise criteria for acceptability. Types of construction and decommissioning works that are identified in the Draft WEDG (2019) include:

- Ground disturbance during construction including excavation of soil and rock;
- Management and treatment of rock and soil excavated during construction work (e.g. crushing);
- Storage and transfer of material, including use of bunded storage areas for use during construction and operational phases to avoid any pollution of surface or ground waters;
- Construction of site access tracks for removal of excavated material, and importation of materials, machinery and construction of hardstandings;
- Reinstatement of the site where construction works result in ground disturbance/surface damage or erosion

It is suggested in *BS 5228-1:2009 + A1:2014* that a limit of 55 dB  $L_{Aeq,1hr}$  should be adopted for day-time construction noise for these types of activities where the works are likely to occur for a period greater six months. The length of time of the construction stage for a wind farm depends on the size and complexity of a project. If it is considered that construction or decommissioning will last for a period of six months or longer the planning authority recommends that a day-time limit of 55 dB  $L_{Aeq,1hr}$  should be conditioned. at noise sensitive locations.

### **Operational Compliance Monitoring**

It is the opinion of LCCC that the background noise levels from noise monitoring location NML4 is possibly not representative of background noise in the external amenity of dwellings nearby.

Background noise levels are required for the assessment of compliance if operational noise levels exceed the noise criteria and specific noise levels need to be determined. If operational wind turbine noise levels (background + specific noise levels) exceed the noise criteria then background noise levels are logarithmically subtracted from the operational noise levels to establish noise levels specifically from the turbines. However, if background noise levels are higher than they actually are then the specific noise levels will be calculated as artificially low i.e. specific noise levels will be below their real value.

In the event of an assessment of compliance at noise sensitive locations then background noise data from NML4 should not be used to determine specific noise levels for dwellings nearby. Background noise monitoring to the southeast of the proposed development should be undertaken again or it should be agreed that the nominal background noise levels in the EIAR will be used to determine specific noise levels where necessary in the assessment of operational compliance.

### **Recommendations**

The planning authority recommends that the following further information is requested:

- Clarify the consistency of the geographical projections used for all input and export files for the noise calculation model to ensure the accuracy of predicted sound levels at noise sensitive locations and the noise contour plot in Appendix 13E.
- Clarify the temporal periods used to filter background noise data for the noise monitoring locations. If they do not meet the recommendations of the *Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise (GPG)* then it is recommended that the determination of background noise levels are recalculated. It is noted that background noise levels from noise monitoring location NML4 (immediately adjacent to vegetation) are expected to be higher than representative of typically low levels in the vicinity of dwellings at the southeast of the study area at higher wind speeds.
- Review the impact on the coefficient of determination ( $R^2$  value) and noise levels at higher wind speeds by applying a fourth order polynomial to the night-time background noise regression curves.
- The Wind Energy Development Guidelines (WEDG, 2006) reference ETSU-R-97 for the determination of noise limits. It is the planning authority's opinion that the day-time wind turbine noise limits should be derived being consistent with the ETSU-R-97 approach. The implication of a *low noise environment* is that for the wind speeds that the background noise is less than 30 dB(A) L90 the absolute noise limit should be between 35 and 40 dB(A) L90 but otherwise the noise limit should not be 5 dB above background noise (Figure 3 of main report above).
- There is a discrepancy between the two terms "*areas of low background noise*" in the EPA's *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)* and "*low noise environment*" in the WEDG (2006) although they sound similar. The approach to set the day-time lower noise fixed limit at 40 dB(A) L90 is flawed though because the criteria for "*areas of low background noise*" in NG4 is that the background noise level shall be greater or less than 40 dB(A) L90 which is 10 dB above the "*low noise environment*" criteria in the WEDG. It is the planning authority's opinion that the approach in ETSU-R-97 should be used to derive the day-time lower noise fixed limit between 35 and 40 dB(A) L90.

- Clarify the method used to convert the hub height sound power levels to 10 metres standardised height for the candidate wind turbines.
- Mitigation measures should be identified to ensure that wind turbine noise limits will not exceed any new day-time and night-time noise limits at any noise sensitive locations.
- Clarify the proposed period of construction for the proposed wind energy development. If works are proposed to last for a period of six months or longer the planning authority recommends that a day-time limit of 55 dB *L<sub>Aeq,1hr</sub>* will apply at noise sensitive buildings.
- Background noise monitoring at the southeast of the proposed development should be undertaken again or it should be agreed that the nominal background noise levels (the lowest background noise levels in the study area) will be used to determine specific noise levels where necessary in the assessment of operational compliance at noise sensitive locations.

The above work shall be undertaken by a suitably qualified acoustic engineer.

### **Further Recommendations**

Further recommendations to support the planning authority assess compliance in the event of any planning being granted include that:

- The technical specification of the final selected turbines to be agreed with the planning authority before construction commences, including details of the potential for audible tones.
- The sound power of the final wind turbines selected is not greater at any wind speed than the candidate turbines used for the noise assessment in the EIAR.
- In the event of a noise complaint that the planning authority should have access to wind farm operational data (details to be agreed with the Planning Authority).
- In the event of the planning authority notifying the operator of a complaint regarding noise levels and/or special audible characteristics the operator will be required to engage a suitably qualified acoustic engineer to prepare a noise monitoring protocol to be agreed with the planning authority within a specified timeframe. In the event of a complaint the planning authority shall have the discretion to require temporary switching on and off of turbines during hours, specified by the planning authority, to allow for testing to take place for noise monitoring purposes.

### **Shadow Flicker**

An assessment has been carried out to establish sensitive buildings where shadow flicker may exceed recommendations in the WEDG (2006), that is exposed to 30 hours per year or 30 minutes per day of shadow flicker per day. Based on a worst-case scenario it is reported that *“the 30-hour threshold limit per year may be reached or exceeded at 100 locations”* and that *“Theoretically 99 houses are expected to exceed the 30-hour threshold limit per year and 126 are expected to exceed the 30-minute threshold per day”*. Table 15.2 includes the maximum (worst-case) hours per day of shadow flicker, maximum minutes per day of shadow flicker and what is termed a realistic maximum hours per day of shadow flicker (29% of the maximum hours per day of shadow flicker – no reference is made to where the 29% originates). This realistic model assumes that *“In reality the sun is not always visible and often covered by clouds and therefore, the actual number of shadow flicker hours that a receptor experiences is lower than what the conservative software model simulate”* as well as other factors such as wind turbine operational conditions and the potential for screening by vegetation. However, the assumption does not take account of days that the sun is not covered by clouds and operational conditions (e.g. the directions the turbines are facing) and vegetation are such that the worst-case does occur. It is proposed that mitigation measures

will be implemented to ensure shadow flicker meets the requirements of the WEDG (2006) for the 99 properties referred to above. However, it is not clear whether the proposed mitigation is based on ameliorating the worst-case scenario or the realistic scenario. The scenario termed *realistic* may not protect sensitive locations on days where the worst-case scenario does occur (e.g. 100% sunshine including worst-case operational and non-vegetation screening conditions). It is noted in the EIAR that “*Should the Draft Revised Wind Energy Development Guidelines (2019) be formally adopted, the same control system can be adapted to meet the updated requirements*”.

### **Recommendation**

The LDP 2022-2028 indicates that cognisance should be had to the WEDG (2006) and Draft Revised Wind Energy Development Guidelines (2019). The planning authority recommends that measures to provide for automated turbine shut down to eliminate shadow flicker at any nearby dwelling, including for the period of time it takes for the blades to stop rotating after turbines are shut-down should be required as a condition of any grant of permission.

Regards,

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## **Planning Application Internal Report**

**Planning Ref:** 25/323780 SID

**Applicant:** Ballinlee Energy

**Development Description:** 17 Wind Turbines

**Report Prepared By:** T O Neill Heritage Officer

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### **Comments:**

**General:** the lack of regional guidance for what are now increasingly large wind energy and other renewable applications is a huge gap for Planning Authorities attempting to assess ever larger and more complex applications which, depending on size and location, now may have regional and landscape level effects. This is a gap which should be filled, in order to adequately inform county level strategies and enable Planning Authorities to adequately assess these applications. In the absence of such guidance individual assessments will lack context. The fact that the wind energy guidance is still in draft format does not help matters.

**EIA Chapter 6 Biodiversity:** Noted that habitat surveys took place at an optimal time i.e. during August and September 2023 and were updated in July 2025, which is consistent with good practice. Hedgerow assessment also took place, using the Hedgerow Appraisal System which is welcomed, as these can be an important habitat feature particularly on lowland sites in Limerick, as are drainage ditches.

Bat surveys were carried out in 2023 but were not subsequently updated which means they are now over two years old. Given the mobile nature of bats and that lowland (rather than upland) wind turbine applications pose a greater risk to bats this is a gap in the ecological analysis and in my view requires a more up to date survey to ensure mitigation measures are adequately informed. The fact that badger surveys were updated in July 25 is noted (p. 6-38). The opportunity should have been taken to update the bat surveys.

The inclusion of a carcass survey and post construction monitoring (which might be difficult to achieve in practice) for bats as outlined in S6.9.3.2 (p. 6-202) is a welcome addition and should be included in any conditions. It does not make up for the two year time gap since the last assessment.

Amphibian surveys and searches for frog spawn took place on 2<sup>nd</sup> of February 2023. Given that drainage ditches will be removed this survey should have been repeated this spring. Should permission be granted it is recommended that a survey of these ditches for amphibians, in particular frogs, takes place at an opportune time before development works begin. The removal of 1.3 km of drainage ditches within the development site is noted. While it is noted (Figure 6-32, p. 6-194) that new water features will be created it would be best if they could be more widely distributed throughout the site, rather than concentrated in Area 3 as shown on the map.

On page 6-62 it is noted that Whooper Swans roosting in Lough Gur are within foraging range of the development site. Though this species has been singled out it is likely that other wild fowl species might also use the site. From the flood report it is noted that 4 turbines of the 17 total lie within Flood

Zones A and B. Flooding often attracts wildfowl for which the turbines may pose a displacement or collision risk. This is an aspect of the development which merits further examination. The potential for badger and otter disturbance is noted. See above in relation to additional water features. The construction of artificial setts (outlined in S.6.8.1.6) is welcomed.

All of the mitigation measures shown in Section 6.8 should be implemented, with as noted above, a more widely distributed network of water features such as ponds. More specific detail is required in relation to the two borrow pits mentioned, in particular during their operational phase and further examination of specific mitigation measures for these should be detailed. The employment of an EcCOW is essential to ensure mitigation measures are properly applied.

**Chapter 7 Ornithology:** the bird surveys were comprehensive and carried out over a number of years and were less than a year old prior to submission. However, I think one deficiency remains in that the issue of flooding and its potential for attracting wildfowl to the development site needs further examination. The importance of flooding for wildfowl is acknowledged in the chapter (p.73) which mentions that “intermittent flooded areas within the Development site provide foraging and roosting habitat for water-dependent species, particularly during wetter periods”

It is noted that there was a concentration of Whooper Swan activity close to the site of the proposed Turbine 3, during nighttime (midnight to 1.00 AM, December 2023) which increases the collision risk.

The mitigation measures out-lined in section 7.7 should be implemented in full should permission be granted. I’m unsure of how the management areas (Table 7-13 and Figure 7-8) for the whooper swans will work. On the face of it they will provide valuable habitat and for other species as well but given the swans and other species tendency for night flight and the location of the management area close to the development, this may well increase collision risk, for them and other species which may use it. This is a factor which requires further examination.

Post monitoring seems to concentrate on swans (pp.95, S7.8.2). this should be broadened to include all wildfowl species. Changed conditions on the site post development may increase the attractiveness of the area for a wider variety of bird species. Section 7.8.2.1 Collision Risk Monitoring is essential, should permission be granted and should be the subject of a specific condition.

**NIS:** unsure of how the author could conclude that the SAC otter population presumably those associated with the Shannon would travel as far as the site. Whether they do or not is a moot point as the otter is a QI of the SAC and may well have broader range than the literature on the topic indicates. All of the measures included in S6.3 Mitigation should be included as a condition. The pre-construction survey for otters (and Amphibians as noted in comments on the EIAR) is regarded as essential.

There seems to be no specific mention of the Whooper Swan Management Works in the mitigation measures of the NIS, though they were mentioned in passing earlier in the document. This omission is notable and should be clarified. They were dealt with in more detail in the EIAR.

**Recommendation:**

That the gaps identified in the information provided be filled to enable assessment of the project. Such as issues as the role of flooding attracting wildfowl to the site, how the management area for whooper swans will work all need further assessment.

**Signed** T O Neill M. Phil, M.Agr. Sci, MSc (Ecol), MA, Dip EIA Mgmt.  
**Date:** 20/11/2025

# **ENVIRONMENT AND CLIMATE ACTION (AIR, DANGEROUS STRUCTURES, NOISE, PUBLIC HEALTH & WATER POLLUTION)**

**From:** O'Grady, Paul <paul.ogrady@limerick.ie>  
**Sent on:** Tuesday, October 21, 2025 2:26:46 PM  
**To:** plandev <planning@limerick.ie>  
**CC:** Finnin, Kate <kate.finnin@limerick.ie>; Mellett, Arlene <arlene.mellett@limerick.ie>  
**Subject:** [INSPECTION 112664] PLANNING - Observations for P 25 323780 - Proposed Ballinlee Wind Farm

I have reviewed both the Environmental Impact Assessment (EIA) Report and the Appropriate Assessment (AA) Screening Report.

I note the references to:

a) "Uncontrolled releases of sediments and/or other pollutants to air due to earthworks" and

b) "elevated levels of noise, airborne particles, and ground disturbance associated with excavation, rock blasting, drilling, or similar groundworks" at the construction stage.  
No air pollution or air quality issues are anticipated during the operational phase.

Given the above, subject to best practice being followed at the construction phase, I have no further observations at this time.

Regards,

Paul O'Grady

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**Paul O'Grady**  
**Executive Engineer (Air, Dangerous Structures, Noise, Public Health & Water Pollution)**  
**Environment & Climate Action Department**  
**Authorised Person (Current Order No.: ENVI 457-2022)**



Comhairle Cathrach  
& Contae Luimnigh

Limerick City  
& County Council

Council Offices  
Dooradoyle Road  
Dooradoyle  
LIMERICK  
V94 WV78

**Directions:** <https://goo.gl/maps/m2qreyw2XCx>

**Public Transport:** City Bus Routes [301](#), [304](#) and [304A](#)

## **COUNCIL FIRE OFFICER**

**From:** Kiely, Antoin <antoin.kiely@limerick.ie>  
**Sent on:** Tuesday, October 21, 2025 9:56:05 AM  
**To:** Planning Referrals <planningreferrals@limerick.ie>  
**CC:** fireservice <fireservice@limerick.ie>  
**Subject:** FW: 25323780 New Referral Deadline 05 11 2025 planningreferrals@limerick.ie  
**Attachments:** 25323780 Referral.pdf (201.93 KB)

**Re :** 25323780

**Applicant Name:**

Ballinlee Wind Farm

**Development Description:**

a 10 year permission and an operational period of no less than 35 years from the date of commissioning of the entire wind farm.  
The Fire Service has no objection to this planning application.

**Antóin Kiely | Fire Officer**

**Limerick Council Fire & Emergency Services**

**Lissanilla House**

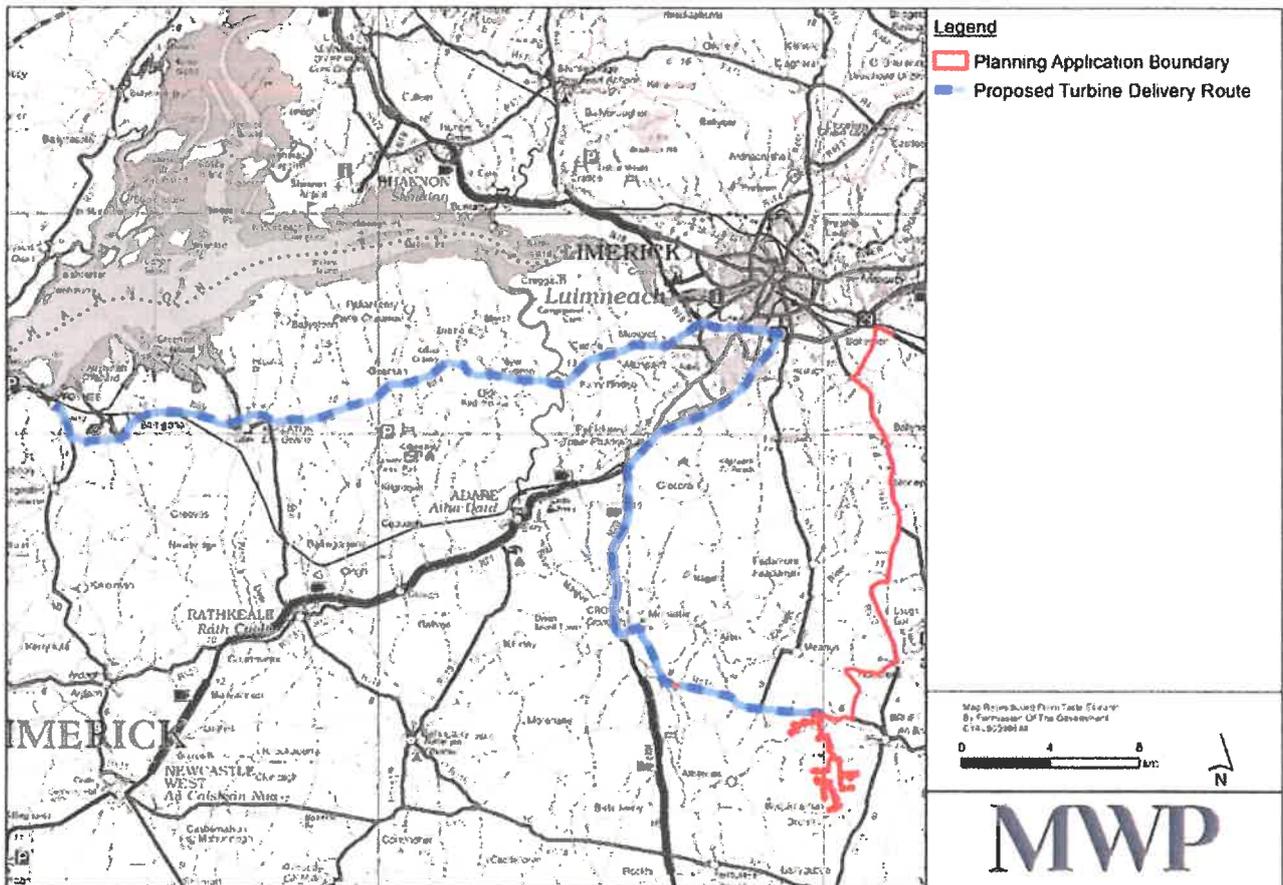
**Dooradoyle Road**

**Limerick**

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### Appendix 3: Turbine Delivery Route

Below: Turbine Delivery Route – Port of Foynes (taken from submitted Planning Statement)



**Appendix 4: Administrator's Minutes – Limerick City and County Council  
Meeting 27<sup>th</sup> November 2025**

**TO WHOM IT MAY CONCERN**

**Re: ACP-323780-25 Proposed Strategic Infrastructure Development - 10 year planning permission for Ballinlee Wind Farm consisting of 17 no. wind turbines, a permanent 110kV substation and ancillary development located in Ballincurra, Ballingayroure, Ballinlee North & South, Ballinrea, Ballyreesode, Camas North & South, Carrigeen, Knockuregare, Ballybane and other townlands in County Limerick.**

I hereby certify that the following is a true extract from the Minutes of Special Meeting of Limerick City and County Council held on 27<sup>th</sup> November, 2025.

Signed:   
Ciara Farrell  
Meetings Administrator

Date 05 December, 2025



**MINUTES OF PROCEEDINGS AT SPECIAL MEETING OF LIMERICK CITY AND COUNTY COUNCIL HELD IN THE COUNCIL CHAMBER, DOORADOYLE, AND ONLINE, ON THURSDAY, 27<sup>th</sup> NOVEMBER, 2025, AT 4.00 P.M.**

**PRESENT IN THE CHAIR:**

Leas Príomh Chomhairleoir Councillor M. Collins.

**MEMBERS PRESENT:**

Mayor Moran.

Councillors, Butler, Carey, Collins (B), Collins (M), Conway, Hartigan (S), Hartigan (T), Kiely, Kilcoyne, McSweeney, O'Donoghue, O'Hanlon, O'Sullivan (O), O'Sullivan (T), Pond, Reale, Ruddle, Ryan (E), Scanlan, Sheahan (J), Stokes, Teefy and Teskey.

**OFFICIALS IN ATTENDANCE:**

Director General (Dr. P. Daly), Deputy Director General and Director, Corporate Services, HR and Organisational Development (Mr. J. Delaney), Director, Finance, Investment and Governance including DACs and Shareholder Unit (Mr. M. White), Director, Housing (Mr. V. Murray), Economic, Tourism, Culture, Property and Corporate Buildings (Mr. S. Lenihan), Director, Transportation, Mobility and Public Realm (Ms. P. Liddy), Director of Regeneration, Community, Sport and Rural Development (Mr. B. McCarthy), Director, Planning and Ryder Cup (Mr. S. Duclot), Meetings Administrator (Ms. C. Farrell), Administrative Officer, Corporate Services, Governance and Customer Services (Ms. A. Foley), A/Senior Executive Planner, Planning and Place-Making (Ms. J. Collins), A/Senior Planner, Planning and Place-Making (Mr B. Henn), Senior Staff Officer, Planning and Place-Making (Ms. V. Cullen).

Apologies for their inability to attend the Meeting were received from Councillors Ryan (M) and Slattery.

**1. Strategic Infrastructure Development**

The Members were advised that the Council was being asked to consider the circulated Director General's report dated 21<sup>st</sup> November 2025, which was prepared in accordance with Section 37E of the Planning and Development Act 2000 (as amended) following on from the submission of a Strategic Infrastructure Development (SID) to An Coimisiún Pleanála, known as the Ballinlee Wind Farm.

The A/Senior Executive Planner, with the aid of a PowerPoint presentation, updated the Members on the Director General's Report. The Members thanked the Planning Department for their work on this Strategic Infrastructure Development application.

The Members made the following comments in relation to the proposed Strategic Infrastructure Development:

#### Land Use

- Members expressed a view that this development of the Wind Farm is not aligned to the current Limerick Development Plan 2022 – 2028
- Members noted concerns in relation to the impact of the ‘Preferred Areas’ for windfarm development set out in Map 9.1 Wind Energy Locations of the Limerick Development Plan 2022-2028, which covers a large area of central County Limerick, and potential conflict with updates of this map as part of the ongoing revision of the current Limerick Development Plan.
- Members queried the ‘Preferred Areas’ Map, Map 9.1 ‘Wind Energy Locations’ of the Limerick Development Plan 2022-2028, conflicts with the policies/objectives of the plan and it is noted that the Plan states where any conflict or ambiguity arises between the written text and supporting maps, the written text shall take precedence.
- Members questioned the impact of the volume and density of a 17 turbine development and the effects on the natural drainage system in the area.
- Concerns were raised in terms of potential impact of the grid connection along the public road e.g. future development along the route, provision of new entrances for residential, commercial and business developments.
- It was noted that proposals are currently working off 2006 Wind Energy Guidelines which are outdated. 80m was the maximum height for wind turbines in 2006, modern turbines are significantly higher, current proposal 150/160m.
- Members recommended that the proposal and future proposals are considered in terms of the ‘Ireland Atlas Wind Map’ [SEAI].
- It was noted the forthcoming National Territory Map for Renewable Electricity is underway and could include revisions that would be pertinent to the application.
- It was suggested that the Department of Agriculture should be consulted on the effects on agriculture in the area.
- Windfarm development should be sited on land not suitable for farming/housing.

#### Community Impact, Residential and Visual Amenity

- Members highlighted that there are approximately 42 homes within a 1.5km radius of the proposed site and raised concerns in relation to the impact of noise and shadow flicker on households and quality of life.
- Members queried the potential negative impact of the proposal in terms of future planning applications for rural housing in the area by local households.
- It was noted that there have been studies on the impact of noise and shadow flicker on wildlife but affects on people with medical and sensory issues and that the Wind

Energy Guidelines do not take these into account e.g. autism. Members suggested that the HSE should be consulted.

- In relation to the impact of infrasound from proposed development Members referenced a study on safe distances by Professor Ken Masterson.
- Members raised concerns that the automated shut down system on turbines in the event of shadow flicker were subject to delays i.e. would not shut down immediately which could lead to further exceedances of shadow flicker limits.
- Members considered that the visual impact was understated for the turbines' height.
- Members expressed concerns on the impact of the development on local heritage sites and tourist offerings, especially Lough Gur, the stone circle and Knock Áine.
  - It was noted that the submission has only one Lough Gur viewpoint photomontage (Viewpoint 19), and this was taken from behind a tree. Further viewpoints are required to assess potential impact on this protected area.
  - The sacred site of Knock Áine and viewpoints at Knock Aine were not considered in the submission.

#### Water and Flooding

- Concerns were raised in relation to recent flood events in the area and it was considered that the submitted Flood Risk Assessment should be updated.
- Members questioned the impact of the excavations for turbines and concrete bases on water seepage and on drainage and flooding in the area.
- Concerns were raised in relation to safety and water displacement by the proposed permanent deposition areas.

#### Road Safety and Construction

- Concern was expressed that additional construction traffic for an extended period will exacerbate traffic issues in the area; it was noted that the road for entrance and exit to the site is a very busy road and that there are historic bridges along the route which would be impacted.
- The risk of driver distraction due to the height and location of the wind turbines was raised.
- Members queried plans and licensing for the disposal of soil and subsoil from excavations.

#### Archaeology and Ecology

- Raised concerns with EIAR, it was noted that the submitted archaeological report, bat surveys and bird surveys were insufficient.
- Concerns in relation to potential biodiversity issues were outlined.

- Members raised the potential impacts on the Golden Vale's assets of tourism, natural beauty, equine farming, cattle farming and crop farming.

#### Accident and Emergencies

- Members were concerned that specialist Fire and Emergency Services training could be required for any construction and post construction incidents; this would have cost implications for the Local Authority.

#### Community Engagement

- Members expressed concerns in relation to the level of public consultation and considered that meaningful engagement had not taken place with the local community.

#### General

- Members highlighted mapping errors on submitted documentation e.g. towns and villages are not shown on the submitted maps giving the impression that no towns/villages exist in the area surrounding the proposed site.
- Members highlighted the lack of emphasis on the important sites at Lough Gur and Knock Áine in the submitted documentation.
- Members considered the proposal is not 'broadly supported by the Limerick Development Plan 2022-2028' as stated in the Director General's Report.

The Elected Members stated that they were not in favour of the application and recommended refusal of the proposed development. They requested that the Director General's report was amended on this basis.

On the proposal of Councillor O'Donoghue and seconded by Councillor Teefy, it was agreed that all observations outlined today would be appended to the Director General's report.

In reply to Members' queries, the A/Senior Executive Planner noted the Members comments would be included in the Director General's Report as an addendum. It was noted that the planning decision would rest with An Coimisiún Pleanála. Members were advised

that the Planning Department would circulate a deadline for submissions and append any further submissions from Members to the report.

The Director General acknowledged Members' concerns and stated he would seek legal advice on progressing the Members' request to make alterations to the Director General's report.

This concluded the Meeting.



## **Appendix 5: Elected Members Views**

### ***A. Councillor Noreen Stokes – via Email 02/12/2025***

Councillor Stokes outlines concerns in relation to health in addition to concerns in relation to noise and provides the following details in relation to same:

A Community Health study recently carried out, which identified a high-vulnerability rural population living within the proposed wind turbine impact zone. From 126 respondents (50% of respondents live within 1km zone), a significant proportion of households reported chronic and complex health needs including:

- 34 households with a diagnosis of **Autism/ neurodivergence** ; 23 households with sensory processing difficulties
- 39 households reporting mental health conditions including anxiety and depression
- 68 households report sleep disturbance

### ***B. Councillor John O'Donoghue – via Emails 01/12/2025, 02/12/2025 and 03/12/2025.***

The following reports have been submitted by Councillor O'Donoghue for consideration.

**There is an insufficient wind resource at Ballinlee to justify a wind park.**

#### **Executive summary**

In choosing the Ballinlee site the developer ignored the science based wind energy atlas. The developer did not properly measure the wind at the site and relied on a science that takes interval and instantaneous estimates of the wind speed and has no proper measurement information to justify the site selection.

The site selection appears to be based solely on the availability of land contracts and an incorrect designation of the Balinlee area as included in the regional renewable energy development plan.

The wind energy produced on this site would be just over half of the energy produced in a comparable wind plant in a proper wind regime.

The energy produced will be further reduced by the packed array of the turbines, further eroding the production of energy by between 20% and 40%.

In the absence of actual wind measurement the developer has stated a wind speed on the site based on consultation with the wind energy atlas, which the LCCC was told to ignore in the development of the renewable energy development area.

The developer's stated wind speed from the atlas is wrong.

There has rightly been a sharp focus on the health dangers posed by proximity to wind turbines and this submission questions why a community should be exposed to these serious risks to life and health for so little return.

In the preamble to the Limerick County Development Plan the Chief Executive states:

“The Submission by the Irish Wind energy Association recommend that the SEAI wind atlas or any similar general wind resource data not be used as a constraint when developing and zoning areas for renewable energy development”

Thus the LCCC development map that is the basis for wind development locating in Ballinlee, ignored science based data that clearly indicates that the Ballinlee area has a poor wind regime for wind energy generation and is geographically and socially altogether unsuitable for a wind plant. This recommendation to LCCC was provided by IWEA, a lobby group who’s sole interest is in getting wind turbines into the ground. It should be noted that in the 2006 Wind Energy Guidelines the SEAI map is referenced as an invaluable source of information in siting a windfarm.

Section 3.5 of the 2006 Wind Energy Guidelines reads:

“Assess the areas of wind potential ranging from areas with extensive wind energy resources to lesser wind resources using Sustainable Energy Ireland’s Wind Atlas for Ireland. The Wind Atlas for Ireland displays wind speeds at 50 metres, 75 metres and 100 metres above ground level”

Section 3.4 of the Guidelines reads:

“Objectives to secure the maximum potential from the wind energy resources of the planning authority’s area commensurate with supporting development that is consistent with proper planning and sustainable development;

and

“The identification on development plan maps of the key areas within the planning authority’s functional area where there is significant wind energy potential and where, subject to criteria such as design and landscape planning, natural heritage, environmental and amenity considerations, wind energy development will be acceptable in principle

When the atlas ( or any similar reference atlas ) is consulted it is immediately apparent that the wind regime at Ballinlee is weak ( Class IV in the parlance of the wind industry ). A copy of the wind atlas for the Limerick area and surrounds is appended to this submission. For reference bright colours indicate higher wind speeds and the darker colours ( blue ) indicate lower wind speeds. The Green dots on the map indicate the locations of existing wind plants and it is immediately apparent that these existing facilities are located in “hotter” and more appropriate wind regimes. Examination of the Limerick area on the atlas reveals:

- The Balinlee area is in the dark zone of the atlas showing wind speeds at 100 metres height above ground of 7.0 to 7.1 m/s, 7.1 to 7.2 m/s, 7.2 to 7.3 m/s and 7.3 to 7.4 m/s., when the cursor is placed at intervals over the Ballinlee footprint on the interactive map. This is the windspeed on the wind map indicated at 100metres height above ground and an average wind speed for the site is indicated at best of 7.25m/s. However the proposed hub height of the Ballinlee plant is 92 metres above ground and a wind shear factor needs to be applied as follows;

Wind shear formula  $V_2=V_1(H_2/H_1)^{1/p}$  to the power of the wind shear index.

Where  $V_2$  is the target wind speed

V1 is the data wind speed at the reference height

H2 is the hub height

H1 is the reference height

And The wind shear index is an empirical number based on science and observation developed by the wind industry technologists.

A mean value wind shear index for a planar site such as Ballinlee is 0.14 and therefore:

- Ballinlee hub height wind speed =  $7.25(92/100)^{0.14} = 7.165 \text{ m/s}$

It should also be noted that the formula also reveals the wind speeds at the bottom and top of the turbine sweep as 5.94m/s and 7.74m/s which is a troubling wind speed variation across the face of the wind turbine and which will lead to issues with fatigue and turbulence in the operation of the wind turbine. Wind shear indices are less accurate over larger height variations and the developer while not bothering to measure the raw wind speed on the site has employed LIDAR technology which will have given him instantaneous and short interval indications of wind speeds and wind shear at the site. The developer has not shared this information, neither indicated instantaneous/short interval wind speed nor indicated wind shear. Nevertheless he has in section three of the EIRR stated that the wind speed at the site is 7.5-7.6m/s and stated that this estimate was extracted from the wind atlas, that same atlas that the industry lobbyists told Limerick City and County Council to ignore. The statement of the wind speed is incorrect and based on the energy capture for a wind turbine the energy produced will be less than the developer is indicating as follows:

$$\text{Energy capture for a wind turbine} = 0.5AR\rho(V)^3$$

A = The swept Area

$\rho$  = the density of the motive medium

And V = The wind Speed

As a wind speed of 7.165 is 94.9% of 7.55 the energy capture will be, as a function of the cube of the wind speed or **85.46%** of what the developer is suggesting.

- Existing wind farms in the region are located in the brighter faster wind locations with wind speeds typically in the 8.5 to 8.7 metres per second speed, a mean speed 8.6m/s.

Accordingly, Ballinlee wind is 83.31% of the average for the fleet of wind farms. Under the turbine energy capture formula above the Ballinlee generation will be 57.8% of the average for the fleet of windfarms in the surrounding region. Publicly available information on wind energy in Ireland put the Irish wind fleet national capacity factor, which is the amount of energy produced by a wind turbine as a percentage of the theoretical maximum between 23.5% and 27%. This suggests that the capacity factor of the Ballinlee wind farm will be a measly 13.585% to 15.606%.

It is not possible to be more accurate than this estimate as there is no over time data set taken by the developer for the site. If there was, the true energy capture estimate could be calculated and it almost certainly is less than the calculation relying on the annual average.

Ballinlee Wind has other disadvantages in its prospects for wind energy capture.

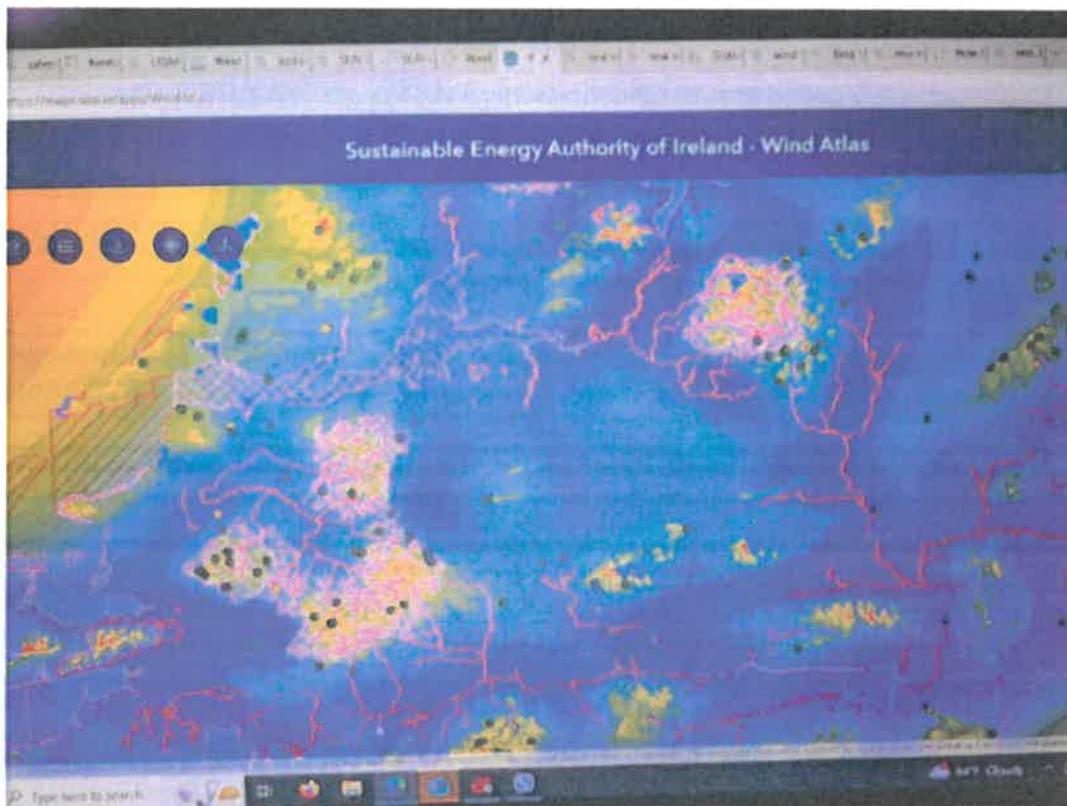
- In an effort to capture SID treatment by exceeding 50 MegaWatts of capacity the turbines are too close together and will "wake" each other. That is to say the wind will be disturbed on striking the first turbine and will be turbulent when striking the following turbines behind and beside. This array wake effect as more fully illustrated

elsewhere in a submission on waking will further reduce the capacity factor at Ballinlee by as much as 20% to 40% with a potential reduction in capacity factor to between 10.868% and 8.15%

- Again in an effort to capture SID treatment the developer is utilising 4.5 – 5 MegaWatt turbines. Huge, with more inertia and requiring higher wind speeds for cut in and operations and thus again reducing capacity factor.
- The blade sweep from top to bottom is 136 metres. The top and bottom speeds are calculated above. The wind speed will be different from the bottom to the top of the capture area further reducing the performance of the turbine. This is an issue for all wind turbines but is especially so for turbines of the size where the vertical sweep is such are large distance and the bottom of the sweep is so low to the ground.

While it is perfectly possible that low energy producing turbines may work from the financial perspective for the developer given the new curtailment payment paid without risk, export credit payments and carbon credit payments, the payout to the Irish consumer is very poor. Less efficient wind turbines inevitably will increase the cost of power to the consumer. As more and more low output wind turbines are located in poor wind regimes the pressure on the power price to the consumer will increase; a consequence of ignoring the science based atlas, science in general and opening the wrong spaces to development

This is a poor and science agnostic project that will blight lives and endanger health with little or no payback to anybody except the developer.



## **Turbine Spacing Issues**

### **Executive Summary**

The Turbines are in violation of the 2006 Wind Energy Guidelines for proximity to adjoining properties.

The turbines are in violation of 2006 Wind Energy Guidelines for safe waking distance separation

- There are significant impacts to this close arraying of wind turbines:
- Amplification and increased numbers of noise impacts at each receptor
- Catastrophic increase in visual impacts from multiple turbines within the critical distance from receptors
- Multiple instances of shadow flicker at large number of receptors
- Reduced energy production due to waking
- Operational issues due to turbulence and fatigue
- There are too many turbines located within the site area

### **Wind Turbine Spacing**

**The spacing between turbines at the proposed wind plant are in breach of the 2006 wind energy guidelines where in Section 5.13 it is stated that:**

“Bearing in mind the requirements for optimal performance, a distance of not less than two rotor blades from adjoining property boundaries will generally be acceptable, unless by written agreement of adjoining landowners to a lesser distance.

“to ensure optimal performance and to account for turbulence and wake effects, the minimum distances between wind turbines will generally be three times the rotor diameter ( $=3d$ ) in the crosswind direction and seven times the rotor diameter ( $=7d$ ) in the prevailing downwind direction.”

**The breaches are numerous and material and will have serious material impacts on the receptors in the locale.**

The breaches to adjoining properties are detailed as follows:

Folio	Turbine Number	Required Setback (m)	Actual Setback (m)	Percentage of Required Setback	
LK 13481	T1	272	110	40.44%	
LK 4838	T2	272	110	40.44%	
LK 7387F	T2	272	130	47.8%	
LK 12589	T3	272	88	32.4%	
LK 7387F	T3	272	82	30.1%	
LK 1992F	T5	272	128	47.0%	
LK 4915F	T6	272	80	29.4%	
LK 71	T9	272	104	38.2%	
LK 6258	T15	272	81	29.8%	

The breaches to the waking distance requirements are as follows:

The table below is a matrix indicating the distances between turbines in the wind park. For simplicity the table is split between the north cluster of five turbines ( T1—T5) and the south cluster of 12 turbines ( T6—T17)

North Cluster Turbines T1-T5 Distance in Metres

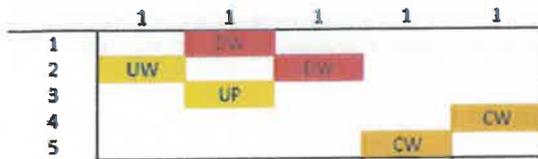
	1	2	3	4	5
1	-	417	730	931	1,207
2	417	-	400	1,205	1,525
3	730	400	-	1,242	1,589
4	931	1,205	1,242	-	349
5	1,207	1,525	1,589	349	-

South Cluster Turbines T6-T17 Distance in metres

	6	7	8	9	10	11	12	13	14	15	16	17
6	-	406	889	1,251	829	1,218	1,593	1,242	1,613	1,873	1,465	1,811
7	406	-	517	855	592	896	1,252	1,167	1,523	1,824	1,227	1,622
8	889	517	-	384	364	411	740	991	1,282	1,609	820	1,247
9	1,251	855	384	-	689	442	559	1,231	1,452	1,780	876	1,293
10	829	592	364	689	-	429	806	644	967	1,285	644	1,030
11	1,218	896	411	442	429	-	380	813	1,011	1,338	446	875
12	1,593	1,252	740	559	806	380	-	1,049	1,131	1,432	508	837
13	1,242	1,167	991	1,231	644	813	1,049	-	370	657	574	671
14	1,613	1,523	1,282	1,452	967	1,011	1,131	370	-	329	625	457
15	1,873	1,824	1,609	1,780	1,285	1,338	1,432	657	329	-	936	657
16	1,465	1,227	820	876	644	446	508	574	625	936	-	430
17	1,811	1,622	1,247	1,293	1,030	875	837	671	457	657	430	-

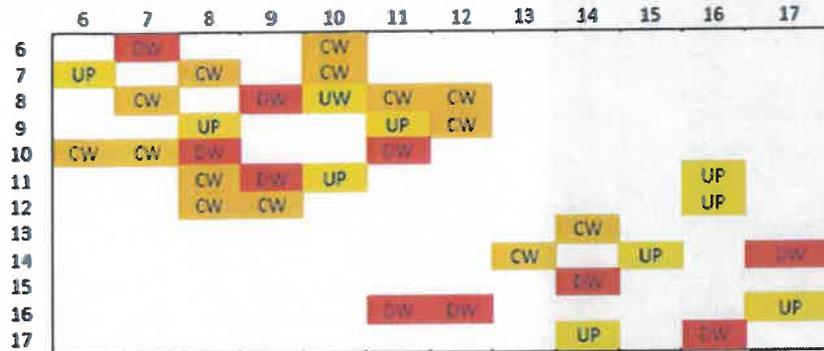
In the Ballinice area the wind rose indicates the prevailing wind coming from the South, South West, West quadrants and the following tables indicate the 2006 guidelines waking breaches for a South West wind:

North Cluster T1-T5



Colours indicate a breach of the guidelines where a turbine in Red is downwind of a corresponding front turbine indicated in Yellow.  
Brown indicates a pair of turbines in crosswind breach

South Cluster T6-T17



Similar exercises can be performed for South and West wind and the results are broadly similar. These breaches are not minor, they are major in terms of how closely these turbines are packed together. The quantum of the breach is tabulated below where the actual distances between the non compliant turbines are expressed as a percentage of the 2006 guidelines. Also the distances as a percentage of the industry guidelines of 3.5 to 5 diameters crosswind and 6 to 10 diameters downwind are tabulated. The conclusion is that these arrays are manifestly in breach of the national guidelines as well as the wind industry itself.

Crosswind Violations Both Clusters

				2006 3XDia	Ind Min 3.5XDia	Ind. Res 5XDia
Violation	4	CW of	5	406	103%	88%
Violation	7	CW of	10	592	149%	128%
Violation	7	CW of	8	517	131%	112%
Violation	8	CW of	11	740	187%	160%
Violation	8	CW of	12	740	187%	160%
Violation	9	CW of	12	559	141%	121%
Violation	13	CW of	14	370	93%	80%

2006 shows 2006 Guidelines indicating 1 breach.  
In. Min shows the wind industry minimum recommended distance crosswind indicating 2 breaches.  
Ind Res shows wind industry recommended distance crosswind indicating 5 breaches

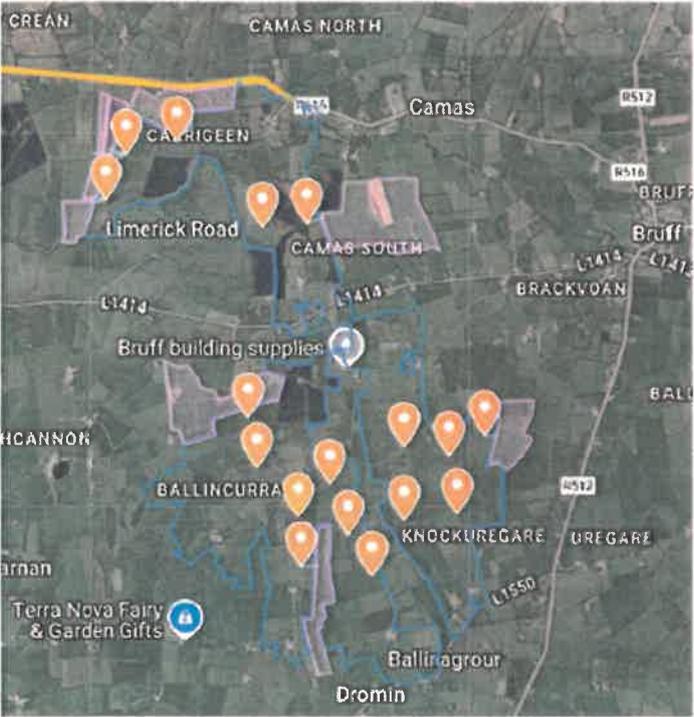
Downwind Violations Both Clusters

				2006 7XDia	Ind. Min 6XDia	Ind Rec. 10XDia
				924	792	1320
1	DW of	3	730	79%	92%	95%
2	DW of	3	400	43%	51%	60%
6	DW of	7	406	44%	51%	51%
10	DW of	8	364	39%	48%	26%
10	DW of	11	429	46%	54%	33%
11	DW of	9	442	48%	58%	35%
14	DW of	17	457	49%	58%	35%
15	DW of	14	329	36%	42%	23%
16	DW of	11	446	48%	58%	34%
16	DW of	12	508	55%	64%	38%
17	DW of	16	430	47%	56%	33%
8	DW of	9	384	42%	48%	29%
14	DW of	16	625	68%	78%	47%

2006 shows 2006 Guidelines indicating 14 breaches.  
In. Min shows the wind industry minimum recommended distance downwind indicating 14 breaches.  
Ind Res shows wind industry recommended distance downwind indicating 14 breaches

These tabulated results show a situation where the arraying of the turbines is in a manner with the sole intention of packing the maximum number of turbines into a space that is far too small and this has been done with a flagrant disregard for proper industry practice or the health of the people living in and around the area.

The map below shows the reality of these close arraying for the north and south clusters:



The impacts to the people living in the locale are serious and material in terms of Noise, Visual Impact and Shadow Flicker and to understand this it is necessary to review the results of the proximity survey that was performed by BDA Community Group. The developer identified over 550 receptors in and around the site and arrayed the turbines in a partly successful effort to comply with the 2006 receptor setback guidelines. BDA has sieved through this large quantity of often misleading information and has identified the receptors that will be most affected by the wind park. These receptors are overwhelmingly the homes of the families living in the area. The summary of the receptor analysis is as follows:

Allowing for 30 metres curtilage at the receptors there are 14 instances of a potential breach of the setback guidelines. There are 105 instances of turbines being within 860 metres of a receptor. There are 330 instances of a turbine being within 1,100 metres of a receptor and 950 instances of a turbine being within 1,500 metres of a receptor. The reason there are more instances than there are receptors is because there are many instances of there being multiple turbines within the above distances for a single receptor. The reality is that many of the receptors are not relevant to a proper analysis of the impact on the local community of these close array packing of turbines. A more meaningful analysis is to examine the 202 receptors that are impacted by two or more turbines as follows:

Receptors with 2 turbines within 1,500m	42	
Receptors with 3 turbines within 1,500m	53	
Receptors with 4 turbines within 1,500m	29	
Receptors with 5 turbines within 1,500m	42	
Receptors with 6 turbines within 1,500m	16	
Receptors with 7 turbines within 1,500m	10	
Receptors with 8 turbines within 1,500m	2	
Receptors with 9 turbines within 1,500m	3	
Receptors with 10 turbines within 1,500m	1	
Receptors with 11 turbines within 1,500m	1	
Receptors with 12 turbines within 1,500m	3	
Total	262	

In plain language 36 receptors will have between 6 and 12 turbines between 640 and 1,500 metres from their location. Obviously in cases of multiple turbines many of them are close and the tabulation below identifies two cases where there are 12 and 7 turbines within 1,500 metres. The colour code indicates the actual distances of each individual turbine. Two examples of the multiple turbine proximities to the over 500 receptors is shown below.

Examination of these appendices and in particular Appendix 1 illustrates the magnitude of the impact this project will have on the area. Homesteads will be surrounded by these machines and a closer examination of the impacts than developer assurances that it will all be OK is absolutely necessary.

It is clear that the exponential increase in these impacts is due to the developer ignoring both national and industry guidelines. This despite the developer repeatedly “assuring” local people that everything is been done to protect the community.

While this paper is focused on the impacts to humans the sheer magnitude of the disturbance calls into question the hugely amplified impacts to flora, fauna, hydrology, erosion, destruction of lands and roadways.

It also calls into question the value of the project as an electricity generating facility. Industry studies have shown that wake effects and in particular downwind wake effects where industry norms are ignored can cause a reduction in power produced as a percentage of the undisturbed wind flow of 20% to 40%. As this array is at the extreme end of violation of the industry and 2006 guidelines we may expect that the energy produced will be approaching 40% lower than from an un-waked array. Given that the wind regime at Ballinlee is already significantly lower than all other windfarms in the region as more fully explained elsewhere in this submission, BDA Community Group questions how this miserable return for such disturbance and impact to the community is in the national interest.

It should also be noted that there are too many turbines for the area of the site. The National Renewable Energy Laboratory recommends that in a flat planar site each megawatt turbine should occupy a space of between 20 and 40 acres or 12.35 to 24.71 Irish Acrea. The site is 389 Irish acres and therefore the area per MW is 5.11 Irish Acres. This is further demonstration of how closely packed and science agnostic the turbines at Ballinlee are.

Turbine Proximity for Receptor NSL048

NSL048 560349 635117

1	559035	636918	2,229	0	0	0	0
2	558629	636821	2,421	0	0	0	0
3	558471	636454	2,305	0	0	0	0
4	559699	636266	1,320	0	0	0	1
5	560048	636262	1,184	0	0	0	1
6	559575	634719	870	0	0	1	1
7	559635	634317	1,072	0	0	1	1
8	559967	633921	1,256	0	0	0	1
9	559988	633538	1,620	0	0	0	0
10	560213	634189	938	0	0	1	1
11	560355	633784	1,333	0	0	0	1
12	560540	633452	1,676	0	0	0	0
13	560792	634470	784	0	1	1	1
14	561156	634401	1,079	0	0	1	1
15	561442	634564	1,225	0	0	0	1
16	560787	633896	1,297	0	0	0	1
17	561214	633948	1,454	0	0	0	1

12

Turbine Proximity for Receptor NSL157

NSL157 560265 632851

1	559035	636918	4,249	0	0	0	0
2	558629	636821	4,294	0	0	0	0
3	558471	636454	4,025	0	0	0	0
4	559699	636266	3,462	0	0	0	0
5	560048	636262	3,418	0	0	0	0
6	559575	634719	1,991	0	0	0	0
7	559635	634317	1,596	0	0	0	0
8	559967	633921	1,111	0	0	0	1
9	559988	633538	741	0	1	1	1
10	560213	634189	1,339	0	0	0	1
11	560355	633784	937	0	0	1	1
12	560540	633452	661	1	1	1	1
13	560792	634470	1,703	0	0	0	0
14	561156	634401	1,788	0	0	0	0
15	561442	634564	2,078	0	0	0	0
16	560787	633896	1,168	0	0	0	1
17	561214	633948	1,451	0	0	0	1

Noise experienced by receptors will be greatly amplified by the presence of multiple turbines and waking in the array impacting the receptor. The simplistic map below is being used by the developer to explain away the noise story. A poor science pictorial based on noise emissions from a single source. The science says the reality will be very different.



Barlas, Zu, Shen and Andersen of the TU Denmark have studied the issues around measuring noise emissions from wind turbines and arrays of wind turbines. Their conclusions include the following:

Wind farm noise predictions using the industry method (ISO9613-2) are merely approximations.

There is a high level of uncertainty due to the simplistic assumptions made. (as evidenced by the above map)

Accuracies are subject to an error of 6dB which at sounds of 40dB is effectively approaching a doubling.

Predictions in planning applications generally use optimistic noise model inputs that give optimistic results. (Ground absorption, sound power levels, no site effects). Again this is evidenced by the simple map.

If estimates prepared by developers are already simplistic and optimistic what then of the developers assurances in the presence of multiple arrays of turbines.

Arrays such as this will multiply the sound signature of the single turbine as well as adding turbulent noise, amplitude modulation and increased infrasound. Amplitude modulation which the developer has not addressed cannot be measured for an array such as we have here. As noted on the Denbrooke wind farm in New Zealand the method of measuring amplitude modulation (NZS6808:2010) is not fit for anything other than a single turbine.

Simply put this array wind farm will generate noise far in excess of what the developer states and far in excess of what people living in the area can bear.

**This is a direct result of the developer breaching the turbine spacing guidelines**

The fact that receptors will be surrounded by multiple windmills needs no elaboration on the level of impact that the receptors with multiple wind turbines in their viewshed will experience. A panorama filled with spinning machines will disturb the senses in a manner that is not measurable but which will cause dizziness, nausea, fits (in those susceptible) and an enduring sense that Ballinlee is an industrial landscape.

The developer's statement that the wind turbines will blend into the landscape and enhance the community is both farcical and insulting.

Shadow flicker will be multiplied at each receptor as there will be multiple machines casting shadows on the receptor.

**This destruction of the viewshed and increase in shadow flicker is entirely due to the developer breaching the turbine spacing guidelines.**

# **Report: Conflicts Between Wind Farm Application PAX91.323780 and the Limerick County Development Plan 2022–2028**

## **Introduction**

This report reviews the alignment of the wind-farm planning application PAX91.323780 with the written policies and objectives of the Limerick County Development Plan 2022-2028, and the relevant positions expressed by Limerick City & County Council (LCCC) in its submission on National Territory Mapping for Renewable Electricity (2025).

The analysis demonstrates that Ballinlee wind farm application does not align with several key written policies of the Limerick County Development Plan and relies heavily and improperly on a mapping designation that the Limerick City & County Council has formally and explicitly stated requires revision 2025.10.13 LCCC Submission on National Territory Mapping for Renewable Electricity.

The written text of the Development Plan, not Map 9.1, governs compliance and on that basis, the proposal is not policy-compliant.

## **Principal points of conflict**

### **1. Conflict With LCCC’s Position in National Territory Mapping Submission**

The Limerick City and County Council submission regarding the wind energy map clearly states that Map 9.1 and broader renewable-energy mapping require correction with several technical inaccuracies and misclassifications identified and does not accurately represent local constraints, including:

- landscape designations,
- environmental sensitivities,
- settlement patterns,
- grid capacity limitations.

Thus the application’s reliance on Map 9.1 contradicts Limerick City and County Council’s own formal position that the map should not be used without revision in assessing suitability for renewable energy development.

**This represents a major inconsistency between the application approach and local policy direction and conflicts with the Development Plan’s statutory hierarchy:**

- Under Limerick City and County Development Planning and Development Act, **written policy prevails over maps** where inconsistencies exist.

(Reference: LCCC Submission on National Territory Mapping for Renewable Electricity Appendix A)

### **2. Landscape & visual impact — scale vs. “landscape character objectives”**

Limerick City and County Development Plan requires that wind energy development be “environmentally sustainable ... ensuring proposals are consistent with the landscape character objectives of Limerick City and County Development Plan” and that visual amenity be protected; it states turbine height/type will be determined by visual and landscape considerations. Objective CAF O29 / CAF O34 and Chapter 6 set out landscape protection expectations.

Ballinlee proposes **17 turbines** with tip heights up to **~160 m** and associated infrastructure across c.255 ha (site notice / EIAR). Large turbines of this scale are explicitly flagged in Limerick City and County Development Plan as ones where visual/landscape considerations will determine acceptability. Limerick City and County Development Plan requires Limerick City and County Development Planning Authority to consider landscape character and to promote siting in preferred areas (Map 9.1) or to prohibit in areas “not open for consideration”. Limerick City and County Development Plan also notes that turbine heights will be determined by visual/landscape considerations.

Elements of the development plan site and grid route lies outside Limerick City and County Development Plan’s “preferred areas” and in sensitive landscape character areas, that creates a direct policy conflict/tension.

**The Development Plan’s Objective CAF O30 is an explicit constraint.**

### **3. Impact on Natura 2000 sites / requirement for Appropriate Assessment (AA) – proximity to protected sites**

#### **Plan requirement / policy**

Limerick City and County Development Plan states it will protect Natura sites and that Appropriate Assessment (AA/NIS) is required where development may affect European sites; Policy EH P1 and Limerick City and County Development Plan’s Appropriate Assessment / SEA requirements are explicit (Chapter 6 and Chapter 9). Limerick City and County Development Plan emphasises avoidance of adverse effects on European sites (SAC/SPA).

The Ballinlee application is accompanied by an NIS (the applicant submitted a NIS and EIAR). That satisfies the procedural requirement. However the substantive issue is whether the NIS demonstrates no adverse effect on integrity of nearby Natura sites (in-combination effects, hydrological pathways, bird collision/disturbance risk, Whooper Swan / wintering waterfowl management areas noted in the application site notice).

Limerick City and County Development Plan expects strict protection of Natura sites; if the NIS/EIAR cannot robustly rule out adverse effects (including in-combination/cumulative effects with other wind farms), that would conflict with Limerick City and County Development Plan’s objectives and could justify refusal.

The presence of “Whooper Swan Management Area” works noted in the application also raises an explicit Plan-policy tension as bird habitat or disturbance is not adequately mitigated.

Gaps exist in the NIS conclusions on (a) connectivity to relevant SACs/SPAs (b) cumulative effects with nearby proposals (there are other Cork/Limerick proposals in the area), and (c) avoidance/mitigation measures (timing, buffers). Limerick City and County Development Plan’s EH P1 protections should therefore be engaged.

### **4. Cumulative impacts (landscape, ecology, noise) with other consented / proposed wind farms**

#### **Plan requirement / policy**

Limerick City and County Development Plan requires cumulative impact to be assessed (landscape, ecological, noise, visual) in EIA and decision-making and notes cumulative

assessment is essential for wind energy projects. Development-management standards require cumulative assessments where relevant. Limerick City and County Development Plan expects a rigorous, site-specific cumulative assessment which has not been completed.

**The EIAR has failed to properly model combined visibility or ecological impact with nearby proposals, therefore Development Plan's cumulative test is not satisfied.**

**The EIAR has likely underestimated the cumulative visual or ecological effects which is a conflict with Limerick City and County Development Plan's approach.**

## **5. Residential amenity, noise, shadow-flicker and setbacks**

### **Plan requirement / policy**

The Development Plan sets explicit noise criteria, requires ETSU/Good Practice methodology for wind turbine noise assessments, sets night time limits, requires shadow flicker assessment and appropriate setbacks determined case-by-case in accordance with guidelines.

A 17-turbine, 160 m tip installation will have a substantial area of influence. The application includes noise assessments however detailed public objections raise concerns about noise, amenity and effects on vulnerable residents. If predicted noise, cumulative noise, or shadow flicker at nearby dwellings exceed the limits or if mitigation relies on onerous operational restrictions, which conflicts with Limerick City and County Development Plan's objective to protect residential amenity and the specified noise thresholds.

**As current objections cite vulnerable residents (e.g., people with health needs), Limerick City and County Development Plan's emphasis on amenity should be given weight.**

## **6. Grid connection, substations and protection of energy corridors / infrastructure**

### **Plan requirement / policy**

Limerick City and County Development Plan supports reinforcement of energy networks but requires that transmission infrastructure be sited to minimise landscape impacts and that strategic corridors be protected from encroachment. Objective IN O13/IN O14 and related text require grid works to comply with best-practice siting and minimal landscape impact. The application includes a permanent 110 kV substation and grid connections. Limerick City and County Development Plan supports such infrastructure where necessary but expects careful siting and minimal landscape/visual and amenity impacts.

**The grid connection route crosses protected corridors, or are sited in sensitive landscapes without adequate mitigation, there is a Plan-policy tension.**

## **7. Whooper Swan / bird habitat management — plan's ecological protections vs. proposed works**

### **Plan requirement / policy**

Limerick City and County Development Plan emphasises protection of biodiversity and Natura sites and supports community-based and carefully assessed renewable projects, but

not at cost to important habitats. Policy EH P1 and renewable policy CAF P6 require no negative impacts on biodiversity.

The applicant's site notice refers to works relating to a "Whooper Swan Management Area" and habitat enhancement areas. However submissions question whether proposed measures adequately avoid or mitigate disturbance to wintering waterfowl.

**Given Limerick City and County Development Plan's strong protections for habitats, any residual or unmitigated adverse effect conflicts with the Development Plan objectives.**

## **5. Conclusion**

Based on the written policies of the Limerick County Development Plan and LCCC's national mapping submission:

**The wind-farm application PAX91.323780 conflicts with multiple mandatory Development Plan policies, including:**

1. Traffic and road-safety policies (TR O37, TR O41) concerning substandard and strategic regional roads.
2. Noise-protection policies (TR O54).
3. Landscape, visual amenity, and residential-amenity protections.
4. Environmental and infrastructural safeguards (IN P1).
5. Natura 2000 impacts due to lack of robustness of NIS at development site and grid connection route.
6. Infrastructure/environmental capacity constraints.
7. The statutory requirement to rely on written policy rather than maps in conflict scenarios.

Most significantly:

The wind farm application **does not align with several key written policies** of the Limerick County Development Plan and relies on a mapping designation that the local authority has explicitly stated **must be corrected**. The written text of the Development Plan, not Map 9.1, governs compliance and on that basis, the proposal is **not policy-compliant**.

The following photographs have been submitted by Councillor O'Donoghue for consideration.



Above: Images from v35RW73, shed at approx 1km, water tower in Bruff 4km, wind turbines in the background at approx 40km.



Above-Planning notice hidden behind sign at Four Elms Pub



Above – One of Planned Entrances off local road



Above – One of Planned Entrances off local road



Above - Image from either side of a proposed works entrance



Above - Image of part of the local road access to 1 of the works entrance L1550



Above - Image from either side of a proposed works entrance.

The following feedback on the forthcoming National Territory Mapping for Renewable Energy was also submitted by Councillor O'Donoghue for consideration:



Pleanáil agus Cruithín Áite  
Ceanncheathrú Chorpóraideach  
Cornhairle Cathrach agus Contae Luimnigh  
Cé na gCearnaíthe, Luimneach  
V94 D190

Planning and Place Making  
Corporate Headquarters  
Limerick City and County Council  
Merchant's Quay, Limerick  
V94 E190

Renewable Electricity Section  
Department of Climate, Energy and the Environment  
Tom Johnson House  
Haddington Road  
Dublin  
D04 K7X4

10<sup>th</sup> October 2025

A Chara,

Limerick City and County Council welcomes the opportunity to provide feedback on this public consultation on National Territory Mapping for Renewable Electricity.

#### National Territory Mapping

Article 15b of the relevant EU directive obliges Member States to undertake a “coordinated mapping” of their national territories. This exercise is intended to identify domestic potential and available land, sub-surface, sea, and inland water areas suitable for the installation of renewable energy infrastructure, in order to meet 2030 targets.

The National Territory Mapping is based on areas already designated for renewable energy generation in existing statutory Local Authority Development Plans. This approach is not considered appropriate as Circular PL 20-13 of 2013 advised local authorities to refrain from amending existing Development Plan policies related to wind and renewable energy during the standard six-year review cycle or through plan variations. Instead, authorities were instructed to continue operating under their current policies until a focused review of the Wind Energy Development Guidelines 2006 is completed. This guidance remains the Department’s official position. Consequently, Planning Authorities have been unable to update their Development Plans in this regard and are awaiting the publication of revised Wind Energy Guidelines for incorporation.

The wind energy map included in the Limerick Development Plan 2022–2028 is based on Landscape Character Assessments, as required under the Planning and Development Act 2000 (as amended). This approach was first adopted in the 2005 Limerick County Development Plan and carried forward into the 2010 Plan, which considered the 2006 Wind Energy Guidelines. These provisions remained in effect until the adoption of the first joint City and County Development Plan in June 2022. This approach to identifying areas for wind energy development was different in each local authority and therefore should not form the basis for a national territory map to identify potential renewable energy capacity for the country.

customer.services@limerick.ie  
www.limerick.ie  
@LimerickCouncil  
061 - 556 000

The National Planning Framework provides enhanced policy support for renewable energy development. Notably, it introduces regional renewable electricity capacity allocations (NPO74) for wind and solar energy to help achieve the targets set out in the Climate Action Plan 2024. These allocations will be incorporated into upcoming Regional Spatial and Economic Strategies (RSES), which will guide city and county development plans.

Additionally, Section 29(m) of the new Planning and Development Act 2024 requires Regional Assemblies to prepare a landscape strategy that harmonizes the categorization of landscapes across regions. This strategy will assess the capacity of different landscapes to accommodate specific types of development, ensuring a consistent approach to landscape protection. In line with the hierarchical structure of national strategies, the next iteration of the Limerick Development Plan will align with this regional approach. This process will help identify areas suitable for large-scale wind energy development, as well as areas deemed unsuitable.

In this respect it is considered that it would be prudent to await the new iteration of Development Plans to provide an updated energy map for the country.

#### **National Territory Mapping for Grid-Scale Onshore Wind in Ireland**

The observations outlined in response to Question 1 are directly relevant to this matter and should be considered in full. In addition, the current mapping does not adequately reflect the extent of development already undertaken within Tier 1 and Tier 2 areas. This omission limits the accuracy of the mapping exercise and should be addressed to ensure a more representative depiction of land availability for future renewable energy development.

Having regard to Circular PL 20-13, and the anticipated Regional Spatial and Economic Strategies—which will incorporate regional renewable electricity capacity allocations and coordinated landscape strategies—it is evident that the National Territory Mapping for Grid-Scale Onshore Wind is premature and does not currently reflect an up-to-date position and the true extent of available land. Nor does it appropriately distinguish areas suitable exclusively for repowering existing infrastructure.

Furthermore, consideration should be given to emerging trends in renewable energy development, particularly the integration of battery storage systems. These are increasingly being added to legacy projects or incorporated into new developments. Including battery applications in the mapping framework would capture a critical component of modern renewable energy systems, helping to address intermittency and improve grid stability.

## **National Territory Mapping for Grid-Scale Solar PV in Ireland**

It is acknowledged Limerick and other significant areas of the country do not have solar mapping. This is supported by the large area of the country that is shown as Tier 4 Unclassified /No designation area.

It is suggested that in addition to looking at the wider countryside, consideration needs to be given to the systematic use, where suitable, of buildings, rooftops and other structures in the built environment which could support solar. Further from the point of view of non-compensable reasons for refusal of planning applications (sections 190 to 192 of the Planning Act 2000), phrases such as "available areas with no risk identified" should be avoided in terms of areas suitable for solar or indeed any form of renewable development.

Traditionally County Development Plans focused heavily on wind energy, this emphasis may result in gaps regarding other technologies, such as solar. Therefore, when extrapolating local mapping data to the national level, these gaps must be acknowledged and addressed.

As earlier outlined it is considered that the upcoming RSES will provide required information on renewable energy allocations and landscape characters at a regional level will inform the preparation of a new Development Plan and Solar PV will form part of the review of the Development Plan.

## **Available Areas of Offshore Renewable Energy in Ireland**

The DMAPS process should be used to determine suitable areas.

### **Renewable Acceleration Area**

The Shannon Estuary and its key landbanks at Moneypoint, Ballylongford, Foynes, Askeaton and Limerick are of strategic national importance in terms of delivering on renewable energy targets and are included in various capacities under the national territory mapping. Sites such as Moneypoint are vital as a generation asset with the proposed "repowering" to include for energy storage, development of new generation capacity and the introduction of new thermal technologies which will ensure the site continues to support energy security. It is a strategic node in the transmission network with the site accommodating strategic existing and proposed cables, which will ultimately need to make landfall and connection at Moneypoint if Offshore Renewable Energy is to be delivered in a timely manner and safely uploaded to the grid. Through the installation of a Synchronous Compensator in 2022, this zero-carbon technology helps stabilize the grid as more renewables come online. The Shannon Estuary with its deep-water storage, potential wet storage locations and the presence of Shannon Foynes Port Company (a Tier 1 Port of national significance) should be identified as a Renewable Acceleration Area under Article 15c. Shannon Foynes Port Company is central to Ireland's ambitions in Offshore Renewable Energy (ORE) with the port being developed as a green energy hub, with plans for e-fuels production and support for sustainable logistics.

Through the identification of the Shannon Estuary as a Renewable Acceleration Area under the EU Renewable Energy Directive it will ensure it continues to play its key role as one of the

most important assets for renewable energy development due to its natural geography, strategic location, and existing infrastructure. The Estuary is ideally located to harness Atlantic Offshore Wind especially floating offshore wind and has a capacity to deliver 2GW by 2030 and up to 30GW by 2050 through its strategic location. Ireland's territorial waters in this region could generate 10 times the country's energy needs, making it a potential net exporter of clean energy and a focal point for the offshore wind industry in Europe.

Through the identification and adoption of the Shannon Estuary as a Renewable Acceleration Area it will work in harmony with the National DMAP for Offshore Renewable Energy which is currently being prepared by the Minister for Climate, Energy and the Environment and will ensure the estuary is ready to accommodate our developing offshore renewable energy sector.

#### **Additional feedback**

As a general point for all renewables, any work on mapping should take account of grid and substation capacity, both current and planned, when drafting the maps. It is important to include planned upgrades, as many permissions for renewables are for extended periods of time, such as ten years, so projected grid improvements in that time period could facilitate development within that time frame.

There appears to be a focus on large scale developments at the cost of local community initiatives that can create local decentralised energy communities which can offer not just additional supply to the grid but also demand management which supports the concept of climate resilient communities.

Consideration should also be given to the possible effects of infrastructure and projects on marine and shore-line archaeology.

Limerick City and County Council appreciates the opportunity to contribute to this important process and looks forward to continued collaboration with the Department.



John Moran  
Mayor of Limerick

### **C. Councillor Brigid Teefy – via Emails 27/11/2025 and 30/11/2025**

The following has been submitted by Councillor Teefy for consideration.

#### Cable Route

The proposed underground cable will cause major disruption on an already busy Regional and local road network.

The roads carry all the everyday commuter traffic, workplace, school and college traffic, farm machinery, delivery vans, emergency services, hospital appointments etc.

Scale of disruption will seriously affect the functioning of the local area as well as the knock-on effects in the surrounding areas.

There are existing services along this route, such as water mains, broadband, drainage pipes, and other services. The jointing bays are 2 and a half metres wide. No details on the application.

Has any consideration been given to overhead connections. No communication with the community and residents along the route.

What about future development on either side along the route of the cable. Will new entrances, residential or business, be allowed along the route. This is so important for present and future generations.

#### Historical

Lough Gur and Cnoc Aine, Knockaney.

Turbines will be visible. One photo montage shown from Lough Gur, Point 19.

Should be other photo montages from other viewpoints.

No mention of Conor Aine, Knockaney, a very important historical point.

Turbines are so large, the bases will require major ground disruption. Such interventions are not compatible with the character of the Golden Vales prime agricultural land and will, have a knock on in the area.

#### DGs Report.

I would have liked to see a stronger negative conclusion regarding the application - it's not broadly supported by the Development plan, can that be amended.

#### Proposal

In view of the lack of information and serious concerns expressed by the various departments in the DG's Report I respectfully request An Coimisiun Planala to reject this application as outlined.

Also attaching extra comment re traffic disruption on the R512.

### Grid Route

Impact on local community, Bruff is not a sparsely populated area but a level 4 large village under Urban Influence and strong development potential whose main artery is the R512 for people commuting to work, UL, UHL and Shannon etc.

### **Areas under Urban Influence**

These designations are based on factors like population size, the availability of services, and their role in regional growth.

### **Level 4: Large Village**

- **Definition:** Villages with a population over 500 that also fall under urban influence and have development potential.
- **Examples:** Adare, Askeaton, Bruff, Croom and Patrickswell.

The following Report has also been submitted by Councillor Teefy for consideration.

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- settlement patterns,
- grid capacity limitations.

Thus the application’s reliance on Map 9.1 contradicts Limerick City and County Council’s own formal position that the map should not be used without revision in assessing suitability for renewable energy development.

**This represents a major inconsistency between the application approach and local policy direction and conflicts with the Development Plan’s statutory hierarchy:**

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objectives of Limerick City and County Development Plan” and that visual amenity be protected; it states turbine height/type will be determined by visual and landscape considerations. Objective CAF O29 / CAF O34 and Chapter 6 set out landscape protection expectations.

Ballinlee proposes **17 turbines** with tip heights up to **~160 m** and associated infrastructure across c.255 ha (site notice / EIAR). Large turbines of this scale are explicitly flagged in Limerick City and County Development Plan as ones where visual/landscape considerations will determine acceptability. Limerick City and County Development Plan requires Limerick City and County Development Planning Authority to consider landscape character and to promote siting in preferred areas (Map 9.1) or to prohibit in areas “not open for consideration”. Limerick City and County Development Plan also notes that turbine heights will be determined by visual/landscape considerations.

Elements of the development plan site and grid route lies outside Limerick City and County Development Plan’s “preferred areas” and in sensitive landscape character areas, that creates a direct policy conflict/tension.

**The Development Plan’s Objective CAF O30 is an explicit constraint.**

### **3. Impact on Natura 2000 sites / requirement for Appropriate Assessment (AA) — proximity to protected sites**

#### **Plan requirement / policy**

Limerick City and County Development Plan states it will protect Natura sites and that Appropriate Assessment (AA/NIS) is required where development may affect European sites; Policy EH P1 and Limerick City and County Development Plan’s Appropriate Assessment / SEA requirements are explicit (Chapter 6 and Chapter 9). Limerick City and County Development Plan emphasises avoidance of adverse effects on European sites (SAC/SPA).

The Ballinlee application is accompanied by an NIS (the applicant submitted a NIS and EIAR). That satisfies the procedural requirement. However the **substantive issue** is whether the NIS demonstrates no adverse effect on integrity of nearby Natura sites (in-combination effects, hydrological pathways, bird collision/disturbance risk, Whooper Swan / wintering waterfowl management areas noted in the application site notice).

Limerick City and County Development Plan expects strict protection of Natura sites; if the NIS/EIAR cannot robustly rule out adverse effects (including in-combination/cumulative effects with other wind farms), that would conflict with Limerick City and County Development Plan’s objectives and could justify refusal.

The presence of “Whooper Swan Management Area” works noted in the application also raises an explicit Plan-policy tension as bird habitat or disturbance is not adequately mitigated.

Gaps exist in the NIS conclusions on (a) connectivity to relevant SACs/SPAs (b) cumulative effects with nearby proposals (there are other Cork/Limerick proposals in the area), and (c) avoidance/mitigation measures (timing, buffers). Limerick City and County Development Plan’s EH P1 protections should therefore be engaged.

### **4. Cumulative impacts (landscape, ecology, noise) with other consented / proposed wind farms**

#### **Plan requirement / policy**

Limerick City and County Development Plan requires cumulative impact to be assessed (landscape, ecological, noise, visual) in EIA and decision-making and notes cumulative assessment is essential for wind energy projects. Development-management standards require cumulative assessments where relevant. Limerick City and County Development Plan expects a rigorous, site-specific cumulative assessment which has not been completed.

**The EIAR has failed to properly model combined visibility or ecological impact with nearby proposals, therefore Development Plan's cumulative test is not satisfied.**

**The EIAR has likely underestimated the cumulative visual or ecological effects which is a conflict with Limerick City and County Development Plan's approach.**

## **5. Residential amenity, noise, shadow-flicker and setbacks**

### **Plan requirement / policy**

The Development Plan sets explicit noise criteria, requires ETSU/Good Practice methodology for wind turbine noise assessments, sets night time limits, requires shadow flicker assessment and appropriate setbacks determined case-by-case in accordance with guidelines.

A 17-turbine, 160 m tip installation will have a substantial area of influence. The application includes noise assessments however detailed public objections raise concerns about noise, amenity and effects on vulnerable residents. If predicted noise, cumulative noise, or shadow flicker at nearby dwellings exceed the limits or if mitigation relies on onerous operational restrictions, which conflicts with Limerick City and County Development Plan's objective to protect residential amenity and the specified noise thresholds.

**As current objections cite vulnerable residents (e.g., people with health needs), Limerick City and County Development Plan's emphasis on amenity should be given weight.**

## **6. Grid connection, substations and protection of energy corridors / infrastructure**

### **Plan requirement / policy**

Limerick City and County Development Plan supports reinforcement of energy networks but requires that transmission infrastructure be sited to minimise landscape impacts and that strategic corridors be protected from encroachment. Objective IN O13/IN O14 and related text require grid works to comply with best-practice siting and minimal landscape impact.

The application includes a permanent 110 kV substation and grid connections. Limerick City and County Development Plan supports such infrastructure where necessary but expects careful siting and minimal landscape/visual and amenity impacts.

**The grid connection route crosses protected corridors, or are sited in sensitive landscapes without adequate mitigation, there is a Plan-policy tension.**

## **7. Whooper Swan / bird habitat management — plan's ecological protections vs. proposed works**

### **Plan requirement / policy**

Limerick City and County Development Plan emphasises protection of biodiversity and Natura sites and supports community-based and carefully assessed renewable projects, but not at cost to important habitats. Policy EH P1 and renewable policy CAF P6 require no negative impacts on biodiversity.

The applicant's site notice refers to works relating to a "Whooper Swan Management Area" and habitat enhancement areas. However submissions question whether proposed measures adequately avoid or mitigate disturbance to wintering waterfowl.

**Given Limerick City and County Development Plan's strong protections for habitats, any residual or unmitigated adverse effect conflicts with the Development Plan objectives.**

## **5. Conclusion**

Based on the written policies of the Limerick County Development Plan and LCCC's national mapping submission:

**The wind-farm application PAX91.323780 conflicts with multiple mandatory Development Plan policies, including:**

1. Traffic and road-safety policies (TR O37, TR O41) concerning substandard and strategic regional roads.
2. Noise-protection policies (TR O54).
3. Landscape, visual amenity, and residential-amenity protections.
4. Environmental and infrastructural safeguards (IN P1).
5. Natura 2000 impacts due to lack of robustness of NIS at development site and grid connection route.
6. Infrastructure/environmental capacity constraints.
7. The statutory requirement to rely on written policy rather than maps in conflict scenarios.

Most significantly:

The wind farm application **does not align with several key written policies** of the Limerick County Development Plan and relies on a mapping designation that the local authority has explicitly stated **must be corrected**. The written text of the Development Plan, not Map 9.1, governs compliance and on that basis, the proposal is **not policy-compliant**.