MWP

# RESPONSE TO OBSERVATIONS (ACP-323579-25)

## Ballinla Wind Farm

**Ballinla Wind Farm Ltd.**

**January 2026**

# Contents

## Tables



## Appendices

| Project No. | Doc. No. | Rev. | Date | Prepared By | Checked By | Approved By | Acceptance Code / Status |
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| 27014 | 6001 | A | 29/01/2026 | GT/AP/MT | MT | MT | Final |
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**MWP, Engineering and Environmental Consultants**
**Address:** Reen Point, Blennerville, Tralee, Co. Kerry, V92 X2TK, Ireland

**www.mwp.ie**

# 1. Introduction

Malachy Walsh and Partners (MWP), as well as other specialist subconsultants, are responding to the correspondence received from An Coimisiún Pleanála (ACP) dated 25 November 2025. ACP has examined submissions on the application (ACP-323579-25) and has invited the applicant to respond to these submissions. This report constitutes the applicant's response to the submissions on the Ballinla Wind Farm (the Proposed Development).

Section 2 of this response summarises the observations received from Prescribed Bodies and members of the public. Sections 3 and 4 then set out our responses to the key issues raised, grouped by Prescribed Bodies and by members of the public respectively.

A number of the queries raised in the submissions have already been addressed in the EIAR, NIS and planning application documentation. Therefore, where relevant reference is made to the applicable application documents.

# 2. Summary of Responses Received

## 2.1 Observations Received from Prescribed Bodies

Six observations were received from the following authorities: Offaly County Council (OCC), Department of Health, Safety and the Environment (HSE), Development Applications Unit (DAU) (Heritage), Department of Defence (DoD), Transport Infrastructure Ireland (TII) Dept. of Transport and Uisce Éireann (UE). These are responded to in Section 3.

## 2.2 Submissions from the Public

58 submissions were received from the public. These were almost exclusively from local residents. Following a systematic review of these observations it was found that visual impact, noise and vibrations, ecology, shadow flicker, traffic, equine, and future development were of the main concerns raised, alongside questions about the data used. To avoid repetition, Section 4 groups similar issues together and provides thematic responses rather than replying to each individual submission separately.

# 3. Responses to Submissions by Prescribed Bodies

## 3.1 Offaly County Council

### 3.1.1 Items Raised

Table 1 outlines our responses to queries raised by OCC.

**Table 1: OCC Items Raised**

| Item No. | Comments/Queries | Response |
|---|---|---|
| 1 | Pg 9. The applicant shall clarify the area of commercial forestry that is proposed for removal; both 18ha and 21ha are referenced throughout the submitted documentation. | 18ha represents the current area of standing commercial forestry on site. This excludes forest roads and areas that have already been clear-felled. It is used in the EIAR where the existing baseline must be described and where the impact on the currently present trees is assessed.<br><br>21ha represents the total forestry land use area, including standing trees, forest roads and areas that are presently clear-felled but could be replanted. This figure is described in Figure 2-10 chapter 02 Project description and section 2.3.13 Commercial tree felling as the worst-case scenario for potential felling. If the clear-felled areas were replanted before construction, they would also require removal; therefore, 21ha is assessed to ensure a conservative, robust evaluation. |
| 2 | Pg 28 It would be beneficial to have the locations of all planning applications which have referenced by the applicant and the subject site detailed on a plan. | All referenced planning applications remain publicly accessible through the planning authority's online system, where their respective site locations and documentation can be viewed in full. |
| 3 | Pg 32. The planning authority note that the potential for cumulative effects on the hydrological and hydrogeological environment has not been completed as part of the WFD compliance assessment. | See response in below Section 3.12. |
| 4 | Pg 33. There are a number of shortfalls within the submitted documentation the commission is requested to consider and address the matters raised by the LA Roads engineer in informing its decision on civil engineering matters particularly in relation to roads and road safety. | See response below in Section 3.7 Traffic and Transport |
| 5 | Pg 35. Alternative Sites. There is a shortfall in the details submitted having considered this chapter it is noted that no details are provided on the location of the alternative sites which the applicant states were considered at the beginning of the project the planning authority also notes that no consideration was given to alternative renewable energy projects on the site such as solar. | See Section 3.10 Alternatives below. |
| 6 | Pg 36. Given the proximity of proposed wind turbines notably in particular T1, T3 and T4 to existing dwellings which are within the vicinity of the subject site the planning authority has concerns relating to the potential impact on the local population. These concerns are further discussed in section 13 of this report. | The layout has been developed in accordance with the Wind Energy Development Guidelines (2006) and the Draft Revised Guidelines (2019), including the required separation distances, noise limits and shadow flicker controls. All turbine locations comply with the relevant setback criteria and have been subject to detailed environmental and residential amenity assessments, |

| Item No. | Comments/Queries | Response |
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| | | which demonstrate that the Proposed Development will operate within the guideline thresholds. |
| 7 | Pg 36 A map showing all dwellings (existing, granted permission and under construction) within 2 kilometres of the proposed turbine locations should be provided as part of this chapter. | A figure showing the locations of residential houses within 10 times the rotor diameter (1.62km) is provided in Figure 16-2, Chapter 16 Shadow Flicker. A comprehensive check was undertaken to ensure that there were no granted planning or dwellings under construction missing from this area within the assessment process. |
| 8 | Pg 36 A map showing all permitted and under construction energy developments within 15km of the subject site should be provided as part of this chapter. | Figure 2-11 is provided in Chapter 2 Project Description of the EIAR showing all proposed, consented and existing wind farm developments within a 25km radius. |
| 9 | Pg 36 the Commission may deem it necessary that the EIAR considers the quantity of carbon released from the felling of the 21 hectares of woodland and the provision of materials for the turbine concrete bases and access roads (referred also to comment box page 9 in relation to anomaly on total area of tree falling within the documentation). | The carbon losses due to the proposed project are fully assessed in Chapter 13 Air and Climate, Table 13-16 in the EIAR outlines the losses due to felling and turbine construction. |
| 10 | Pg 38 the planning authority notes there is no reference to the location of the proposed replacement woodland which shall offset the felling of approximately 18 hectares of commercial forestry and are of opinion that further information should be provided on this matter refer also to comment box page 9 in relation to anomaly on total area of tree felling within the documentation). | Section 2.3.14 Replant Lands, within the EIAR outlines the commitments in relation to replant lands noting that any felling will be subject to licence by the Department of Agriculture, Food and Marine. |
| 11 | Pg 41. With regard to the proposed habitat creation areas the planning authority seek that additional information be given on the proposed location for same as it is not clear from the submitted documentation where all six numbered parcels are located in addition the proposed location of the habitat rewilding area shown in figure 12 above is queried given that it is located within the centre of the access roads for the proposed substation area and to turbines one to three it is the view of the planning authority that this matter should be considered further. | The landscaping plan Drawing number 23882-MWP-00-00-DR-C-5426 outlines the rewilding area in detail and the native hedgerow creation. The Figure 12 referred to in the submission (Figure 6-8 in the EIAR) shows the rewilding area to the west of the access road and not in the centre of the access road. |
| 12 | Pg 41 the planning authority queries the separation distance given between the subject site and Charleville wood SAC (i.e. nearly 10 kilometres downstream). it is noted that this SAC is located approximately 25 kilometres (as the crow flies) Southwest of the subject site. | The Charleville Wood SAC is 10km downstream from the Ballina (Geashill By) Turbine Delivery Route (TDR) turning point that is redlined as part of the Proposed Development. The TDR was included and assessed in the EIAR. |
| 13 | Pg 42 as previously noted above, the planning authority considers further information with regard to the reinstatement of habitats within the proposed development site should be sought. | See above response item no. 11. |
| 14 | Pg 43. As stated in Chapter 7 of the EIAR, long term moderate impact on the Merlin and Woodcock is expected during the construction phase due to habitat loss while the snipe will suffer a long-term moderate impact due to disturbance displacement. It is | See section 3.8 Ornithology for full response. |

| Item No. | Comments/Queries | Response |
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| | acknowledged by the planning authority that these impacts are Not Significant however the applicant should provide details on whether it is proposed to create suitable offset lands or potential enhancement of surrounding land in order to offset the loss of habitat created as a result of the proposed development. | |
| 15 | Pg 44. The local authority's environment and water section are satisfied with the findings of the assessment by the applicant and have provided a set of planning conditions which are outlined in appendix a of this report. | Noted. |
| 16 | Pg 45. Land and soils. The planning authority has no reason to dispute the details provided in this chapter and of no matters to raise in this regard. | Noted. |
| 17 | Pg 47. Noise. The planning authority are not satisfied that sufficient details on noise and in particular the combined noise generation from the proposed development and existing wind farms in the local area have been provided by the applicant. | See Appendix 1 for the full noise submission response. |
| 18 | Pg 47. Regarding the identified noise sensitive locations (NSL's) the planning authority notes that as the competent authority the Commission must be satisfied that the identified NSL's are suitable and acceptable. | See Appendix 1 for the full noise submission response. |
| 19 | Pg 47. The planning authority confirms that the Yellow River wind farm referenced in the chapter is now fully operational. Given the scale of the Yellow River wind farm at 29 wind turbines and its proximity to the subject site it is the view of the planning authority that in order to carry out a robust commutative noise assessment as part of the proposed development that the generating wind turbine noise for the adjoining wind farm is necessary and required to be included in any measurements for establishing the baseline of noise levels. | Refer to Appendix 1 (Noise), Section 2.2.1 of this response document for response. |
| 20 | Pg 47. Consistent with the findings of recent High Court decisions including Gibbet hill and Ballyduff the planning authority place emphasis on the need for a noise complaint monitoring program being agreed prior to the commissioning of a wind farm if permitted. | Noted. |
| 21 | Pg 47. Landscape and visual. In the absence of an overall map showing all of viewpoints (VP's) referenced in the submitted documentation the planning authority has concerns in relation to the overall assessment of the prominent views of the proposed development from other vantage points in particular to the east of the subject site area. | Locations of the viewpoints included in the photomontages and assessment are shown in Appendix 11-2. As stated in Section 11.3.5 selected viewpoints are shown on the map in the photomontage booklet. |
| 22 | Pg 48. The planning authority has concerns regarding the potential impact on dwellings which are located South of T1 and T3 and north of T4 and T5 due to the siting and layout of the proposed turbines. | EIAR Chapter 11 LVIA has assessed the visual and landscape effects at the area of concern highlighted in the submission. Please refer to full response Section 3.9. |
| 23 | Pg 48. It is noted that the commutative impact of permitted but not yet constructed wind turbines has not | Cumulative impact of permitted but not yet constructed wind farms is fully addressed in the Landscape and Visual |

| Item No. | Comments/Queries | Response |
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| | been factored into the LVIA by the applicant. It is the view of the planning authority that a revised landscape and visual impact assessment should be provided by the applicant to inform its assessment of the proposed development. | Impact Chapter of the EIAR, Section 11.5.10 Cumulative Impacts and Effects. Table 11-11 lists the planned, permitted and operational wind farms included. The photomontage booklet includes all permitted and not yet constructed wind farms within it and the viewpoints are assessed with these wind farms included. |
| 24 | Pg 49. Having examined the documentation submitted, the local authorities senior executive architect notes that in order to fully consider the potential visual impact on the setting of the Ballinla House (a protected structure) and substantiate the statement by the applicants that the proposed development "will have no direct impact on protected structures within the vicinity", photomontages should be provided from this sensitive viewpoint. | See response in Section 3.9 and 3.11. |
| 25 | Pg 49. The planning authority queries the applicant's position that "the proposed development will generate electricity that would otherwise require the burning of fossil fuels". Consideration should be afforded to alternative renewable energy types. | See response number 5 above. Any renewable energy generation on the current grid will directly displace generation from fossil-fuel-based plant on the national grid. As outlined in response 5 of this table this is an application for a wind farm, and a mix of renewables are required to achieve Irelands climate targets. |
| 26 | Pg 50. Material Assets Built Services. The planning authority has no matters to raise at this time it is acknowledged that any matters raised by prescribed bodies and are third bodies will be integral to their commission's assessment of the proposed SID. | Noted. |
| 27 | Pg 51. Material Assets Traffic and Transport. The Local Authorities Roads Section and the Edenderry Municipal District Engineer seek that further information be provided in relation to traffic impact. Shortfalls in relation to the applicant's submitted details are required prior to any grant of permission so as to fully assess the potential impacts of the proposed development. Please refer to appendix A of this report. | For OCC full response on traffic and transport see Section 3.7. |
| 28 | Pg 51 Shadow Flicker. Given the proximity of proposed turbines to a number of dwellings within the vicinity of the subject site, the planning authority has reservations about the potential impacts on nearby dwellings as a result of shadow Flicker. Please refer to section 13 of this report for further comments on this matter. | The Applicant has committed to a zero impact from Shadow flicker on all residential houses as per Chapter 16 Shadow Flicker of the EIAR. See Section 4.4.1 below for more detail. |
| 29 | Pg 66. Community Gain. Notwithstanding the information above, it is considered that the submitted planning documentation is light on details in relation to the breakdown for the various funding elements of the Community Fund and on the specifics on actual implementation and selection criteria associated the Community Gain schemes for this Ballinla Wind Farm development. | Chapter 5 Population and Human Health Section 5.4.2.3 of the EIAR outlines the Community Benefit Fund principle for the Proposed Development. The Community Benefit Fund will be delivered in full compliance with the Renewable Electricity Support Scheme (RESS) Community Benefit Fund Guidelines, which prescribe the funding structure, eligible expenditure, governance requirements, implementation process and selection criteria. These national requirements determine the breakdown of funding elements and the operational framework for all RESS-supported projects. |
| 30 | In terms of potential amenity provisions proposed by the project, the Planning Authority seeks confirmation from | No amenity trails are proposed within the development. The design has been refined to focus on the |

| Item No. | Comments/Queries | Response |
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| | the applicant as to whether the proposed development will include for any provision of amenity trails. | infrastructure required for the safe and compliant delivery of the wind farm. Significant effort was made to protect the existing Grand Canal amenity trail, including the removal of three turbines from the initial layout to ensure its continued use and character were fully preserved. |

### 3.1.2 Request for Further Information

The applicant notes the items raised in the request for further information and has reviewed them in the context of the proposed conditions issued by OCC. It is evident that the majority of the matters identified are comprehensively covered within the planning application and the suite of conditions proposed, as summarised in Table 2.

**Table 2: RFI Request Response**

| Ref | OCC RFI Request | OCC Proposed Condition Reference |
|---|---|---|
| a) | The applicant shall submit details on proposals for the existing public road at the proposed site entrances on the L5010 including proposals for strengthening the road fabric at the entrances, to resist damage likely to be caused by HGV's entering and existing the site during the construction period. These details should include proposed road build up/specification, which shall comply with TII Specifications for Road Works Series 900 (latest edition) and details of longitudinal & cross sections. | |
| b) | The Applicant shall submit drawings with details of surface water measures at the proposed site entrances including roadside drainage and details of gully and soakaway locations. The drawings shall also detail/show any proposed line marking and signage at/near the site entrances. | Proposed Condition 1<br>Refer to Section 3.1.3. |
| c) | The applicant shall provide details to mitigate deposition/ spillage of site materials onto the public road(s) during construction works. | |
| d) | The applicant shall submit details of the proposed wheel wash facilities for all vehicles (HGV's) leaving the site(s) from both access points on the L5010. | |
| e) | The applicant shall submit details of locations, size and proposed construction details/buildup of proposed passing bays along the L5010. | |
| f) | The applicant shall submit details and drawings for the proposed temporary turning head at Ballyfore R402/L5006 junction & entering Ballinla west along the L5010 towards Lumville. | |
| g) | The applicant shall submit details regarding the number and weight of loads of timber to be removed from the site. Details | Proposed Condition 3<br>Refer to Section 3.1.3. |

| Ref | OCC RFI Request | OCC Proposed Condition Reference |
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| | of the destination of same and haul route to be used is also required. | |
| h) | The applicant shall submit a report including a survey of the roads and bridges along the proposed haul routes, carried out at the developers expense by a suitably qualified person. This report shall include a schedule of proposed works to roads, bridges or any other public infrastructure to enable/ upgrade the haul route(s) to be used by construction related traffic. | Proposed Condition 2<br>Refer to Section 3.1.3. |
| i) | The applicant is requested to clarify whether surplus material is intended to be retained on site or disposed of offsite. | As outlined in the EIAR, suitable surplus spoil arising during the works will be retained and reused onsite in accordance with the construction methodology and the commitments set out in the application documentation. Where material is deemed unsuitable for reuse onsite, it will be removed from the site and disposed of at an appropriately licensed waste facility by an authorised contractor. All spoil management will be undertaken in accordance with the CEMP and relevant waste legislation. |
| j) | The applicant shall submit details regarding number & weight of loads for pre-cast concrete culverts components proposed. | Proposed Condition 5<br>Refer to Section 3.1.3. |

### 3.1.3 Proposed Conditions

OCC, in its submission on the Proposed Development, has outlined a number of recommended conditions relating to construction traffic, infrastructure protection, stakeholder engagement, and environmental management. The applicant welcomes OCC's input and is satisfied to comply with these requirements. A summary of the proposed conditions and the applicant's responses is provided in Table 3.

**Table 3: OCC Proposed Condition Responses**

| Proposed Condition Reference | Proposed Condition | Response |
|---|---|---|
| 1 | Prior to commencement, the applicant shall submit details to OCC/Edenderry MD regarding:<br>(a) Road strengthening at entrances;<br>(b) Surface water measures at entrances;<br>(c) Line marking and signage;<br>(d) Measures to mitigate deposition/spillage;<br>(e) Wheel wash details;<br>(f) Passing bay details;<br>(g) Temporary turning head details at Ballyfore R402/L5006 junction. | The CEMP included in the application commits to road protection, drainage controls, wheel wash facilities, traffic management and construction phase mitigation. All mitigation measures included within the EIAR and CEMP shall be implemented in full.<br>An updated CEMP containing site specific details of all on-site construction works, post-construction reinstatement, drainage, mitigation, and monitoring measures, together with details of their timetabling, shall be submitted to, and agreed in writing with the local authority prior to commencement of development. |
| 2 | Pre- and post-construction road and bridge condition surveys, including schedules of required works, to be agreed with the Roads Authority and | The applicant notes the TMP included in the application commits to pre-construction road and bridge condition surveys on the haul routes on the L5010 and L5006, including photographic and structural assessments, to establish a baseline. Monitoring will continue throughout the construction period, with periodic inspections to identify any deterioration attributable |

| Proposed Condition Reference | Proposed Condition | Response |
|---|---|---|
| | completed at the developer's expense. | to construction traffic, particularly from HGVs. Post-construction surveys will also be carried out, and any damage directly linked to project activities will be repaired in consultation with OCC. |
| 3 | Submit details of number and weight of timber loads, destination and haul route. | The TMP submitted with the planning application identifies the designated haul routes for construction traffic, the expected vehicle types, and the procedures for managing material movements.<br><br>In accordance with these commitments, the number and weight of timber loads, together with their destination and haul route, will be confirmed and incorporated into the updated TMP to be submitted for the written agreement of the Planning Authority prior to commencement. Similarly, the number and weight of components will be detailed in the updated TMP and will align with the haulage arrangements and traffic control measures set out in the submitted TMP. All such movements will be managed in accordance with the agreed haul routes and the traffic management procedures described in the TMP. |
| 4 | Clarify whether surplus material is retained onsite or disposed offsite | Suitable surplus spoil arising during the works will be retained and reused onsite in accordance with the construction methodology and the commitments set out in the application documentation. Where material is deemed unsuitable for reuse onsite, it will be removed from the site and disposed of at an appropriately licensed waste facility by an authorised contractor. All spoil management will be undertaken in accordance with the CEMP and relevant waste legislation. |
| 5 | Submit details of number and weight of pre-cast concrete culvert components. | The TMP submitted with the planning application already identifies the designated haul routes for construction traffic, the expected vehicle types, and the procedures for managing material movements.<br><br>In accordance with these commitments, the number and weight of timber loads, together with their destination and haul route, will be confirmed and incorporated into the updated TMP to be submitted for the written agreement of the Planning Authority prior to commencement. Similarly, the number and weight of components will be detailed in the updated TMP and will align with the haulage arrangements and traffic control measures set out in the submitted TMP. All such movements will be managed in accordance with the agreed haul routes and the traffic management procedures described in the TMP. |
| 6 | No construction delivery vehicles shall access the site via the northern L5006 and Trimblestown Bridge. | The applicant accepts this condition. As confirmed in the TMP and TDR Assessment submitted with the planning application, the designated haul routes for construction traffic and abnormal loads do not include the northern section of the L5006 or the Trimblestown Bridge. No construction delivery vehicles will access the site via this section of the road network, and all construction traffic will be routed in accordance with the agreed haul routes set out in the application documentation. |
| 7 | Visibility splays at all entrances to comply with DMS-097/098; hedges to be trimmed; wheel wash to be used. | The proposed site entrances, including the required visibility splays, are detailed in Drawing No. 23882-MWP-00-00-DR-C-5032, which accompanies the application. Any necessary hedge trimming to maintain compliance with DMS-097/098 will be undertaken prior to commencement of construction.<br>In addition, the CEMP commits to the provision and operation of a wheel wash facility at each site entrance, ensuring that mud and debris are not deposited on the public road network. The development will be carried out in accordance with these submitted plans and commitments. |

| Proposed Condition Reference | Proposed Condition | Response |
|---|---|---|
| 8 | Submit a Construction Management Plan (CMP) covering compound layout, phasing, traffic, noise, dust, waste, refuelling, surface water, etc. | A CEMP has been submitted as part of the planning application in addition to a construction compound layout (23882-MWP-00-00-DR-C-5411). The CEMP includes details of compound layout construction phasing, traffic management, noise and dust control, waste handling, refuelling procedures and other site operations. This CEMP will be updated and finalised prior to commencement of development and submitted for the written agreement of the Planning Authority. The development will thereafter be carried out in full accordance with the agreed CEMP. |
| 9 | Any changes to material sources or haul routes must be notified to OCC. | The applicant accepts this condition and will notify OCC of any changes to material sources or haul routes in advance. |
| 10 | OCC requires access to regular TMS live system reports. | The TMP submitted with the application confirms that a Transport Management System (TMS) will be used to coordinate construction traffic and turbine component deliveries. Access to TMS live system reports will be provided to OCC, with the format and frequency of reporting to be agreed with the Roads Authority as part of the updated Traffic and Transport Management Plan to be submitted prior to commencement. |
| 11 | Developer to liaise with TII and OCC regarding deliveries; upgrade works may be required. | As confirmed in both the TMP and the CEMP submitted with the planning application, the applicant will liaise proactively with TII and OCC in relation to all construction deliveries, including abnormal loads and oversize components. |
| 12 | Submit detailed programme of deliveries including dates, times, loads, closures, etc. | The TMP submitted with the planning application identifies the designated haul routes for construction traffic, the expected vehicle types, and the procedures for managing material movements.<br><br>In accordance with these commitments, the number and weight of timber loads, together with their destination and haul route, will be confirmed and incorporated into the updated TMP to be submitted for the written agreement of the Planning Authority prior to commencement. Similarly, the number and weight of components will be detailed in the updated TMP and will align with the haulage arrangements and traffic control measures set out in the submitted TMP. All such movements will be managed in accordance with the agreed haul routes and the traffic management procedures described in the TMP. |
| 13 | Developer to adhere to OCC abnormal load procedures. | The TMP submitted with the planning application commits to full adherence to the relevant abnormal load procedures, including those of OCC. |
| 14 | Provide evidence of landowner agreements at nodes and entry/exit points. | All relevant landowner consent letters were included in the planning application. |
| 15 | Any damage to roads to be repaired to OCC satisfaction. | As detailed in the TMP submitted with the application, a comprehensive road pavement monitoring programme will be implemented for the duration of the construction phase. This includes pre-construction condition surveys of the local haul routes on the L5010 and L5006, periodic inspections during construction to identify any deterioration attributable to project traffic, and post-construction surveys to confirm the final condition of the road network. Any damage directly linked to construction activities will be repaired by the developer in consultation with, and to the satisfaction of, OCC. |

| Proposed Condition Reference | Proposed Condition | Response |
|---|---|---|
| 16 | Developer to consult with all relevant stakeholders regarding turbine delivery routes. | As outlined in the TMP included with this application, advance notice of abnormal load and turbine deliveries will be issued to potentially impacted properties along the haul route, and that liaison will be maintained with OCC, TII, An Garda Síochána, and other relevant stakeholders throughout the delivery planning process. |
| 17 | Any alterations affecting the width of the existing road shall be reinstated to the original width unless otherwise agreed. Where widening occurs, specification to be agreed with OCC/EMD. | The applicant accepts this condition. |
| 18 | All green/landscaped areas affected by works shall be reinstated. Mature trees to be replaced with younger trees plus additional landscaping if necessary. Hedging to be protected and maintained until established. | The CEMP included with this application commits to the reinstatement of areas following construction including re-vegetation and replanting of hedgerows with native species. |
| 19 | Signage and street furniture to be removed and reinstated using retention sockets. Public lighting poles to be relocated if required, with lighting design submitted for approval. | The TMP submitted with the planning application confirms that all necessary temporary modifications to public infrastructure, including signage, street furniture and lighting, will be coordinated in advance with the relevant authorities. Where removal is required to facilitate turbine deliveries or construction access, items will be reinstated to ensure minimal disruption and full restoration. |
| 20 | Hedgerows to be reinstated with native mix. Turning area hardstand to be secured to prevent nuisance parking. | The CEMP included with this application commits to the reinstatement of areas following construction including replanting of hedgerows with native species. |
| 21 | Oversize turbine component deliveries restricted to nighttime hours. | The TMP submitted with the planning application confirms that all oversize turbine components will be delivered during nighttime hours to minimise disruption to daytime traffic and ensure safe passage along the haul route. |
| 22 | Passing bays required along the L-5010; details to be agreed prior to commencement. | The TMP included in the application commits to providing vehicle passing bays along the L5010 prior to the commencement of construction in consultation with OCC, to facilitate two-way vehicle traffic movements. |
| 23 | Transport Management Plan to be submitted, including haulage routes, vehicle types, and control measures. | The TMP submitted with the planning application identifies the designated haul routes for construction traffic, the expected vehicle types, and the procedures for managing material movements.<br><br>In accordance with these commitments, the number and weight of timber loads, together with their destination and haul route, will be confirmed and incorporated into the updated TMP to be submitted for the written agreement of the Planning Authority prior to commencement. Similarly, the number and weight of components will be detailed in the updated TMP and will align with the haulage arrangements and traffic control measures set out in the submitted TMP. All such movements will be managed in accordance with the agreed haul routes and the traffic management procedures described in the TMP. |
| 24 | All road surfaces, culverts, watercourses, verges and public lands to be protected and reinstated if damaged. | As detailed in the TMP submitted with the application, a comprehensive road pavement monitoring programme will be implemented for the duration of the construction phase. This includes pre-construction condition surveys of the local haul routes on the L5010 and L5006, periodic |

| Proposed Condition Reference | Proposed Condition | Response |
|---|---|---|
| | | inspections during construction to identify any deterioration attributable to project traffic, and post-construction surveys to confirm the final condition of the road network. Any damage directly linked to construction activities will be repaired by the developer in consultation with, and to the satisfaction of, OCC. |
| 25 | Developer to lodge a bond or cash deposit to secure reinstatement of public roads. | The applicant accepts this condition. |
| 26 | Developer to liaise with OCC regarding deliveries; detailed programme to be submitted once suppliers are confirmed. | The TMP submitted with the planning application identifies the designated haul routes for construction traffic, the expected vehicle types, and the procedures for managing material movements.<br><br>In accordance with these commitments, the number and weight of loads, together with their destination and haul route, will be confirmed and incorporated into the updated TMP to be submitted for the written agreement of the Planning Authority prior to commencement. Similarly, the number and weight of components will be detailed in the updated TMP and will align with the haulage arrangements and traffic control measures set out in the submitted TMP. All such movements will be managed in accordance with the agreed haul routes and the traffic management procedures described in the TMP. |
| 27 | Traffic management plans to be submitted detailing haulage of materials, including entry/exit points. | |
| 28 | Pre-condition surveys along haul routes, including video, photographs, road condition survey and FWD survey where required. | The applicant notes the TMP included in the application commits to pre-construction road and bridge condition surveys on the haul routes on the L5010 and L5006, including photographic and structural assessments, to establish a baseline. Monitoring will continue throughout the construction period, with periodic inspections to identify any deterioration attributable to construction traffic, particularly from HVs. Post-construction surveys will also be carried out, and any damage directly linked to project activities will be repaired in consultation with OCC. |
| 29 | Where haul routes are not in suitable condition, developer shall upgrade them in advance. | |
| 30 | Any defects appearing on haul routes during construction shall be rectified by the developer. | |
| 31 | Any damage caused to the road network shall be repaired to OCC satisfaction. Any damage caused to the road network shall be repaired to OCC satisfaction. | |
| 32 | Public roads to be kept free of mud, dust, spillages and debris. | The CEMP included in the application commits to road protection, drainage controls, wheel wash facilities, traffic management and construction phase mitigation. All mitigation measures included within the EIAR and CEMP shall be implemented in full. |
| 33 to 44 | | Conditions 33–44 relate to road opening and reinstatement requirements associated with cable route works. As confirmed in the application documentation, the grid connection does not form part of this planning application and will be subject to a separate consent process. These conditions are therefore not applicable and are not addressed further. |

## 3.2 DAU

### 3.2.1 Items Raised

Table 4 outlines our responses to queries raised by DAU.

**Table 4: DAU Items Raised**

| Item Number | Comments/Queries | Response |
|---|---|---|
| 1 | Pg1. No advance archaeological investigations were undertaken to inform the EIAR, other than a walkover survey. | The level of site investigation is acknowledged by the applicant. The applicant is satisfied that the AIA, as presented, provides adequate information to allow a decision to be made in relation to archaeology/cultural heritage. See Section 3.11. |
| 2 | Pg 1. The development is close to several statutorily protected monuments, with EIAR acknowledged potential negative impacts for unknown sub-surface archaeology within the site. Archaeological test excavation and geophysical survey should be carried out prior to any development. If archaeological material is identified, additional mitigation will be required, including preservation in situ or preservation by record (full excavation), Department advises that this could be addressed as a condition of planning. | See response in Section 3.11. |
| 3 | Pg 2. Indirect impacts on the setting of National and Recorded Monuments are inadequately assessed, due to a poorly defined and overly limited AIA study area, with wider landscape effects dismissed without justification (EIAR Section 12.5.2). | See response in Section 3.11. |
| 4 | Pg 2. Cumulative impacts on archaeological and cultural heritage are not evaluated, having been excluded from the AIA and discounted without supporting rationale (EIAR Section 12.5.4). | Cumulative impact was evaluated in the EIAR Chapter 12 Heritage in Section 12.5.4. There was no Recorded Monuments or National Monuments identified as potentially being significantly impacted due to distance, topography, and character. See section 3.11 for more info. |
| 5 | Pg 2 to Pg 3. Potential indirect impacts on archaeological settings are not adequately assessed, as ZTV analysis indicates turbine visibility and possible setting impacts extending up to 10km from the site (EIAR Section 11.3.4.1; Figure 11-5), yet the archaeological assessment in Chapter 12 applies a much smaller inferred study area (c. 2–2.5km), dismisses indirect effects without substantive assessment (Section 12.5.2), and fails to integrate findings from the LVIA, resulting in an insufficient evaluation of impacts on the wider archaeological landscape. | See response in Section 3.11. |
| 6 | 6. Pg 3. Potential impacts on the setting of statutorily protected National Monuments and recorded monuments within c. 10km of the site. | See response in Section 3.11. |
| 7 | Pg 4. The LVIA (Chapter 11, Appendix 11/1) confirms turbine visibility and negative visual effects at Croghan Hill (VP29). However, Chapter 12 does not contextualise its potential relevance to the specific archaeological and cultural heritage landscape context. | See response in Section 3.11. |

| Item Number | Comments/Queries | Response |
|---|---|---|
| 8 | Pg 4. The LVIA (Chapter 11, Section 11.2.10) considers cumulative landscape impacts, but only in terms of the more general landscape considerations. However, it is not clear if the likely cumulative effects of this proposed development to the archaeological and cultural heritage environment have been adequately evaluated. | See response item 4 above and Section 3.11. of this response. |

### 3.2.2 Proposed Conditions

DAU, in its submission on the Proposed Development, has outlined a number of recommended conditions relating to construction traffic, infrastructure protection, stakeholder engagement, and environmental management. The applicant welcomes DAU's input and is satisfied to comply with these requirements. A summary of the proposed conditions and the applicant's responses is provided in Table 5.

**Table 5: DAU Proposed Condition Responses**

| Proposed Condition Reference | Proposed Condition | Response |
|---|---|---|
| 1 | All mitigation measures in relation to archaeology and cultural heritage as set out in Chapter 12 of the EIAR (date July 2025) shall be implemented in full, except as may otherwise be required in order to comply with the conditions of this Order. | The applicant has reviewed the proposed planning conditions recommended for inclusion in any grant of permission and confirms that there are no observations to the conditions as drafted. |
| 2 | The developer shall engage a suitably qualified Archaeologist (licensed under the National Monuments Acts) to carry out a pre-development Archaeological Geophysical Survey and a pre-development Archaeological Test Excavation of the development site for all greenfield sections of the development and to submit an Archaeological Impact Assessment Report for the written agreement of the Planning Authority, following consultation with the National Monuments Service, in advance of any site preparation works or groundworks, including site investigation works/topsoil stripping/site clearance and/or construction works.<br><br>a. The Archaeological Geophysical Survey must be carried out under licence from the National Monuments Service or Ministerial Consent (as applies) and in accordance with an approved Method Statement. Having completed the work, the Archaeologist shall submit a written report to the Department and to the Planning Authority describing the results of the Archaeological Geophysical Survey.<br>b. The Project Archaeologist shall liaise with the National Monuments Service (NMS) to establish—based on the results the Archaeological Geophysical Survey—the appropriate scope of the Archaeological Test Excavation to adequately characterise the character and extent of any potential subsurface archaeological material within the development site.<br>c. The report on the Archaeological Test Excavation shall include an Archaeological Impact Statement and Mitigation Strategy. Where archaeological material is shown to be present, avoidance, preservation insitu, preservation by record (archaeological excavation) and/or monitoring may be required.<br>d. Any further archaeological mitigation requirements specified by the Planning Authority, following consultation with the National Monuments Service, shall be complied with by the developer.<br>e. No site preparation and/or construction works shall be carried out on site until the Archaeologist's report has been submitted to and approval to proceed is agreed in writing with the Planning Authority. | |
| 3 | The CEMP shall include the location of any and all archaeological or cultural heritage constraints relevant to the proposed development as set out in Chapter | |

| Proposed Condition Reference | Proposed Condition | Response |
|---|---|---|
| | 12 of the EIAR and by any subsequent archaeological investigations associated with the project. The CEMP shall clearly describe all identified likely archaeological impacts, both direct and indirect, and all mitigation measures to be employed to protect the archaeological or cultural heritage environment during all phases of site preparation and construction activity. | |
| 4 | The Planning Authority and the Department shall be furnished with a final archaeological report describing the results of all archaeological monitoring and any archaeological investigative work/excavation required, following the completion of all archaeological work on site and any necessary post-excavation specialist analysis. All resulting and associated archaeological costs shall be borne by the developer. | |

## 3.3 Department of Defence

### 3.3.1 Items Raised

Table 6 outlines our responses to queries raised by DOD.

**Table 6: DOD Items Raised**

| Item Number | Comment/Query Raised | Response |
|---|---|---|
| 1 | Pg3. All turbines should be illuminated by Type C, Medium intensity, Fixed Red obstacle lighting with a minimum output of 2,000 candela to be visible in all directions of azimuth and to be operational H24/7 days a week. Obstacle lighting should be incandescent or, if LED or other types are used, of a type visible to Night Vision equipment. Obstacle lighting used must emit light at the near InfraRed (IR) range of the electromagnetic spectrum, specifically at or near 850 nanometres (nm) of wavelength. Light intensity to be of similar value to that emitted in the visible spectrum of light. | Noted and agreed. EIAR Chapter 2, Pg 11 - It is proposed to install lighting on the turbines in a pattern that is acceptable to the Irish Aviation Authority/AirNav Ireland for aviation visibility purposes. |
| 2 | Pg3. In the event negative impacts on future military radar systems, the owner will engage with the Department of Defence and will provide suitable mitigations as soon as practical. | Noted and agreed. |
| 3 | Any Irish Air Corps (IAC) requirements are separate to Irish Aviation Authority (IAA) requirements. | Noted and agreed. |

## 3.4 Health Service Executive

### 3.4.1 Items Raised

Table 7 outlines our responses to queries raised by HSE.

**Table 7: HSE Items Raised**

| Item Number | Comment/Query Raised | Response |
|---|---|---|
| 1 | Pg 4. The HSE notes that the EIAR applies a population health methodology, which differs from individual-based assessments by focusing on established land use, service provision, and community activities when evaluating potential significant effects on population and human health. The HSE advises that this population health approach is appropriate and should be followed by the Planning Authority when considering public health in its decision-making. | Noted and agreed. |
| 2 | Pg 5-6. Ireland's adopted Wind Energy Development Guidelines (2006) are outdated and do not reflect current turbine scale, proximity to populations, cumulative effects, or the expanded evidence base on health impacts such as noise and shadow flicker. While noting the High Court judgment in Webster/Rollo v Meenaclogher (Wind) Limited (2024 IEHC 136), the HSE emphasises that this was a site-specific private nuisance case based on actual noise exposure and individual health effects, and does not provide a predictive methodology for planning decisions in the absence of up-to-date national wind energy guidance. | For full HSE submission response please refer to Appendix 1 Noise and vibration, Section 4. |
| 3 | Pg 8. It should be noted by the Planning Authority that the following 'The HSE 'Position paper on wind turbines and public health' has been withdrawn by the HSE and is under review. | Noted. |
| 4 | Pg 9. In the interest of the protection of public health the proposed zero shadow flicker identified in chapter 16 of the EIAR should be conditioned if permission is given for the development. | Noted, commitment to this is outlined in Chapter 16 of the EIAR. |
| 5 | Pg 9. The HSE observes that the 2006 noise guidance may not adequately protect public health, particularly in quiet areas, as it allows significant turbine noise increases that are likely to cause complaints. | For full HSE submission response please refer to Appendix 1 Noise and vibration, Section 4. |
| 6 | Pg 10. Noise assessments should use up-to-date scientific evidence and health-based standards, such as the 2018 WHO Environmental Noise Guidelines, rather than relying solely on older planning guidance. | For full HSE submission response please refer to Appendix 1 Noise and vibration, Section 4. |
| 7 | Pg 11-12. The methodology in Section 5.12 for cumulative noise impact assessment is flawed, as it allows health protection limits to be exceeded to permit development and increases exposure limits based on background noise, which lacks a rational basis for protecting public health when wind turbine noise remains the dominant source. | The noise impact assessment was carried out to current industry standards. The guidelines followed included the Wind Energy Guidelines (2006) and the assessment follows the Instituted of Acoustics Good Practice Guide (ETSU-R-97) standardised and modernised in 2013. The noise assessment methodology acknowledges that background noise increases at any given location as wind speed increases. This rational is based on actual measurements. For full HSE submission response please refer to Appendix 1 Noise and vibration, Section 4, of this document. |
| 8 | Pg 12. NEHS considers no additional noise mitigation is needed if EIAR measures are fully implemented and recommends restricting | Noted. |

| Item Number | Comment/Query Raised | Response |
|---|---|---|
| | construction hours (Mon–Fri 08:00–19:00, Sat 09:00–14:00, no work on Sundays/Bank Holidays) to protect public health, with exceptions only by Planning Authority approval. | |
| 9 | Pg 12. NEHS considers that full implementation of the EIAR Chapter 18 mitigation, the CEMP, and the surface water management plan will adequately protect public and environmental health during construction. | Noted. |
| 10 | Pg 13. The NEHS has reviewed the CEMP and considers it comprehensive, with sufficient measures to protect public and environmental health during construction, provided all mitigation measures are fully implemented. | Noted. |

## 3.5 Transport Infrastructure Ireland

### 3.5.1 Proposed Conditions

TII, in its submission on the Proposed Development, has outlined a number of recommended conditions relating to construction traffic, infrastructure protection, stakeholder engagement, and environmental management. The applicant welcomes TII's input and is satisfied to comply with these requirements. A summary of the proposed conditions and the applicant's responses is provided in Table 8.

**Table 8: TII Proposed Condition Responses**

| Proposed Condition Reference | Proposed Condition | Response |
|---|---|---|
| 1 | An updated Construction Environmental Management Plan (CEMP) and Traffic Management plan (TMP) shall be prepared and agreed with relevant County Councils and TII, prior to the commencement of development. The matters to be addressed in the CEMP and TMP relating to national road network maintenance and road safety shall include: | The applicant has reviewed the proposed planning conditions recommended for inclusion in any grant of permission and confirms that there are no observations to the conditions as drafted. |
| 2 | Demonstration that Compliance with TII Publications (Standards) in accordance with relevant TII Publications (Technical) will be required for any work that may impact the national road pavement, structures and infrastructure including drainage. | |
| 3 | All national road structures on the haul route through all the relevant County Council administrative areas shall be checked by the applicant/developer to confirm their capacity to accommodate any abnormal 'weight' load proposed. Any requirements for 'Exceptional Abnormal Loads' shall be addressed in accordance with TII Publications. | |
| 4 | The haul route shall be assessed to confirm capacity to accommodate abnormal 'length' loads and any temporary works required are identified. Any damage caused to the pavement of the existing national road due to the turning movement of abnormal 'length' loads (e.g. tearing of the surface course) shall be rectified in accordance with TII Pavement Standards and details in this regard shall be agreed with the Road Authority prior to the commencement of any development onsite. | |
| 5 | Any proposed works associated with the haul route on the national road network, including signage, to facilitate construction traffic shall comply with TII Publications and shall be subject to Road Safety Audit as appropriate. Works and traffic management shall ensure the ongoing safety for all road users and prior to any development necessary licenses, approvals or agreements with PPP Concessions, Motorway Maintenance and Renewal Contracts (MMaRC) Companies and local road authorities for the entire haul route shall be in place. | |

## 3.6 Uisce Eireann

### 3.6.1 Items Raised

Table 6 outlines our responses to queries raised by DOD.

**Table 9: UE Items Raised**

| Item Number | Comment/Query Raised | Response |
|---|---|---|
| 1 | No connection to Uisce Éireann is proposed; all sanitary wastewater will be stored in holding tanks and removed by private contractors as required. | Noted, agreed and stated in the CEMP. |
| 2 | Works will be near Uisce Éireann infrastructure and must protect assets, maintain required separations, and comply with Uisce Éireann standards, with diversions required where safety or separation cannot be achieved. | Noted, agreed and stated in EIAR Chapter 14 and the CEMP. |
| 3 | Uisce Éireann confirms the proposal will not impact public drinking water sources or quality and is satisfied with the Water Framework Directive assessment finding negligible risk. | Noted. |

### 3.6.2 Proposed Conditions

UE, in its submission on the Proposed Development, has outlined a number of recommended conditions relating to construction traffic, infrastructure protection, stakeholder engagement, and environmental management. The applicant welcomes UE's input and is satisfied to comply with these requirements. A summary of the proposed conditions and the applicant's responses is provided in Table 10.

**Table 10: UE Proposed Condition Responses**

| Proposed Condition Reference | Proposed Condition | Response |
|---|---|---|
| 1 | The applicant shall ensure compliance with the proposed mitigation and monitoring measures outlined in the EIAR, to ensure protection of any Uisce Éireann abstraction sources and ensure that these measures be fully complied with as a condition of grant during the pre-construction, operational and decommissioning phases of the development to ensure that there will be no negative impact to any of UÉ's Assets and / or infrastructure which may be in proximity to the development. | The applicant has reviewed the proposed planning conditions recommended for inclusion in any grant of permission and confirms that there are no observations to the conditions as drafted. |
| 2 | That the applicant shall engage with the Uisce Eireann diversions section in relation to anticipated intersections with Uisce Éireann assets along the proposed cabling route and that where necessary appropriate mitigation or diversionary measures be agreed. | |

## 3.7 Traffic and Transport

**Item Raised:**

The OCC submission contains the internal report of the District Engineer for the Edenderry Municipal District in Appendix A page 71. The internal report is incorporated into the OCC submission on pages 51-59. The report outlines the further information and the conditions requested by the District Engineer.

**Response:**

These items are standard construction-phase and traffic-management controls that are typically addressed through detailed design and implementation plans prepared following the grant of permission. The proposed conditions provide a clear and enforceable mechanism for the Planning Authority and the Roads Authority to review, agree and regulate these details prior to the commencement of works.

The applicant can supply the **further information requested** by the District Engineer with the exception of items (h) page 53) and (j) page 54).

We request that the road and bridge condition survey be addressed by way of a planning condition, as outlined in EIAR Chapter 15. Given the long lead-in periods typically associated with renewable energy projects, it is important that condition surveys are undertaken close to the commencement of construction, when they can accurately reflect the state of the road network. This ensures that any required reinforcement or reinstatement works are based on current, reliable and relevant road conditions, rather than on surveys that may have become outdated by the time construction begins..

The EIAR has assessed all potential haul routes, but completing a full upgrade schedule in advance of knowing the confirmed supplier locations would be premature as supplier location will not be known until contracts are signed in the design build phase. It must be noted that the District Engineer notes for this survey to be a condition of planning (condition 2).

In relation to RFI reference j), construction volumes have been estimated by the wind farm design engineers over the proposed development; these have been provided in Chapter 15 **Section 15.4.1.5** Delivery Vehicle Volumes of the EIAR. Standard heavy vehicle delivery trucks will be used for all these deliveries (with the exception of the TDR vehicles) and these vehicles have been used to assess the traffic and transport impact in the EIAR. At this stage of the project, the detailed design has not yet been completed, and the final culvert specifications, including dimensions, reinforcement requirements, and associated transport loads, will only be confirmed once the design-and-build contractor is appointed. Providing definitive load numbers and weights at planning stage would therefore be premature and may not reflect the final construction methodology or supplier specifications. These details are more appropriately addressed as part of the updated Traffic Management Plan to be prepared by the appointed contractor and submitted to Offaly County Council in advance of construction, in accordance with the commitments already set out in the EIAR, CEMP and TMP. It must be noted that this request for information is allowed to be a condition of planning in the municipal engineer's report on page 55 (condition 5).

**Municipal Engineer conditions of planning.**

There are a number of conditions laid out by the municipal engineer (no. 1-44, pages 54-59). Table 3 above provides a detailed breakdown on the conditions and the response.

## 3.8 Ornithology

**Item Raised**

As stated in Chapter 7 of the EIAR, long-term Moderate impact on the Merlin and Woodcock is expected during the construction phase due to habitat loss while the Snipe will suffer a long-term Moderate impact due to disturbance/displacement. It is acknowledged by OCC that these impacts are Not Significant however the applicant should provide details on whether it is proposed to create suitable offset lands or potential enhancement of surrounding land in order to offset the loss of habitat created as a result of the Proposed Development.

**Response**

Construction Phase Effects: Merlin & Woodcock

Notwithstanding the planning authority's acknowledgement that predicted effects are Not Significant, the following is noted regarding effects of construction stage habitat loss on Merlin and Woodcock.

A suite of habitat enhancement and management measures are proposed within EIAR Chapter 6 – Biodiversity, with creation of scrub, drainage ditch, and hedgerow habitat proposed to result in net gains for these habitats.

In addition to this, it is noted that an area of c. 3.06 ha of the peat deposition area (PDA) outside proposed bat buffer felling will be available for re-establishment of woodland following construction. If required by the Planning Authority, this area could be utilised to create suitable habitat for Woodcock and Merlin to contribute towards offsetting the temporary construction-stage habitat loss identified in the assessment. Should this area be used for woodland re-establishment, the planting mix can include birch and willow, along with blocks of Scots pine, which would provide appropriate structure for Merlin nesting habitat, consistent with the measures described in the EIAR. It should be noted, however, that the applicant is satisfied that the mitigation and enhancement measures set out in the submitted EIAR appropriately address the potential habitat impacts identified, and no additional measures beyond those already described in the application documentation are proposed.

Operational Phase Effects: Snipe

Regarding the Not Significant operational phase displacement effect on Snipe referred to by the planning authority, it is noted that the identified effect of displacement relates to areas of recolonising cutover bog located outside the proposed development site. As such, the proposed development site does not contain any habitat potentially suitable for creation of Snipe breeding habitat.

However, in the case of Snipe it is emphasised that availability of suitable displacement habitat in the locality is abundant, due to the presence of numerous cutover raised bogs in the surrounding area which are currently undergoing rehabilitation, including Esker Bog, Esker Bog Rathlumber, bogs at Ballyhugh c. 3 km west of the proposed development and the recolonising cutover bog at Esker More south of the R402. A high proportion of these bogs outside the predicted zone of disturbance for snipe (500m turbine buffer) comprises suitable habitat for breeding snipe (a high level analysis indicates that over 322 hectares of suitable habitat for breeding Snipe is likely to be available across these bogs, outside of the 500m turbine buffer).

## 3.9 Landscape and Visual Impact

**Item Raised**

In the absence of an overall map showing all of the Viewpoints (VPs) referenced in the submitted documentation, OCC has concerns in relation to the overall assessment of the prominent views of the Proposed Development from other vantage points, in particular to the east of the subject site.

**Response**

This statement is incorrect. The Viewpoint (VP) locations are clearly shown on the A1 sized Zone of Theoretical Visibility (ZTV) map that was submitted with the planning application. That ZTV/VP location map is also included at a smaller scale within the Chapter 11 along with Table 11.9, which provides a written description of the VP locations and the distance from site and viewing direction. A small vignette map of each individual VP location is also provided within the legend bar at the base of each photomontage sheet.

It is appropriate to show the VP location overlaid on the ZTV map as this provides an understanding of where the proposed turbines are potentially visible/not visible from within the surrounding landscape within the 20km radius LVIA study area. However, potential for visibility is only one aspect of best practice from robust VP selection.

The main consideration is ensuring that VPs represent relevant visual receptors. These are people/groups of people engaged in particular activities or resident at particular locations, which determines their relative sensitivity to visual change. In accordance with the relevant GLVIA 2013 guidance, the following receptor groups were considered and duly represented in the visual impact assessment:

- Key Views (from features of national or international importance) (KV).
- Designated Scenic Routes and Views (SR).
- Local Community views (LCV).
- Centres of Population (CP).
- Major Routes (MR).
- Amenity and heritage features (AH).

There was a total of 29 VPs assessed as part of the visual impact assessment, which is typical for LVIA for midlands wind farms in Ireland where the average number is likely to be 25-30 VPs. Whilst these were generally concentrated within 5km of the site where significant effects are more likely to occur due the relative visual prominence of the turbines in closer views, they were also well spread in terms of receptors within the wider context of the study area. The apparent OCC concerns that views from the east are not well represented are unfounded. Twelve of the VPs are contained within the eastern quarters of the study area ranging in distance from 1.1km to 18.1km away from the proposed wind farm site. More importantly, these VPs are considered to represent a robust coverage of relevant receptors within the eastern study area in accordance with guidance and best practice for wind farm LVIA in Ireland.

**Item Raised**

OCC has concerns regarding the potential impact on dwellings, which are located south of T1 and T3 and north of T4 and T5, due to the siting and layout of the proposed turbines.

**Response**

This point raises concerns about the dwellings that line the local road that dissects the northern and southern clusters of turbines and presumably the potential for turbines to be visible in multiple directions and/or a sense of being surrounded by the wind farm. This section of road was a key consideration in the LVIA for these reasons, however, the assessment concluded that the visual impacts would not be significant for reasons clearly outlined in Chapter 11. It is important to reiterate that the LVIA was prepared in accordance with all relevant guidance and current best practice for wind energy LVIA in Ireland.

Two representative viewpoints were used to examine the likely visual impacts from these residences and the local road that serves them (VP11 and VP12). The relevant section of the Chapter is 11.5.4 relating to 'Local Community' receptors and for convenience the most relevant paragraph relating to the specific effects at VP11 and VP12 is provided below:

> *"The highest significance of effect for this category of receptor was deemed to be Substantial-moderate, which is just below the threshold of a significant effect in the context of this assessment. It occurs at VP11 and VP12 which are both contained on the local road that dissects the two turbine clusters and are therefore afforded views of turbines to either side of the road and where there is some sense of being surrounded by turbines at close quarters. Notwithstanding the close association of the two VPs to one another, the viewing context is quite different, albeit resulting in the same level of assessment. For VP11 the significance of effect relates to clear and legible views of the proposed turbines to both the north and south where they contribute strongly to the scale, intensity and extent of built development relative to the baseline scenario, which does, nonetheless, consist of distant views of*

*both the Yellow River (north) and Cloncreen (south) wind farms. Conversely, for VP12 the view of the turbines of the southern cluster is close, but partially and intermittently screened by foreground vegetation and buildings whereas the view of the northern cluster is substantially screened by tall coniferous vegetation. Even though the turbines are generally less visible from VP12, the view of them is more ambiguous resulting in only a minor reduction in the overall level of effect. This illustrates the variation generally in the viewing scenario of the local population where one receptor may have open visibility of the Proposed Development and others nearby may be fully or substantially screened."*

It is also important to note that the proposed turbines all comply with the 4 X tip height set back (740m in the instance) from non-involved residential properties as required by the Draft Revised Wind Energy Development Guidelines (2019). Although this revision of the guidelines has not yet been adopted, the residential setback requirements have been established on the basis of avoiding significant effects at surrounding residential properties, including residential visual amenity effects. The scale and nature of the Proposed Development as viewed from VP11 and VP12 is common for commercial scale wind farm developments seen from local receptors throughout the country.

**Item Raised**

It is noted that the cumulative impact of permitted but not yet constructed wind turbines has not been factored into the LVIA by the applicant. It is the view of OCC that a revised Landscape and Visual Assessment should be provided by the applicant.

**Response**

Again, this statement is incorrect. The LVIA cumulative impact assessment considered all of the known existing, permitted and even proposed wind farms within the study area. This consisted of five existing developments (Cloncreen, Moanvane, Mount Lucas, Yellow River and Cushaling), one permitted development (Dernacart) and one in-planning wind farm (Drehid). The cumulative assessment was supported by a cumulative ZTV map as well as colour coded and labelled wireframe images within the photomontage booklet showing the proposed turbines relative to all other cumulative turbines.

If OCC are aware of a particular permitted cumulative development that was inadvertently omitted from the LVIA cumulative assessment, they should state explicitly which development that is.

## 3.10 Alternatives

**Item Raised**

The OCC submission states there is a shortfall in the details submitted within the Alternatives Chapter. Having considered this chapter it is noted that no details are provided on the location of the alternative sites which the applicant states were considered at the beginning of the project. OCC also note that no consideration was given to alternative renewable energy projects on the site such as solar.

**Response**

Chapter 04 (Alternatives) of the EIAR sets out the constraint-led site selection process used to identify suitable locations for a wind energy development. This methodology is the established industry approach for screening potential wind farm sites and systematically excluding areas that are unsuitable due to environmental, technical, planning or grid-related constraints. The EIAR explains the criteria applied during this process, including wind resource, grid proximity, land availability, environmental sensitivities and planning policy alignment. The purpose of this exercise is to identify viable areas rather than to map every discounted parcel of land, many of which are ruled out at a high level due to clear constraints. This approach is consistent with standard EIAR practice and with the requirements of the EIA Directive.

With respect to the reference to solar energy, the Proposed Development is a wind farm, and the EIAR appropriately assesses alternatives that are reasonable and relevant to the project type. National policy, including the Climate Action Plan 2025, makes clear that Ireland requires a diverse mix of renewable technologies (9GW of onshore wind, 5GW of offshore wind and 8GW of solar), therefore, onshore wind remains a central pillar of meeting Ireland's legally binding renewable electricity and climate targets. The consideration of alternatives must therefore be proportionate and grounded in what is technically and environmentally feasible for the site.

In the context of the Proposed Development, a solar development is not a realistic alternative for the Ballinla lands. Ballinla is an intensively managed dairy farming area. A solar farm would require a substantially larger land take, a greater construction footprint, and would displace the existing agricultural enterprise entirely. It would also deliver significantly lower renewable electricity output per hectare compared with a wind farm, resulting in a materially less efficient use of the land for renewable generation. For these reasons, solar is not environmentally preferable alternative for this site.

Accordingly, the EIAR concludes that a wind energy development represents the most appropriate and effective renewable technology for the site, consistent with national policy, site characteristics and the overarching objective of maximising renewable energy generation while minimising environmental impact.

## 3.11 Archaeology and Cultural Heritage

**Item Raised**

This section responds to issues raised by the DAU in relation to the archaeological and cultural heritage impact assessment carried out for the Proposed Development.

**Response**

This response has been written by the archaeologist, Dr. Maurice F Hurley, the author of EIAR Chapter 12 Heritage.

A desk-based AIA was carried out in relation to the Proposed Development which dealt with the archaeology and cultural heritage of the site and was informed by a site walkover. The AIA as presented provides adequate information to allow a decision to be made in relation to the potential effects to archaeology/cultural heritage. The matters raised are appropriately addressed through standard archaeological conditions and do not alter the conclusions of Chapter 12 of the EIAR

DAU notes that '*no advance archaeological investigation have been carried out within the Proposed Development site….other than a Walkover Survey*'. Chapter 12 of the EIAR recommends that geophysical survey and archaeological test excavation should be completed prior to the construction of the Proposed Development and that these requirements should be secured by way of an appropriate planning condition of any grant of planning permission. The DAU in their letter concur with this view and state '*The Department advised that this can be addressed by the inclusion of an appropriate condition, if the development is permitted'* and furthermore, they set out in their letter four appropriate conditions that might be included in any grant of planning permission.

The DAU has concerns in relation to '*indirect impact to the setting of National Monuments and Recorded Monuments'*. Chapter 12 of the EIAR addressed the likely indirect impacts on Recorded Monuments in the vicinity of the Proposed Development but did not specifically address National Monuments in the wider area as these Monuments are located at considerable distances from the Proposed Development. The reason they were not listed is because there will be no visual impact on the setting of the National Monuments by virtue of distance, topography and the character of these Monuments themselves (see below for details).

The National Monuments listed by the Department in their letter are screened by the topography and in two cases visibility to and from these Monuments is restricted by existing structures, trees and intervening developments; in their letter the DAU acknowledges this. Most importantly, even in the case where the turbines may be seen from one National Monument (NMN 532; RMPOF011-001), the turbines will be in the distance and

therefore will have no indirect impact on the setting of the Monument itself. In short, the turbines will not detract from the Monument by being visible in the distance.

It is essential to acknowledge that is there is no statutory or policy requirement that National Monuments be preserved free of all distant modern structures. Monuments are not necessarily impacted if a structure, be it ancient or modern, can be seen in the distance. In this regard, there is a critical distinction between visibility and vulnerability and as such negative impact only arises if a Proposed Development causes vulnerability to a Monument.

Monuments do not necessarily need to stand in isolation without visibility to some or other human construction, be it ancient or modern. Visibility in itself does not detract from the appreciation and enjoyment of a Monument. For example, a great many wind turbines are visible all along a distance ridge to the west of one of the most iconic National Monuments in Ireland, the Rock of Cashel.

Specific comment is made below on each of the National Monuments listed by the Department as being within a 10km radius of the proposal.

- **Grange Castle** (National Monument Number 629; RMP KD002-007). The castle stands within a farmyard complex, including a farmhouse and outbuilding with trees all around. The castle/tower house is of fifteenth/sixteenth century date and is of four storeys to which there is only limited access. The castle stands in a landscape of undulating topography at a distance of over 7km from the Proposed Development and as such there is no issue of indirect impact or vulnerability arising from the proposal.

- **Clonin Ring-Barrow** (National Monument Number 532; RMP OF011-001). This National Monument stands on Clonin Hill, and therefore extensive views of the surrounding countryside are obtained from this elevated site. At a height of 135m (443ft), the hill stands at a distance 3.5km from the nearest point of the Proposed Development site. Clonin Hill stands to the southeast of the Village of Rhode and therefore, the village and associated housing estate occur between the National Monument and the proposed turbines. Furthermore, an extensive coniferous woodland stands south of the Grand Canal between the proposal and Clonin Hill. While it is acknowledged the turbines may be visible in the distance on clear days from the National Monument on Clonin Hill, the immediate view from the Monument to the southeast (direction towards the turbines) is the village of Rhode. The National Monument 532 entry refers to 'impressive views' from Clonin Hill towards another barrow located on Croghan Hill at a distance of 4.5km to the west; that view is the primary view of significant historical association from Clonin Hill and that view is in the opposite direction from the proposed turbines.

- **Cannakill Deserted Settlement** (National Monument Number 617; RMP OF010-010001). This Monument stands on the southwest slopes of Croghan Hill at a distance of 9.1km to the west of the Proposed Development. The Monument has low surface expression and is flanked on the north, northwest and northeast by houses and by an extensive complex of sheds to the southwest. In their letter, the Department acknowledges that '*potential for impact [from the proposed turbines] to the setting Cannakill Deserted Settlement can be discounted*'.

The critical issue in regard to the indirect impacts to National Monuments and Recorded Monuments is that the Proposed Development maybe visible in the distance from some monuments but such visibility will not create a diminished visual amenity of landscape or its historic character and the added element of turbines in distant views does not equate to the addition of vulnerability to any Monument.

## 3.12 Water Framework Directive

**Item Raised**

The submission from OCC queries the cumulative impact assessment in the Water Framework Assessment Report. The planning authority note that the potential for cumulative effects on the hydrological and hydrogeological environment has not been completed as part of the WFD compliance assessment.

**Response**

The Water Framework Directive Report is contained in the EIAR in Appendix 08-3. It is stated in Section 7 page 33 that cumulative impacts have been assessed. The conclusion of the cumulative impact assessment is included as Section 8.4 Potential Impact on Water Action Plan (WAP) Programme of Measures of the WFD Report**.** The WAP is the Local Authority Waters Programme's statutory programme of measures for all waters within the catchment. It identifies all existing industries and activities that pose a risk to water quality and forms the baseline against which cumulative pressures are evaluated. As long as a Proposed Development does not adversely affect the implementation of the WAP measures, it cannot give rise to cumulative impacts in combination with existing pressures in the catchment. Section 8.4 clearly outlines that the Proposed Development will not have an adverse effect on the implementation of the WAP measures. This is the conclusion of the cumulative impact assessment under the WFD.

Notwithstanding the above, cumulative impact on all waters including the identified WFD waterbodies within the catchment are again assessed in a cumulative manner in the EIAR Chapter 8 Section 8.6.4 which evaluates the Proposed Development in combination with other existing and permitted projects. This assessment similarly concludes that no significant cumulative hydrological or hydrogeological effects will arise.

The Proposed Development has been fully assessed for cumulative impact on the WFD waterbodies within the catchment. Both the WFD Assessment and the EIAR confirm that the project will not contribute to deterioration of waterbody status, will not compromise the achievement of WFD objectives, and will not interact cumulatively with other pressures in the area.

# 4. Responses to Issues Raised by Members of the Public

Public consultation, visual, noise, ecology, shadow flicker, traffic, red light at night, future development and equine effects were the main concerns raised throughout the submissions from local residents, alongside some questions about the data used. The subsections which follow provide responses to the key concerns and questions raised. These deal with a broad spectrum of concerns raised (i.e. visual, shadow flicker, traffic, cultural heritage and ecological concerns).

In order to avoid repetition, we have not responded individually to each of the individual submissions but have instead grouped together similar issues and provided a response on a thematic basis.

Almost all the issues raised were fully and systematically assessed in the EIAR, in compliance with the specific required impact assessment methods specified in the various national and European EIA guidelines and other directives. While there was some significant pre-mitigation effects identified, the EIAR and CEMP includes a variety of mitigation measures that will ensure that the post-mitigation residual effects are minimised and not significant.

## 4.1 Public Consultation

**Observations:**

A number of submissions state that the authors did not receive communication from the project team or were unaware of the Proposed Development until shortly before lodging their submission. Other submissions appear to include negative statements attributed to the Community Engagement Team during interactions.

**Response:**

The applicant wishes to clarify the position based on the documented engagement undertaken. As set out in Appendix 12 Community Engagement Report, a comprehensive and multistage consultation process was carried out over a two-year period, beginning at the earliest feasibility stage in 2023. This included two full rounds of door-to-door engagement, during which 189 households were visited and 175 face to face meetings were held, alongside meetings with local community groups. In addition, 756 project booklets, newsletters and planning notification letters were delivered, and a dedicated project website and virtual consultation room were made available throughout the design process. All residents were provided with direct contact channels, including a phone number, email address and opportunities to request follow up meetings.

The applicant acknowledges that, despite these extensive efforts, some individuals may not have been available during door-to-door visits or may not have engaged with the materials provided. This is not unusual in large rural consultation areas, and the Code of Practice for Wind Energy Development in Ireland recognises that, while developers must make reasonable and repeated efforts to engage, it is not always possible to secure direct contact with every individual. The applicant is satisfied, however, that the consultation strategy implemented for the Proposed Development was robust, transparent and fully aligned with national best practice, providing multiple opportunities for residents to access information and raise concerns.

Where submissions include negative statements attributed to the Community Engagement Team, the applicant respectfully notes that these do not reflect the Applicant's documented record of engagement. The Applicant is committed to professional, respectful communication at all times, and no statements of the nature described in certain submissions were made by project representatives. The applicant remains committed to ongoing engagement with the community throughout the planning process and, if permission is granted, during construction and operation. All residents will continue to have access to the Community Liaison Officer and the established communication channels.

## 4.2 Human Health

### 4.2.1 Physiological and Psychological Effects

**Observations:**

A number of submissions have raised serious concerns regarding the potential physiological and psychological impacts of the Proposed Development on human health. In particular, reference is made to Article 3(1) of the EIA Directive, which explicitly requires that "*the EIA identifies, describes and assesses the direct and indirect significant effects on population and human health…*" and WHO Environmental Noise Guidelines for the European Region (2018), which recommends "*the integration of a Health Impact Assessment*" beyond considerations of noise and shadow flicker alone. Submissions state that *"By failing to incorporate a full HIA, the EIAR is non-compliant."*

It is stated in submissions that no baseline health assessment has been undertaken to establish existing population health conditions within the receiving environment. Concerns are raised that, in the absence of such baseline information, potential future health effects cannot be adequately identified, assessed, or monitored.

**Response:**

Human health within the EIAR has been assessed in accordance with the EPA *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (2022) and NEHS practice, using a population health approach rather than an assessment of individual medical outcomes. Likely significant effects are evaluated through a source–pathway–receptor model, with potential exposures from noise, shadow flicker, traffic, air quality and other factors assessed against recognised health-based standards.

Sensitive receptors are identified based on land use and service provision (e.g. residential areas, schools, healthcare facilities), consistent with EPA guidance. Individual health sensitivities are not assessed, as this falls outside the scope of population-based EIA.

With regard to baseline health, Section 5.3.7 of Chapter 5 of the EIAR draws on data from the 2022 Census, which provides the most up-to-date and authoritative population-level health information available at small area level. This data indicates that the majority of the population within the Study Area reports their health as "good" or "very good", with less than 4% reporting "bad" or "very bad" health. This information is presented to establish the general health profile of the receiving environment and is consistent with the population health approach required under the EIAR Guidance. A detailed breakdown is provided in Table 5-9 of the EIAR.

Potential health effects during construction and operation are considered in Sections 5.4.1.5 and 5.4.2.5, informed by the findings of individual technical assessments (i.e. noise, air, traffic etc). When assessed against applicable standards and guideline values, no likely significant adverse effects on population health are predicted.

Concerns raised regarding noise and shadow flicker are addressed in the relevant technical chapters, which demonstrate compliance with health-protective guideline limits.

In this context, the EIAR reflects the wider scientific literature, which has not established a causal link between wind farm operation and direct adverse health outcomes when operating within regulatory limits. Where symptoms such as sleep disturbance or stress are reported in some communities, these are generally understood to be non-specific stress-related responses, rather than effects arising from direct physical exposure to turbines.

Overall, the EIAR concludes that the Proposed Development is not likely to result in significant adverse effects on population or human health.

Multiple authoritative reviews have consistently found no direct causal link between wind turbines and adverse physical health outcomes. The World Health Organization (2018) concluded that evidence of direct health effects from wind turbine noise is of low to very low quality, with annoyance being the only consistently observed

response. The large-scale Health Canada study (2014) found no association between turbine noise and cardiovascular disease, diabetes, clinically assessed sleep disorders, or stress biomarkers. The Australian NHMRC (2015; updated 2022) similarly found no consistent evidence of health impacts, noting only that some individuals may experience annoyance or sleep disturbance related to visual or attitudinal factors. Public Health England/UKHSA has also confirmed that infrasound and low-frequency noise from wind farms do not occur at levels capable of causing harm. Collectively, these assessments demonstrate that while annoyance can occur, wind turbines are not associated with adverse physical health effects.

## 4.3 Noise & Vibration

### 4.3.1 Noise

A number of public submissions reference noise as a concern. A dedicated response addressing noise related matters has been prepared and is included in this document as Appendix 1.

### 4.3.2 Vibration

**Observation:**

Several local residents have expressed concerns regarding potential ground vibrations from the Proposed Development, suggesting that vibrations could elevate stress levels in breeding animals and affect human health during both construction and operation.

**Response:**

Further detail on the response to the vibration as an issue in the public submissions is offered in Appendix 1 Response to Submissions – Noise and Vibration, of this document.

The EIAR, as presented in Chapter 10 of the EIAR, demonstrates that the Proposed Development is unlikely to result in any significant vibration impacts on either animals or humans. During the construction phase, the proposed internal access tracks (Section 10.6.1.1), turbines and hardstand areas (Section 10.6.1.2), and the substation (Section 10.6.1.3) are all located at sufficient distances from sensitive receptors, meaning that vibration effects are not expected at any noise-sensitive locations. Construction works associated with the proposed grid connection, including horizontal directional drilling (Section 10.6.1.4), will be carried out at a minimum distance of 70m from the nearest receptor, which is well beyond thresholds at which vibration could affect nearby humans or animals. The construction of compounds (Section 10.6.1.5) has also been assessed and predicted vibration levels are below relevant limits and thresholds.

During the operational phase (Section 10.6.2), ongoing turbine activity is not anticipated to generate perceptible vibration at nearby sensitive locations. In terms of decommissioning, vibration impacts are expected to be comparable to, or less than, those experienced during construction, as only above-ground structures will be removed (Section 10.6.3).

While the EIAR concludes that vibration impacts are not significant, mitigation measures outlined in Section 10.7.1 will nonetheless be implemented to further minimise any potential effects. Table 10.3 of the EIAR confirms that construction-related vibration is neutral, imperceptible, and short-term, and therefore not significant.

The EIAR also confirms that no cumulative vibration effects are expected. In summary, both construction and operational vibration levels will be negligible, non-perceptible and far below any threshold associated with human or animal health impacts.

## 4.4 Landscape and Visual

**Observations:**

There are numerous third-party submissions to the application. Many of the landscape and visual related issues are common across the submissions so it is considered more useful to respond to the issues by theme or highlight distinctive submissions rather than repetitively in respect of each submission. The common themes/distinctive issues that will be addressed include:

- Turbines too tall.
- Industrialisation of the rural landscape.

**Response:**

Many of the third-party submissions take issue with the height of the proposed turbines, considering them to be too large for this rural setting and comparing them to other well-known tall features.

By way of response, it is important to note that comparison with other tall features is only relevant when the setting is similar and their form/function comparable. The proposed turbines will be visible within a broad scale rural landscape setting where they may be prominent in some instances, but due to the slender form and set back distances from roads and residences, they do not appear overbearing or spatially dominant within views.

Although 185m turbines are notably larger than the first-generation turbines that were constructed in Ireland as the wind energy industry emerged around two decades ago, the proposed turbines would be consistent with the height of turbines being proposed and consented within the last 5 years. A number of wind energy applications have also been submitted and granted in recent years with turbines at or in excess of 200m. These tend to be in broad peatland settings, but by the same rationale, the proposed 185m tall turbines do not appear over-scaled in their broad rural context. This is reflected in the findings of the LVIA chapter, which acknowledges several mid to high range effects, but none that are deemed significant. Furthermore, the LVIA includes a Route Screening Analysis (RSA) that reinforces that within relatively short distances, it is considerably more likely that the proposed turbines will be fully screened by intervening terrain and vegetation than openly visible.

By way of response, local residents will invariably and understandably extol the virtues of their local landscape, however, it is important that the LVIA takes an objective stance and also considers the receiving landscape in the national and regional context in terms of distinctiveness, quality and value. In this instance, the LVIA highlights that in accordance with the Offaly County Development Plan 2021-2027 the receiving landscape is a general rural one with a predominantly 'Low' landscape sensitivity designation. Consequently, relevant landscape policies are those that seek to support the established rural economy rather than provide a high degree of protection to the landscape. By any measure, it is predominantly a productive and modified landscape rather than a pristine and naturalistic one.

In addition to the above, the Wind Energy Strategy for County Offaly identifies that the Proposed Development falls within an area that is 'Open to Consideration' for wind energy development, this being the most favourable classification of two categories – the other being 'not deemed suitable' for wind energy development. Furthermore, there are no scenic designations (scenic routes / views) in any of the relevant County Development Plans within 5km of the site.

As a more general point, it is common for observers to claim that a proposed wind farm will contribute to the urbanisation or industrialisation of the rural landscape, however, this has connotations that do not reflect the reality of wind energy development in Ireland. It is accepted that the proposed wind turbines and ancillary structures will contribute to an increase in the scale, intensity and diversity of built development within the receiving rural landscape. However, wind turbines have become synonymous with rural, upland and cutover peatland areas in Ireland over the past 25 years – not urban or industrial areas. They are structures that require

broad, exposed and often isolated settings to function effectively and tend not to be developed near urban areas due to issues associated with population density. Describing a structure as contributing to industrialisation of a landscape invokes images of bulky monotone buildings and chimney stacks, whereas wind turbines are structures of the rural landscape with a direct connection to the elements.

## 4.5 Shadow Flicker

**Observations:**

A number of submissions from members of the public, raise concerns regarding potential shadow flicker effects arising from the Proposed Development. These submissions use identical or near-identical wording, stating that due to their close proximity to the nearest turbine, shadow flicker will cause significant disturbance to their household. They acknowledge that turbines can be curtailed to prevent such effects but express a lack of confidence that this mitigation would be reliably implemented if the development goes ahead.

Other submissions highlight health and amenity concerns associated with shadow flicker.

Across the submissions, a consistent theme emerges; concern for human health, wellbeing, residential amenity, particularly in relation to the potential for cumulative nuisance effects during certain times of day and the effectiveness of mitigation.

**Response:**

It should be noted at the outset that the Applicant has adopted a company-wide zero-shadow-flicker policy. This commitment goes beyond the requirements of the 2006 Wind Energy Development Guidelines, the Draft Revised Guidelines (2019) and the Offaly County Development Plan. Under this policy, the turbines will be programmed to shut down automatically whenever the specific conditions for shadow flicker at any dwelling are met. This ensures that no property will experience shadow flicker, regardless of the theoretical modelling results. Shadow-flicker controls are a well-established and routinely implemented mitigation measure for wind energy developments in Ireland and internationally.

Shadow flicker has been comprehensively assessed in the EIAR, with a detailed technical evaluation provided in Chapter 16 and consideration of human health effects in Chapter 5. Shadow flicker is a predictable and quantifiable phenomenon, and its potential occurrence has been objectively assessed using the Wind Farm modelling software, which accounts for turbine dimensions, locations, receptor distances, and solar paths in accordance with accepted methodologies.

The assessment initially identifies theoretical maximum shadow flicker levels under highly conservative assumptions of constant sunshine. As detailed in Section 16.6, this approach significantly overestimates realistic conditions. When actual sunshine data are applied, the analysis demonstrates that the conditions necessary for shadow flicker are likely to occur during approximately 28% of the theoretical maximum hours. On this basis, realistic shadow flicker levels were derived and are presented in Table 16-3 of the EIAR. The results confirm that potential shadow flicker is below the 30 hours per annum threshold at all but one residential receptor and below the 30-minute per day threshold at all residential locations. Notwithstanding these conservative findings, the applicant has committed to a zero-shadow flicker approach, consistent with the 2019 Draft Revised Wind Energy Development Guidelines. As outlined in Section 16.7, all turbines will be equipped with Shadow Flicker Control Modules, which automatically curtail turbine operation when predefined limits are approached, thereby ensuring that shadow flicker does not occur at residential properties.

Potential health effects associated with shadow flicker have also been fully considered. The assessment is informed by the HSE Position Paper (2017), which concludes that there is no evidence of a causal relationship between shadow flicker from wind farms and adverse health effects, and that the risk to individuals with photosensitive epilepsy is extremely low. The EIAR further confirms that no dwellings are located within 500m of

any proposed turbine and that all dwellings within the defined study area were assessed in accordance with best practice. Refer to Section 5.4.2.5 of Chapter 5 of the EIAR. It is noted from the HSE submission that 'The HSE 'Position paper on wind turbines and public health' has been withdrawn by the HSE and is under review. It is noted that the UK Department of Energy and Climate Change commissioned a comprehensive evidence review on shadow flicker (Update of UK Shadow Flicker Evidence Base, 2011), which found no scientific evidence linking shadow flicker to adverse health effects and confirmed that modern modelling and mitigation systems are effective.

In summary, the concerns raised in submissions are fully addressed by the Applicant's operational commitment. The zero-shadow-flicker strategy is not discretionary or dependent on manual intervention. It is a programmed, automated control system that ensures turbines shut down whenever the conditions for shadow flicker at any dwelling are met. This guarantees that residents will not experience shadow flicker and that the Proposed Development will exceed all national and local policy requirements for the protection of residential amenity.

## 4.6 Red Lights at Night

**Observation:**

A number of submissions noted that "*The red lights at nighttime will be a significant issue for the dwelling houses on our farm and again the cumulative effect of this together with existing red lights in the vicinity is something that we feel is very unfair for us to have to tolerate forever and extending into the lifetimes of our children*".

**Response:**

The requirement for red obstacle lights on certain turbines is mandated by the Irish Aviation Authority (IAA) and is not a discretionary element of the project. These lights are a statutory safety measure designed to protect aircraft operating at night and in low-visibility conditions. As such, their inclusion is a legal requirement rather than a design choice of the Applicant. Where required by the Irish Aviation Authority, turbines will be fitted with medium-intensity fixed red obstacle lights (2000 candelas), equipped with baffles to direct light skyward and reduce ground-level visibility. The lighting proposed represents the minimum legally required for aviation safety, has been designed to be as unobtrusive as possible.

The Proposed Development will add to the existing 7 wind farms already permitted within 25km of the site. The Proposed Development is located within 3km to 4km of the Cloncreen, Cushaling and Mount Lucas wind farms to the south and 7km from the yellow River wind farm to the north. There will therefore be a cumulative visual effect with respect to red lights at night. The red lights from the Proposed Development will add to the existing red lights on the existing or permitted turbines within the region. This represents an intensification of an existing effect rather than a new visual effect. The significance of the effect on individual residents will depend on their location within the landscape relative to the Proposed Development and other wind farms, as well as all other night lights in the area, and the orientation of their windows. It will also depend on the existence of intervening structures and vegetation which may screen the view of these red lights. The town of Edenderry is located 2km east of the Proposed Development and there are numerous villages and residential dwellings and agricultural/business structures located along the roads to the north, east, south and west of the proposed wind farm. Consequently, this area is not a remote sparsely populated rural area or a dark sky reserve where the introduction of the red lights from a wind farm would significantly change the night-time character of the locality. In this case the night views of the locality are peppered with artificial lights in all directions, including aviation lighting from existing wind farms. While the Proposed Development will add to the red lights, this represents an addition to the existing nighttime artificial light character of the area, rather than a significant change or escalation of the cumulative effect. The cumulative visual effects of the Proposed Development have been assessed in the EIAR, along with the potential effect the red lights may have on bats and birds.

## 4.7 Biodiversity

**Observation:**

A number of submissions reference the potential impact of the Proposed Development on the existing ecology and biodiversity of the area. Key issues include the presence of bat roosts on private property that have not been inspected and the disturbance of an ancient badger sett, with fears of displacement and associated tuberculosis (TB) risks. Additional concerns relate to vegetation loss and the adequacy of proposed habitat reinstatement and creation measures.

**Response:**

The concerns raised are fully addressed within the EIAR. Regarding bats, all accessible structures and trees within the development footprint, grid route and delivery route were surveyed by licensed ecologists (EIAR Chapter 6, Sections 6.3.7.2 and Appendix 6-2). Where roosts on private property could not be inspected, a precautionary approach was applied, assuming potential roost suitability and incorporating buffers, turbine-free zones and operational curtailment measures (EIAR Section 6.4.1.3 and 6.5.2.2). With these measures in place, no significant effects on bat populations are predicted.

Badger surveys undertaken for the EIAR confirmed that no badger setts occur within the Proposed Development site. The nearest recorded sett is located over 150m from the closest element of the Proposed Development (EIAR Chapter 6, Section 6.3.7.1.2). As such, there is no potential for disturbance, displacement, or interaction with construction activities, and no pathway for any associated risks, including concerns relating to TB transmission. The EIAR concludes that badgers will not be affected by the development, and no mitigation is required beyond standard good-practice measures for working in rural environments (EIAR Section 6.4.1.2).

Vegetation loss has been fully quantified (EIAR Table 6-14 and Section 6.4.1.1), and the reinstatement and habitat-creation strategy are set out in Sections 6.5.1 and 6.5.2, including native woodland planting, hedgerow enhancement, wetland restoration and biodiversity creation parcels. The net habitat balance, including gains, is summarised in Table 6-25. These measures ensure that all affected habitats are reinstated or replaced in line with best practice and deliver long-term ecological enhancement.

## 4.8 Ornithology

**Observations:**

Submissions notes that the gardens, woodland, mature trees, and farmland on their agricultural and equine properties are home to a range of wildlife including long-eared owl and kestrel, with established woodland, mature trees, and traditional field boundaries providing vital foraging, nesting, and shelter habitats. They argue that any large-scale disturbance, such as that associated with the construction and operation of the Proposed Development, poses a risk of habitat disruption, displacement, and long-term behavioural change with these protected species. They also highlight concerns regarding potential impacts on bird species associated with migratory corridors along the River Brosna, specifically referencing Whooper Swan flight paths and what they consider to be unresolved collision risk.

**Response:**

The EIAR ornithology chapter undertook a robust and complete assessment of potential effects on avian species occurring or likely to occur in and around the Proposed Development. As such, these concerns have been addressed within the ornithological assessment. Long-eared owl, a green-listed species, was not detected during surveys at the Proposed Development, but was noted as being present within the surrounding hinterland

(see EIAR Appendix 7.2: Baseline Ornithology Report Year 2). No live sightings, signs of activity, or potential nesting sites for long-eared owl (green-listed) were recorded within or near the Proposed Development site.

Kestrel was observed frequently during surveys and is assessed in detail within the chapter. Long-term Slight to Moderate residual disturbance/displacement and barrier effects were identified for kestrel.

In relation to Whooper Swans and other species associated with the River Brosna corridor, extensive vantage-point surveys and flight-activity monitoring were undertaken, and a Collision Risk Model (CRM) was prepared in accordance with current guidance (EIAR Chapter 7, Sections 7.3–7.4 and 7.4.2). The assessment concludes that predicted collision risk is low and not significant, with no key migratory corridors intersecting the turbine layout. Mitigation by design, including avoidance of sensitive flightlines, is detailed in Chapter 7, Section 7.5.

**Observations:**

One submission queried the absence of an assessment of the potential barrier to migrating Greenland White-fronted Geese which could potentially arise from the Proposed Development in combination with other wind farms in the area. The presence of sites in the vicinity of Mullingar used by Greenland White-fronted Geese was also noted in the submission. The submission also references a 600m exclusion zone for geese to avoid disturbance or displacement.

**Response:**

Vantage point (VP) surveys undertaken in accordance with best practice guidance (SNH, 2017) across four winter seasons (2021-22, 2022-23, 2023-24 and 2024-25) and two summer seasons (2021 and 2022), inclusive of dawn/dusk surveys, did not record any observations of Greenland White-fronted Goose traversing the flight activity study area (500m turbine buffer) or surrounding lands.

Examination of publicly available data on the migration routes of Greenland White-fronted Goose (Fox et al, 2003; www.migrationatlas.org) indicates that this species migrates through the wider region in which the Proposed Development is located; as such, some, but not all migration flights may traverse the wider area in which the proposed Ballinla wind farm is located.

The majority of routes used by geese on return migration indicated in the study presented within the submission (Fox et al, 2003) fan out across a broad north-northwest axis, traversing a number of areas ranging from west of Tullamore to East of Edenderry as they pass through the midlands. One goose tracked in this study headed almost due north and flew over Maynooth c. 38 km west-northwest of the Proposed Development. The majority of these geese flew to the south-east of the Proposed Development, while one flew through the locality in which the Proposed Development is located. It is noted that this study used satellite data based on periodic location uploads during the migration flights, and as such, the migration routes depicted in this study are simplified, rather than being representative of the exact flight path taken by the birds. In addition, the small sample size of this study (12 geese tracked during a single outward migration period) means it cannot be used to infer the intensity of use for specific routes.

Point to point mapping of migratory journeys based on recovery of ringed birds provides more reliable information on geographical trends based on a richer dataset built up over years of ringing studies. Page 44 of the Observers' submission references www.migrationatlas.org showing the journeys of Greenland White-fronted Goose moving between south-western Iceland and Wexford Slobs (the primary Irish wintering site). The movements are densely clustered to form a thick line linking Sligo town and Wexford Slobs. Closer examination of this dataset from www.migrationatlas.org indicates the approximate location of the most heavily used migration corridor is located further west of the proposed development, running between Tullamore and Dangean (c. 12.3 km west of the proposed development and c. 3.5 km west of Mountlucas wind farm) with more sparsely distributed flight routes extending north-west of Dangean as far as Ballycon (c.2.5 km south-west of the

proposed development). Outside of this concentration along the primary flight corridor, a low number of migration routes of individual ringed birds occur only sporadically further north-east.

As such, it is clear that the main migration route of Greenland White-fronted Goose is located further west/south-west of the proposed development.

The submission includes a reference to the national distribution of Greenland White-fronted Geese, highlighting the concentration of wintering birds at Wexford Slobs and the presence of smaller populations at other wintering sites, including lakes and bogs in County Westmeath.

As outlined in Chapter 7 of the EIAR, the cumulative assessment includes consideration of other wind farm developments in the region, including Cloncreen and Moanvane where Greenland White-fronted Geese were noted as having occurred (both included Greenland White-fronted Goose within their assessments due to individual, isolated records only).

The submission claims that the Proposed Development will create a barrier effect for the Greenland White fronted Goose. It states that 'the existing Windfarms at Mount Lucas, Yellow River & Ballinla create a 60km barrier' across the migration route between Iceland and the Wexford Slobs.

In order to examine the potential barrier effect, the other existing wind farms in the locality, namely Cloncreen and Cushaling must also be considered along with the aforementioned Mount Lucas and Yellow River wind farms.

When examined carefully, it can be seen that the linear 'barrier' formed by Mountlucas, Cloncreen and Cushaling wind farms extends for c. 17.7 km from east to west; however, it includes a 4.1 km gap between Mountlucas and Cloncreen, and a 1.9 km gap between Cloncreen and Cushaling in addition to the gaps between individual turbines (average gap between turbines at Mountlucas is c. 500m; average gap between turbines at Cloncreen is c. 600m; gaps between turbines at Cushaling range from 400m to 1 km).

Since Yellow River wind farm is located to the north of these wind farms, it does not form a linear barrier in conjunction with them. The turbine clusters at Yellow River are dispersed, with large gaps separating them (1 km, 2.7 km, 1.7 km and 1.2 km) thereby reducing potential for barrier effects. When analysed in detail, it is evident there are sufficient gaps between these wind farms to allow migration along a north-west/south-east axis, with only minor course corrections, if any were required.

When considering potential barrier effects, it is noted that the main migratory corridor for Greenland White fronted Geese is located significantly to the west of the site and this along with the fact that no Geese were identified following on site SNH (2017) surveys determines that the impact is negligible, Cumulatively with other wind farms in the area, and due to it's location north-west of Cloncreen, the proposed Ballinla wind farm would not laterally extend the footprint of the existing obstacles potentially formed by Mountlucas, Cloncreen, Cushaling and Yellow River wind farms as described above across any potential north-west/south-east migration flights traversing the area.


**Figure 1:** ***Turbine footprints of Proposed Development and Surrounding Wind Farms***

Chapter 7 of the EIAR does not identify potential for cumulative barrier effects. This is in accordance with the fact that the layout of the existing wind farms in the area does not form a continuous or impermeable barrier across any known migration corridor. The wind farms are dispersed, with substantial gaps between turbine clusters and between individual turbines, allowing for broad flight corridors and reducing the likelihood of barrier effects.

The submission's reference to wintering sites in County Westmeath does not alter this conclusion. These sites lie to the northwest of the Proposed Development and as such the proposed development would not be traversed by geese migrating between the Westmeath wintering sites and Iceland/Greenland. In the event that birds flying between Iceland and Wexford use these sites as occasional stopovers, the same spatial analysis applies: the configuration of wind farms in the area does not present a significant obstacle to movement.

In conclusion, the submission attempts to use an overly simplified depiction of migration patterns to present a narrative indicating that existing and proposed wind energy developments in the area pose a significant barrier to the migratory movements of this species. When analysis is undertaken in sufficient depth, it is clear the existing and proposed wind energy developments in the area do not pose a significant barrier to migration of Greenland White-fronted Geese.

As set out in EIAR Chapter 7, Greenland White-fronted Geese were not recorded during baseline surveys and the habitats within the wind farm are not optimal for foraging or roosting. On this basis, the species was not identified as a receptor requiring detailed assessment, and no potential barrier effect was identified.

**Observations:**

The submission presents Table 7-25 from the EIAR Ornithology chapter, which assesses collision risk, and then makes the following comment: '*Using Bird Collision data from Percival 2003 is not acceptable. Wind turbines have*

*increased in size since that period & up-to-date models are available such as - Scottish Nature: Guidance on using an updated collision risk model to assess bird collision risk at onshore wind farms 2024'*

**Response:**

This comment is erroneous. Percival (2003) is referenced within the ornithological assessment in terms of the framework for ornithological impact assessment it provides, as per standard practice. The 'Percival significance' is then translated into EPA (2022) significance to align with the EIA methodology detailed in '*Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*' (EPA, 2022). There is no suggestion within the ornithological assessment that Percival (2003) has been used to calculate the actual collision risk for target species.

Collision risk was in fact calculated using the current NatureScot model '*Using a collision risk model to assess bird collision risks for onshore wind farms*' (Band/NatureScot, 2024) which the submission appears to have incorrectly referenced.

**Observations:**

The submission makes the following assertion '*Birds Survey data of bird species and an analysis in relation of the results is set out in the EIAR. The potential effects of the Proposed Development are then described in terms of the construction, operation and decommissioning phases of the development. It is acknowledged that the Proposed Wind Farm will likely give rise to a measurable reduction in the distribution and abundance of birds locally within the site*.'

**Response:**

A decline in abundance is not explicitly stated for any species other than snipe, and this refers to a decline in abundance within 500m of turbines, rather than an absolute decline. Certain species such as Snipe, Woodcock & Merlin may be displaced, while displacement of foraging Kestrel may occur due to barrier effect. Detailed assessment of all key ornithological receptors was undertaken in the EIAR ornithology chapter.

It is noted that while distribution of certain species may be altered, any associated effects are not significant, and no significant residual effects remain following mitigation.

**Observations:**

One submission asserts that the EIAR fails to adequately assess the potential for significant negative effects on protected fauna (including swans protected under wildlife act 1976 and birds of prey protected under EU birds directive).

**Response:**

Other than making a broad statement that they deem the assessment inadequate, this submission does not identify any tangible issues relating to the ornithological assessment. A detailed, complete and robust ornithological assessment was undertaken as detailed in the EIAR and supporting documents submitted with the planning application. The ornithological assessment was completed in line with all relevant standards, guidelines and best practice.

**Observations:**

One submission asserts that the ornithological assessment fails to demonstrate conclusively that collision mortality rates for protected species will remain within acceptable limits.

**Response:**

The ornithological assessment carried out surveys in accordance with the relevant SNH guidance '*Recommended bird survey methods to inform impact assessment of onshore wind farms*' (SNH, 2017). Utilising the results of these

surveys, collision risk modelling (CRM) was undertaken following the guidance document '*Using a collision risk model to assess bird collision risks for onshore wind farms*' (Band/NatureScot, 2024).

Based on the results of the CRM, the magnitude and duration of effects arising from predicted collision rates was assessed based on the conservation status and population data for individual species. The impact assessment utilised the methodology for ornithological assessment outlined in Percival (2003) and translated this into the overarching framework of the assessment used throughout the EIAR (EPA, 2022).

There are no defined 'acceptable limits' for avian collision mortality rates; however, the CRM provides a predicted number of collisions per year for each species, which is assessed against the population size and background mortality rate for each species. This assessment indicates the significance of potential effects, following EIA methodology (EPA, 2022). Following this assessment, no significant effects in terms of collision risk were identified at either national or local level.

**Observations:**

The submission notes the following: '*From an environmental and ecological perspective, we are deeply concerned about the potential negative impacts of the Proposed Development on local wildlife. Species such as kestrels, swans, pheasants, barn owls, ….. rely on this landscape for their habitat and survival. The loss or disruption of these species would represent not only an environmental setback but also a profound diminishment of the natural character and beauty of this rural area*'.

**Response:**

The EIAR ornithology chapter undertook a robust and complete assessment of potential effects on avian species occurring or likely to occur in and around the proposed wind farm site. As such, these concerns have been addressed within the ornithological assessment. Kestrel and whooper swans were observed frequently during surveys and are assessed in detail within the chapter. Barn owl was noted within the desktop assessment as being present within the wider region. No evidence of barn owl activity or occupation of the Proposed Development was recorded during surveys.

**Observations:**

The observer argues that installation of wind turbines near his farm is incompatible with nature-focused actions being taken on agricultural businesses, in particular an area suitable for breeding waders where wild bird cover is sown 400m from T2.

**Response:**

Based on the location details and farmland description provided, the lands referenced appear to lie north of the Grand Canal and are situated at a distance of over 500m from T2, rather than the 400m stated in the submission. At this separation, there is no basis to suggest that nature-focused farm management would be incompatible with the proposed wind energy development. No direct effects on the farmland in question will arise, and indirect hydrological effects are also not anticipated due to the absence of connecting watercourses and the presence of the canal as a physical barrier. Concerns regarding potential disturbance to breeding waders are similarly unlikely to materialise, as a buffer of more than 500m exceeds the distances at which disturbance to sensitive species such as Snipe has been shown to occur (Pearce-Higgins et al., 2009).

**Observations:**

The submission argues that the assessment was inadequate based on sightlines being obstructed and that survey locations were selected based on desktop assessment only.

**Response:**

Vantage point (VP) locations are selected through an iterative process, starting with desktop based geospatial assessment to determine the viewshed coverage of potential VP locations based on topography. This is followed by ground-truthing to confirm the suitability of each VP, and if necessary, relocation of VPs can be proposed based on field observations, subject to confirmation through geospatial assessment that they fulfil the requirements defined in SNH (2017).

The VPs for the Proposed Development were selected through this process and were determined to provide adequate sightlines to provide coverage of the associated viewsheds in accordance with SNH (2017).

**Observations:**

Submissions raise concerns around potential for increased bird fatalities to occur due to operation of the Proposed Development and potential for increased bird fatalities to occur due to operation of the proposed wind farm and question the absence of additional mitigation such as altering the colour of turbine blades and systems to automatically curtail turbine operation based on detection of approaching birds.

**Response:**

As noted above in previous submission responses, collision risk modelling (CRM) was undertaken following the guidance document '*Using a collision risk model to assess bird collision risks for onshore wind farms*' (Band/NatureScot, 2024), which in turn informed the impact assessment for each species. Following this assessment, no significant effects in terms of collision risk were identified at either national or local level.

Operational phase mitigation including systematic fatality monitoring, flight activity surveys, and species-specific monitoring (e.g. for whooper swan, woodcock, and breeding waders) is specified within the EIAR ornithology chapter. The results of this monitoring will inform whether adaptive mitigation, such as curtailment, is required. In particular, curtailment measures have been proposed as a contingency for nocturnal migratory species. If post-construction monitoring detects collision fatalities or increased migratory activity, a night-time (dusk to dawn) curtailment regime will be implemented during peak migration periods (15 September–15 December and 21 February–15 April.

## 4.9 Geology and Hydrogeology

**Observations:**

A number of submissions raise concerns regarding the geological and hydrogeological conditions at the site. The issues raised include assertions that the development area is underlain by peat, that the EIAR did not adequately assess potential impacts on groundwater, private wells or aquifer recharge, and that the site may be affected by an unmapped geological fault. Some submissions also suggest that construction activities could alter groundwater flows, increase flood risk on adjacent lands, or cause contamination of groundwater through sediment, hydrocarbons or turbine-related materials. Concerns were also expressed about the adequacy of site investigations, the potential for landslides or subsidence, and the absence of a hydrogeological assessment for private wells in the wider area. Others question whether the EIAR sufficiently assessed quaternary sediments, soil types, peat stability, and the potential for cumulative hydrological effects.

**Response:**

The EIAR provides a comprehensive assessment of the geological and hydrogeological environment, based on detailed desk study, multiple site walkovers, GSI datasets, Teagasc soils mapping, quaternary sediment mapping, and targeted geotechnical investigations. Chapter 9 (Land and Soils) and Chapter 8 (Water) together address all relevant aspects of geology, soils, groundwater, hydrology and slope stability.

The EIAR confirms that the site is predominantly underlain by limestone bedrock, specifically the Edenderry Oolite Member, with areas of Waulsortian Limestone and Lucan Formation along the grid route. The quaternary

sediments comprise a mix of cut-over raised peat and limestone-derived till, with peat occurring only in shallow, localised pockets. No deep peat deposits or peatland habitats are present. The site is generally flat, with no evidence of historical landslides or instability. A full Peat Stability Risk Assessment is included in Appendix 9, which concludes that the risk of peat failure is negligible.

Regarding the "fault line" referenced in one submission, the EIAR confirms that there are no mapped geological faults within the Proposed Development site. The feature referred to in the submission is a section line on the GSI mapping, not a fault. This is a common misinterpretation of GSI symbology. The nearest mapped faults lie outside the development area and have no hydrological or geotechnical relevance to the proposed works.

The hydrogeological assessment in Chapter 8 demonstrates that the site is underlain by a locally important limestone aquifer, with groundwater flows typical of the region. The development footprint avoids karst features, swallow holes, springs or areas of high groundwater vulnerability. The EIAR confirms that no private wells are located within the zone of influence of the proposed works, and that the separation distances, soil cover and construction methodologies ensure that no impact on groundwater abstractions will occur.

Potential construction-phase risks, such as sediment mobilisation, accidental spills, or concrete contamination, are fully addressed through the EIAR and CEMP, which includes strict controls on fuel storage, refuelling, silt management, drainage design and pollution prevention. These measures follow EPA, IFI and Coillte guidelines and are standard for wind farm developments. With these measures in place, the EIAR concludes that the risk of groundwater contamination is imperceptible.

Concerns regarding increased flooding or altered groundwater flows are not supported by the baseline data. The detailed assessment contained in Chapter 8 Hydrology and Hydrogeology, supported by the Flood Risk Assessment (Appendix 8-2). The FRA and EIAR demonstrate that the Proposed Development is at low risk of flooding, will not exacerbate flood risk elsewhere, and incorporates standard best-practice drainage and water-protection measures to ensure compliance with the Planning System and Flood Risk Management Guidelines.

In summary, the EIAR provides a robust and evidence-based assessment of geology and hydrogeology. The proposed mitigation measures ensure that the development will not give rise to significant effects on soils, geology or hydrogeology.

## 4.10 Heritage

**Observations:**

The submission raises a number of heritage related concerns focused primarily on the perceived omission of the potential impact of the Proposed Development on Ballymoran House. It also raised concerns regarding the omission of Ballymoran House from the Inspector's Report (ABP-318203-23) prepared during the SID pre-application consultation stage.

**Response:**

The EIAR submitted with the application includes a full Cultural Heritage assessment in accordance with the EPA (2022) EIAR Guidelines, the National Monuments Acts, and the Architectural Heritage Protection Guidelines for Planning Authorities. Within this assessment, the protected structure referred to in the submission—Ballymoran House (RPS/NIAH Reg. No. 14911022)—is included and assessed, although it is mis-titled in one instance as "Ballmoran House." The correct asset reference number, location, and protection status are all recorded in Table 12.2 of the EIAR, ensuring that the structure was properly identified and evaluated.

The EIAR concludes that the Proposed Development will not give rise to any direct impacts on Ballymoran House, as no works occur within its curtilage or attendant grounds. The operational-phase setting effects have also been

assessed, with the separation distance of approximately 850m ensuring that the character, special interest, and integrity of the protected structure are preserved. No significant adverse effects on the architectural, social, or technical values for which the structure is protected were identified.

The referenced inspectors report was prepared as part of the SID pre-application consultation process, the sole function of which is to determine whether the Proposed Development qualifies as strategic infrastructure and whether an EIAR is required. It is not a full environmental assessment, nor is it intended to provide a comprehensive inventory of all cultural heritage assets in the study area. The absence of a reference to Ballymoran House in that pre-application report therefore has no bearing on the adequacy or completeness of the cultural heritage assessment undertaken for the planning application.

## 4.11 Traffic & Transport

**Observation**

The submissions raise concerns about the suitability and safety of the local road network for accommodating construction traffic associated with the Proposed Development. Residents express apprehension that the narrow rural roads, already experienced as vulnerable during previous wind farm construction in the wider area, are not capable of safely handling increased volumes of heavy vehicles. They highlight that these roads are regularly used for walking, running and cycling, and fear that the introduction of large construction traffic could significantly reduce safety for families, children and other vulnerable road users. In addition, one submission includes a Road Safety Auditor's report asserting that several key assessments, such as a road safety audit, structural assessment of haul routes and a Traffic Impact Assessment, have not been undertaken. The report also questions aspects of the grid connection mapping and landownership information and notes that passing bays along local roads have not been identified.

**Response:**

A comprehensive Traffic Impact Assessment (TIA), including a full road traffic survey, is presented in EIAR Chapter 15: Material Assets – Traffic and Transport. This chapter assesses the suitability of the local road network, including the widths of the roads to be used for haul routes. This chapter includes full baseline traffic surveys, haul route assessment, capacity analysis, construction traffic modelling, and a detailed Traffic Management Plan (Appendix 15).

Section 15.7.1 acknowledges that passing bays will be required on certain local roads and confirms that their design and location will be agreed with the OCC Roads Department. Any required works will be carried out under road opening licences and in accordance with standard road improvement practices.

The assessment concludes that traffic impacts will range from slight to moderate during construction, imperceptible during operation, and slight during decommissioning, with all construction-related effects being short-term in duration. Although no significant effects have been identified, the CEMP sets out a range of measures that will be implemented during construction to further minimise impacts on road users.

Sightline drawings have been provided in the planning application (drawing ref. 23882-MWP-00-00-DR-C-5032) to ensure that the proposed two entrances are fully within the guidelines for new entrances as per planning authority guidelines.

With respect to road safety audits and structural assessments, these are not required at EIAR stage. As is standard for wind farm and other major infrastructure projects, such assessments are undertaken post-consent, once detailed design is available and in consultation with the Roads Authority.

All relevant landowner consents required for this planning application have been submitted as part of this application.

## 4.12 Other Concerns

### 4.12.1 Equine Effects

**Observations:**

The following concerns were raised by the Association of Irish Racecourses in Kildare. "*Any development that has the potential to affect animal welfare, breeding outcomes, or the environmental stability of equine lands must therefore be approached with utmost caution. … The proposed Ballinla Wind Farm lies in an area associated with pedigree and performance breeding, where horses of significant value are reared and trained. Internationally, concerns have been raised about the potential impacts of wind turbine noise, low-frequency vibration, and flicker on animal behaviour and stress levels. … Given Ireland's position as a world leader in thoroughbred production, such risks merit strong consideration to refusal of this proposed developmen*t."

Three submissions to the Proposed Development were made by the neighbouring farms and stud. The submissions express concerns relating to their proximity to the Proposed Development. They highlight the sensitivity of high-value horses to noise and disturbance, the importance of the wider equine industry, and the potential for operational turbines to affect animal health and behaviour. Concerns are also raised about the welfare of pedigree cattle and bulls that graze seasonally on adjoining lands, with fears that visual movement and shadow flicker could negatively impact livestock. In addition, the potential for construction and grid-route traffic to pose safety risks for animals, workers and visitors is emphasised, alongside the perceived risk to the viability of established agricultural and stud businesses located immediately adjacent to the site.

**Response:**

Wind farms have been developed on agricultural land worldwide for several decades, and the available evidence shows that they do not displace livestock farming or adversely affect the welfare or productivity of domesticated animals.

A comprehensive international review commissioned by the Swedish Environmental Protection Agency in 2012 (The Impacts of Wind Power on Terrestrial Mammals, Report 6510) examined research on the effects of wind turbines on both wildlife and livestock. The review found that the theory that the noise and movement of turbines in operation would annoy or stress wildlife and livestock was not supported by the research that was available. These studies showed there was a lack of such effects or that animals quickly habituated to the disturbance. Consequently, the impact was limited. With regard to noise, farm animals are likely to be more disturbed by road traffic noises which are typically louder than the noise from wind turbines.

One of the studies (Seddig 2004) of effects on horses discussed in the 2012 report above found that only 11 of the 424 horses living on farms surveyed, were reported by the owners to have displayed concern or avoidance of shadows on stable windows or on the ground along a trail. However, even these horses habituated quickly. The same review also highlighted that stress responses in domestic animals generally occur at noise levels between 60–75 dBA. By comparison, noise levels measured directly beneath a turbine were between 50–60 dBA, below the threshold associated with stress, and these sounds are often masked by natural environmental noise such as wind in vegetation or passing traffic. Horses are known to react to sudden, unpredictable noises; however, turbine noise is a consistent and turbine start-up is gradual rather than abrupt, supporting habituation rather than startle responses. The noise from turbines may also be masked by other sounds in the environment like the sound of wind in vegetation and traffic noise.

The British Horse Society (BHS) originally published guidance on wind turbines and equine safety in 2012 and updated this guidance in May 2025. The most recent BHS document (Wind Turbines – May 2025) reaffirms that while some horses may show initial alertness or curiosity when first exposed to turbines, there is no evidence of long-term behavioural or welfare impacts, and most horses habituate quickly when turbines form part of a

consistent and predictable environment. The updated BHS guidance also notes that there is no scientific evidence that turbine-generated infrasound affects the vestibular or neurological systems of horses, aligning with international reviews. These reviews consistently conclude that infrasound levels at typical separation distances are far below thresholds known to cause physiological disturbance in horses or other livestock.

The nearest turbines associated with the Proposed Development and neighbouring equine farm are north of the stud which will remove the impact of shadow flicker on the farm from the nearest turbines.

It should be noted that the Proposed Development is on an intensive dairy farm, and the existing dairy herd will remain in the fields immediately adjacent to the turbines. Outside of a loss of some grazing grass areas, no reduction in dairy production is expected to occur on the farm as a result of any direct effect from the turbines.

### 4.12.2 Wake Effect

**Observations:**

A number of submissions raise concerns regarding the potential wake effects associated with the Proposed Development, focusing in particular on claims of localised temperature changes, altered air movement, and associated implications for human, animal wellbeing and protected structures. Submissions from agricultural enterprises raise concerns about changes in airflow, turbulence, noise, and visual disturbance, suggesting these could affect livestock behaviour, breeding reliability, and long-established bloodlines.

**Response:**

The wind turbine wake effect refers to the zone of disturbed airflow that forms downwind of a turbine as the blades extract kinetic energy from the wind. This process reduces wind speed and increases turbulence immediately behind the rotor, creating a wake characterised by slower, more turbulent air. These effects dissipate rapidly with distance and are well understood in aerodynamic and engineering literature.

In terms of vegetation and grass growth, wake effects can cause subtle microclimatic changes by slightly modifying wind speed, temperature, and humidity. Peer-reviewed studies show that these temperature changes are extremely small, typically fractions of a degree and generally less than 1°C, and occur only under specific atmospheric conditions. Research by Wu & Archer (2023, Wind Energy) and Placidi et al. (2023, Journal of Fluid Mechanics) confirms that wake-induced thermal effects are minor and highly localised. Studies such as Hubert et al. (2025, Wind Energy Science) and Astolfi et al. (2023, Energies) further demonstrate that wake effects are primarily an engineering consideration affecting turbine performance, not an environmental receptor impact.

In Offaly's context, characterised by peatlands, improved grassland, hedgerows and forestry, these microclimatic variations are unlikely to cause any significant or visible impacts. Ireland's temperate, moisture-rich climate, consistent rainfall, and naturally sheltered field boundaries provide strong buffering capacity, meaning vegetation stress or changes in grass growth are not expected. Hedgerows and trees, already adapted to natural wind exposure, will not be adversely affected by wake-induced turbulence.

With respect to horses and livestock, there is no scientific evidence that wake turbulence or wake-related temperature changes affect animal behaviour, welfare, or physiology. Wake effects do not generate sudden or unpredictable stimuli, the type known to startle horses, and the airflow changes involved are gentle, gradual, and dissipate within short distances. Accordingly, no mechanism exists by which wake effects could influence equine health, foaling outcomes or the behaviour of high-value bloodstock.

Regarding wildlife and fauna, wake effects do not directly harm birds, mammals, or protected species. In Offaly, where agricultural land and bog restoration zones support common bird and mammal communities, any indirect effects, such as minor shifts in vegetation structure, would be negligible and fall well within natural environmental

variability. Wake turbulence does not alter habitat quality, food availability, or shelter conditions in a way that would affect wildlife populations.

Wake effects also pose no direct health risk to people. While wake turbulence can slightly influence wind comfort or noise propagation very close to a turbine, these effects are generally imperceptible beyond a few hundred metres and have no recognised pathway to human health impacts. Similarly, wake-related airflow changes do not affect the structural stability of buildings or protected structures; the forces involved are far too small to influence built fabric, foundations, or materials.

Under the EU EIA Directive, only significant environmental effects on receptors such as noise, ecology, hydrology, and landscape must be assessed. Wake-related temperature or microclimate changes are not recognised as an environmental receptor impact in Irish or EU guidance, and therefore the EIAR correctly excluded them. The scientific consensus is clear: wake effects are an engineering phenomenon relevant to turbine spacing and energy yield, not a source of environmental, agricultural, equine, or human-health impact.

### 4.12.3 Future Development

**Observations:**

A number of submissions raised concerns regarding the potential impacts of the proposed wind farm on property values and future development opportunities. The majority of submissions focused on future development uncertainty, including potential constraints on obtaining planning permission for new dwellings or a lack of desire to develop properties in proximity to the wind farm.

**Response:**

**Preclusion of Future Development**

We wish to clarify that the development of renewable energy infrastructure, including wind farms, does not preclude or sterilise the potential for future residential development in County Offaly. This position is articulated in the Offaly County Development Plan 2021–2027, which balances the delivery of national climate targets with the protection of rural settlement patterns and community continuity.

Under Section 2.4 of the Development Plan, Offaly County Council reaffirms its commitment to supporting one-off rural housing, particularly for those with a local rural housing need. The Plan outlines specific policies to ensure that families with ties to the area can continue to build homes within their communities.

In relation to wind farms, the County Wind Energy Strategy, which forms part of the Development Plan, explicitly states that wind energy development must be compatible with other land uses. It does not prohibit residential development in proximity to turbines, provided that standard planning criteria, such as visual impact, noise thresholds, and separation distances, are met.

Furthermore, the presence of a wind farm does not inherently diminish the desirability of an area for living. Many wind farms across Ireland coexist with vibrant rural communities. The planning process includes robust public consultation and environmental assessment to ensure that developments are appropriately sited and do not compromise residential amenity.

**Property Devaluation**

Section 5.4.1.1 of Chapter 5 of the EIAR addressed the issue of property devaluation associated with wind energy development. That section reviews the available evidence base and concludes that there is no substantiated basis for widespread or systematic property value impacts arising from wind farm developments.

Accordingly, and consistent with the assessment presented in Section 5.4.1.1, it is not anticipated that the Proposed Development will result in any material or widespread impact on local property values. As set out

elsewhere in Chapter 5, the Proposed Development is assessed as likely to result in neutral, localised, short-term effects of imperceptible significance on population and settlement patterns during the construction phase.

### 4.12.4 Wind Take and Distance to Adjoining Lands

**Observations:**

A submission raised concerns regarding the proximity of several turbines to adjoining lands, specifically in the context of the Wind Energy Development Guidelines (2006) and DEHLG Circular PD 6/16, which recommend a setback of at least two rotor diameters from neighbouring property boundaries. These submissions suggest that certain turbines fall within this indicative buffer and, in some cases, within theoretical fall distance, creating uncertainty about the potential implications for the future development potential of adjacent landholdings. The concerns focus on whether the proposed layout could constrain the ability of neighbouring landowners to bring forward their own renewable energy projects or other forms of development in the future, and whether consistent application of national guidance is required to ensure that adjoining lands are not unduly restricted.

**Response:**

With respect to the potential for wind energy development on the adjoining lands, there is currently no indication of any active or emerging project as the lands have not been the subject of a planning application, pre-planning engagement or any other public signal of a future scheme. We do note, however, that we have been engaging directly with them to understand the concerns raised. We wish to note that, should any future plans for wind energy development on the adjoining lands emerge, we would be happy to explore an appropriate cooperation agreement at that stage.

Although the County Development Plan identifies the wider area as "Open for Consideration", this designation does not imply that a development proposal exists, nor does it oblige the planning authority to limit a neighbouring application on the basis of a hypothetical future project. This approach is consistent with the Wind Energy Development Guidelines 2006, which do not require developers to safeguard the potential future use of adjoining lands for wind energy. The reference in Section 5.13 to "two rotor blades" is a design optimisation consideration rather than a prescriptive control or a mechanism to reserve development capacity for third parties.

Similar issues have previously been considered by the Commission, including in ABP Ref. PL19.244053, where it was accepted that, in the absence of any concrete or credible plans for development, speculative future intentions should not constrain the assessment of a live application.

We also note the reference to Circular Letter PD 6/06. This circular is not listed on the Department's official register, was not issued under section 28 of the Planning and Development Act 2000, and does not have binding status. It predates the adoption of the 2006 Guidelines, which retained the "two rotor blades" wording and did not incorporate the circular's interpretation. The same wording was carried forward in the 2019 Draft Guidelines. As such, Circular 6/06 is best understood as a non-binding departmental view issued prior to the publication of the Guidelines.

Finally, we acknowledge the concerns raised regarding turbines being "within fall distance" of certain landholdings. There is no requirement in the 2006 Guidelines, the County Development Plan, or national policy relating to fall distance. Structural safety is addressed through turbine certification, engineering standards, and the building control regime rather than through prescribed setback distances.

### 4.12.5 Planning

**Observations:**

The application was not Strategic Infrastructure Development (SID) due to MW capacity and should therefore be refused permission.

**Response:**

The Proposed Development was determined to qualify as SID through the statutory determination process by ACP, this statutory SID determination issued on 28/11/24, stands under the current planning legislation as appropriate.

The basis for this decision is due to the potential MW generating capacity of the Proposed Development being above 50MW. Using the maximum generating capacity possible is the standard method for making the decision. The decision is not made using an estimated energy generation level given on a specific wind condition day.

**Observations:**

The red line on the road encompasses the verge and does not have the landowner consent.

**Response:**

All works within the red-lined public road area lie within lands under the control of the public authority which includes the full extent of the public road (which includes carriageway, verges, drains, embankments, cuttings and associated structures). All works will proceed under a Road Opening Licence issued by the roads authority, ensuring compliance with statutory requirements and appropriate oversight.

**Observations:**

Over sail of the turbine blade during the turbine delivery does not have landowner permission agreements within the planning application.

**Response:**

Temporary oversail during delivery occurs within the airspace of the public road and does not involve entering or occupying third-party lands. As such, there is no requirement to provide landowner consent as part of the planning application..

Any works undertaken during the turbine delivery will be undertaken with all permissions and road opening licences required under law. With respect to blade over sail and trespass in the air above a property, the standard in law for trespass is over sail by a fixed object to the ground such as a building, tree or crane and not an object in passing.

# Appendix 1

## Response to Submissions – Noise and Vibration

REPORT

# Response to Submissions – Noise and Vibration

Ballinla Windfarm Project

| CLIENT | DOCUMENT REFERENCE | DATE |
| --- | --- | --- |
| MWP | 237501.0556NR01 | 27 January 2026 |

AWN Consulting Ltd, The Tecpro Building, IDA Business & Technology Park, Clonshaugh, Dublin 17, D17 XD90

# DOCUMENT CONTROL SHEET

| Document Control Sheet | |
|---|---|
| **Our Reference** | 237501.0556NR01 |
| **Original Issue Date** | 27 January 2026 |
| **Client:** | MWP |
| **Client Address:** | The Elm Suite, Loughmore Centre,<br>Raheen Business Park, Limerick, V94 R578 |

| Revision | Revision Date | Description |
|---|---|---|
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| Details | Written by | Approved by |
|---|---|---|
| **Signature** |  |  |
| **Name** | Mike Simms | Dermot Blunnie |
| **Title** | Principal Acoustic Consultant | Associate |
| **Date** | 27 January 2026 | |

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QUALITY I.S. EN ISO 9001:2015 NSAI Certified

# TABLE OF CONTENTS

# 1. INTRODUCTION

This document has been prepared in response to submissions relating to the proposed Ballinla Windfarm Project ACP ref. PAX19.323579, located to the west of Edenderry in County Offaly.

AWN Consulting Ltd. (AWN) are the acoustic consultants for this project and prepared the noise and vibration chapter and assessment of the submitted Environmental Impact Assessment Report (EIAR).

In response to the items relating to environmental noise, appropriate clarifications and further comments are presented in the following sections of this document to clarify, expand, and confirm previous statements within the submitted EIAR. The noise and vibration assessment carried out as part of the submitted EIAR is considered comprehensive and robust.

AWN is a multidisciplinary consultancy offering specialist design advice, expert witness, and litigation support in respect of a wide range of engineering and environmental disciplines. AWN has company has extensive experience in issues relating to wind farm noise having been involved numerous wind farm projects across the island of Ireland.

This document was prepared by Mike Simms (Principal Acoustic Consultant), who holds a BE and MEngSc in Mechanical Engineering, and is a Corporate Member of the Institute of Acoustics. Mike has worked in the field of acoustics for 20 years. He has extensive experience in all aspects of environmental surveying, noise modelling and impact assessment for various sectors including, wind energy, industrial, commercial and residential.

# 2. RESPONSES TO OFFALY COUNTY COUNCIL

## 2.1 Cumulative Assessment

### 2.1.1 OCC Comments

The Offaly County Council (OCC) report states:

> *The Planning Authority are not satisfied that sufficient details on noise and in particular, the combined noise generation from the proposed development and existing wind farms in the area have been provided by the applicant.*

### 2.1.2 Response

Appendix 10-2 presents an appraisal of the study area to confirm whether a cumulative noise assessment is necessary. It concludes that Cloncreen and Mountlucas wind farms must be included in a cumulative assessment. It concludes that it is not necessary to include Yellow River in the cumulative noise assessment. Although the cumulative contribution from this wind farm in the study area is not significant and it could be omitted from the cumulative in line with best practice guidance, Yellow River wind farm was included in the assessment, as stated in Section 10.4.1.2 of the EIAR:

> *An appraisal of the list of wind farm developments in Chapter 2 identified that the nearest other wind turbine developments (existing, permitted or proposed) are Cloncreen Wind Farm located approximately 2.2km (21 turbines), Mount Lucas Wind Farm located approximately 4.1km (28 turbines) and Yellow River Windfarm located approximately 4.2km (29 turbines) from the Proposed Wind Farm. These 78 turbines have been included in the cumulative assessment presented in this Chapter.*

Noise emissions in terms of sound power level for the proposed Ballinla Wind Farm turbines are presented in Table 10-10 of the EIAR. The noise emissions for the Cloncreen, Mountlucas and Yellow River turbines are presented in Tables 10-11, 10-12 and 10-13 respectively. Sound power levels at octave bands from 63 Hz to 8 kHz are presented in Appendix 10-4.

Appendix 10-7 presents the Predicted Cumulative Noise Contour, in which it can clearly be seen that the proposed development, Cloncreen, Mountlucas, along with Yellow River wind farms are included in the noise predictions. A full cumulative appraisal and assessment was undertaken in accordance with best practice guidance and all relevant technical information has been provided in the EIAR.

## 2.2 Background Noise Levels

### 2.2.1 OCC Comments

The Offaly County Council (OCC) report states:

> *The Planning Authority confirms that the Yellow River Windfarm references in the chapter is now fully operational. Given the scale of the Yellow River wind farm at 29 no. wind turbines and its proximity to the subject site, it is the view of the Planning Authority that in order to carry out a robust cumulative noise assessment as part of the proposed development, that the generating wind turbine noise for the adjoining wind farm is necessary and required to be included in any measurements for establishing the baseline noise levels.*

### 2.2.2 Response

As stated in Section 10.4.2.1 of the EIAR, background noise measurement should not include noise from any operational wind turbines:

> *It is important to note that any noise from the existing wind turbines in the area should not form part of the background noise environment at noise sensitive locations.*

There is no need to carry out addition noise measurement and a robust cumulative assessment of the baseline environment is carried out (refer to Section 10.5 of the EIAR). Additionally it has been demonstrated in Appendix 10-2 that the contribution of turbine noise from the yellow river wind turbines is not significant.

## 2.3 Noise Compliant Monitoring Programme

### 2.3.1 OCC Comments

The Offaly County Council (OCC) report states:

> *Consistent with the findings of recent High Court decisions, including Gibbet Hill and Ballyduff, the Planning Authority place emphasis on the need for a Noise Compliant Monitoring Programme being agreed prior to commissioning of the wind farm, if permitted.*

### 2.3.2 Response

Prior to the commissioning of the wind farm, the developer will submit a Noise Complaint Monitoring Programme (NCMP) to the planning authority for written agreement. The NCMP will include a detailed methodology for noise measurement, procedures for recording results and a protocol for managing complaints.

Compliance noise surveys will be undertaken to verify compliance with any noise conditions applied to the development. It is common practice to commence surveys within six months of a wind farm being commissioned. The guidance outlined in the Institute of Acoustics (IOA) document A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise (IOA, 2013) (hereafter referred to as IOA GPG) and its Supplementary Guidance Note 5: Post Completion Measurements (July 2014) will be taken into account.

# 3. RESPONSES TO PUBLIC SUBMISSION

## 3.1 WHO Guidelines

### 3.1.1 Comment

The public submission states:

> *World Health Organisation (WHO) Environmental Noise Guidelines for the European Region (2018).*
>
> *The applicant may have consulted with the WHO Environmental Noise Guidelines but he does not accept their 37dBA threshold.*

### 3.1.2 Response

The noise assessment of Ballinla Wind Farm is robust and has been carried out in line with current standards and best practice guidelines, i.e. Department of the Environment, Heritage, and Local Government (DoEHLG) Wind Energy Development Guidelines (DoEHLG, 2006) and the IOA GPG.

In addition to the discussion in the EIAR, the following comments are presented on the WHO Guidelines in relation to wind farm noise:

The WHO Environmental Noise Guidelines for the European Region (2018) provide guidance on protecting human health from exposure to environmental noise. They set health-based recommendations based on average environmental noise exposure of several sources of environmental noise, including wind turbine noise. Recommendations are rated as either 'strong' or 'conditional'.

A strong recommendation, "can be adopted as policy in most situations" whereas a conditional recommendation, "requires a policy-making process with substantial debate and involvement of various stakeholders. There is less certainty of its efficacy owing to lower quality of evidence of a net benefit, opposing values and preferences of individuals and populations affected or the high resource implications of the recommendation, meaning there may be circumstances or settings in which it will not apply".

The objective of the WHO Environmental Noise Guidelines for the European Region is to provide recommendations for protecting human health from exposure to environmental noise from transportation, wind farm and leisure sources of noise. The guidelines present recommendations for each noise source type in terms of $L_{den}$ and $L_{night}$ levels above which there is risk of adverse health risks.

In relation to wind turbine noise, the WHO Guideline Development Group (GDG) state the following:

> *"For average noise exposure, the GDG conditionally recommends reducing noise levels produced by wind turbines below 45 dB $L_{den}$, as wind turbine noise above this level is associated with adverse health effects.*
>
> *No recommendation is made for average night noise exposure Lnight of wind turbines. The quality of evidence of night-time exposure to wind turbine noise is too low to allow a recommendation.*
>
> *To reduce health effects, the GDG conditionally recommends that policy-makers implement suitable measures to reduce noise exposure from wind turbines in the population exposed to levels above the guideline values for average noise exposure. No evidence is available, however, to facilitate the recommendation of one particular type of intervention over another."*

The quality of evidence used for the WHO research is stated as being 'Low', the recommendations are therefore conditional.

The WHO Environmental Noise Guidelines aim to support the legislation and policy-making process on local, national, and international level, thus shall be considered by Irish policy makers for any future revisions of Irish National Guidelines.

There is potential for increased uncertainty due to the parameter used by the WHO for assessment of exposure (i.e., $L_{den}$), which it is acknowledged may be a poor characterisation of wind turbine noise and may limit the ability to observe associations between wind turbine noise and health outcomes, as stated below, from within Environmental Noise Guidelines:

> *"Even though correlations between noise indicators tend to be high (especially between LAeq-like indicators) and conversions between indicators do not normally influence the correlations between the noise indicator and a particular health effect, important assumptions remain when exposure to wind turbine noise in $L_{den}$ is converted from original sound pressure level values. The conversion requires, as variable, the statistical distribution of annual wind speed at a particular height, which depends on the type of wind turbine and meteorological conditions at a particular geographical location. Such input variables may not be directly applicable for use in other sites. They are sometimes used without specific validation for a particular area, however, because of practical limitations or lack of data and resources. This can lead to increased uncertainty in the assessment of the relationship between wind turbine noise exposure and health outcomes. Based on all these factors, it may be concluded that the acoustical description of wind turbine noise by means of $L_{den}$ or $L_{night}$ may be a poor characterization of wind turbine noise and may limit the ability to observe associations between wind turbine noise and health outcomes."*
>
> *"...Further work is required to assess fully the benefits and harms of exposure to environmental noise from wind turbines and to clarify whether the potential benefits associated with reducing exposure to environmental noise for individuals living in the vicinity of wind turbines outweigh the impact on the development of renewable energy policies in the WHO European Region."*

It is considered that the conditional WHO recommended average noise exposure level (i.e. 45 dB $L_{den}$), if applied as target noise criteria for an existing or proposed wind turbine development in Ireland, should be done with caution. The conditional WHO recommendation for average noise exposure level (i.e., 45 dB $L_{den}$) may be a poor characterisation of wind turbine noise and may limit the ability to observe associations between wind turbine noise and health outcomes.

## 3.2 43dB(A) Contour

### 3.2.1 Comment

The public submission reviews and comments on the Cumulative Screening presented in Appendix 10-2 of the EIAR and states the following:

> *The 43dBA contour should be provided for all of the surrounding windfarms*

### 3.2.2 Response

Appendix 10-7 presents the cumulative predicted wind turbine noise contours. The cumulative 43 dB $L_{A90}$ contour is presented in yellow colour the figure in Appendix 10-7.

## 3.3 Sound Power Levels for Infrasound

### 3.3.1 Comment

On review of Appendix 10-4 Sound Power Levels, the public submission states:

> *No sound power levels are provided for Infrasound at less than 20Hz level.*

### 3.3.2 Response

Infrasound is discussed in Section 10.3.2.5 of the EIAR on page 10-13. At the end of this section, the EIAR states:

> *In conclusion, low frequency noise and infrasound associated with wind turbines is expected to be below perceptibility thresholds and are not likely to result in any significant effects at NSLs. The are no criteria proposed to assess low frequency noise or infrasound as part of the EIAR.*

To add to the material presented on infrasound and low-frequency noise in the EIAR (Section 10.3.2.5, page 10-13), reference is made here to the December 2024 Institute of Acoustics Statement in Respect of Wind Farm Noise Assessment[1], in which it states:

> *Low Frequency Noise*
>
> *The IOA is aware that there is some information presented at planning inquiries suggesting the potential for physiological health effects from low frequency noise from wind turbines. It is current advice to members that there is no need to assess low frequency noise as part of the noise impact assessment process, as the absolute levels, whilst potentially audible at typical receptor distances, are well below those reported to trigger physiological health effects based on peer reviewed research to date.*
>
> *Infrasound*
>
> *The IOA is aware that there is some information presented at planning inquiries suggesting the potential for physiological health effects from infrasound from wind turbines. It is current advice to members that there is no need to assess infrasound as part of the noise impact assessment process, as the absolute levels are well below those reported to trigger physiological health effects based on peer reviewed research to date.*

The noise modelling predictions in the EIAR are carried out using the ISO 9613-2:2024 Acoustics – Attenuation of sound during propagation outdoors – Part 2: Engineering method for the prediction of sound pressure levels outdoors (ISO, 2024), in accordance with the IOA GPG.

## 3.4 Noise Modelling Software

### 3.4.1 Comment

On review of Appendix 10-5 Noise Modelling Parameters, the public submission states:

[1] https://www.ioa.org.uk/sites/default/files/IOA%20Statement%20-%20Wind%20Farm%20Noise%20Assessment%20Dec%202024.pdf accessed 13 Jan 2025

*At a consultation meeting on the 5/9/2025 with Statkraft, we were refused access to the modelling software. Such software is part of the lacunae for a planning application. Refusal of access to such software invalidates the application.*

### 3.4.2 Response

The software is licence for use by AWN Consulting Limited and cannot be shared with third parties. A copy of the software used in this assessment or similar software packages are available to purchase from various distributors.

Section 10.4.5.1 of the EIAR confirms the noise modelling software used is DGMR iNoise Enterprise, Version 2024.2.1. The EIAR contains sufficient information on the assessment methodology and input data used in the EIAR assessment to enable a third party to undertake an independent noise assessment and or scrutinise the assessment presented in the EIAR chapter..

## 3.5 Noise-sensitive Location Coordinates

### 3.5.1 Comment

On review of Appendix 10-6, the public submission states:

*We have checked the grid references for 5 of these sensitive receptors and the distances between turbines & houses have been exaggerated to a large extent, which decreases predicted noise levels. The corresponding noise levels are not reliable.*

### 3.5.2 Response

The coordinates of all NSLs in the noise assessment are provided in Appendix 10-6. The Colm Quinn report refers to a figure in the Shadow Flicker assessment, Figure 16-2, which uses a separate numbering system for NSLs to the noise assessment. For example, the NSL referred to as H095 in the Shadow Flicker assessment corresponds to H282 in the noise assessment. There has been no exaggeration of the distances between proposed wind turbines and noise-sensitive locations.

## 3.6 Amplitude Modulation (AM)

### 3.6.1 Comment

On page 231, the public submission states:

*The AM (Amplitude Modulation) impact has not been assessed. The 2006 Noise Guidance arguably may b considered outdated due to the passing of time and does not account for AM noise impact/.*

*[…]*

*The "thump" AM noise from a wind turbine is a type of sound characterized by fluctuating amplitude, specifically the modulation of the turbine's aerodynamic noise. This modulation is often described as a "thump," "swish," or "whoosh" sound and is related to the frequency at which the turbine blades pass by. (https://iea-wind.org/wpcontent/uploads/2021/05/IEA-Wind-TCP-Task-39-FactSheet-Amplitude-Modulation-20181006.pdf)*

### 3.6.2 Response

Amplitude Modulation is addressed in detail in Section 10.3.2.5 on page 10-14 of the EIAR and the comments therein remain valid. The following paragraphs are re-produced here for emphasis:

> *Concluding Comments on AM*
>
> *It is critical to this discussion to recognise that AM is an inherent characteristic of wind turbine noise. A distinction must be made between 'Normal' AM, which is a regular fluctuation in noise levels, and 'Other' or 'Excessive' AM, which can be more pronounced and potentially disruptive. Normal AM is typically expected and accounted for in noise assessments, whereas Excessive AM should it occur may require additional mitigation measures due to its potential impact on nearby residents.*
>
> *Research and Guidance in the field of wind turbine noise AM is ongoing with recent publications being issued by the Institute of Acoustics (IOA) Noise working Group (Wind Turbine Noise) Amplitude Modulation Working Group (AMWG) namely, A Method for Rating Amplitude Modulation in Wind Turbine Noise (August 2016) (The Reference Method). The document proposes an objective method for measuring and rating AM. The AMWG does not propose what level of AM is likely to result in adverse community response or propose any limits for AM. The purpose of the group is simply to use existing research to develop a Reference Methodology for the measurement and rating of amplitude modulation.*
>
> *A 2016 report commissioned by the UK government Wind turbine AM review: Phase 2 report. 3514482A Issue 3. Department for Business, Energy & Industrial Strategy completed by WSP Parsons Brinckerhoff recommended the use of a penalty scheme as a potential planning condition for AM to cover periods of complaints due to unacceptable AM. The report included the following caveat "Any condition developed using the elements proposed in this study should be subject to a period of testing and review. The period should cover a number of sites where the condition has been implemented and would be typically in the order of 2-5 years from planning approval being granted."*
>
> *To date there is no clear industry consensus on how AM should be regulated or managed at the planning stage. Consequently there is no methodology that can be applied to predict the likelihood of AM at a particular wind farm site. Any site specific assessment would need to be undertaken at post commissioning stage. The assessment of AM at post commissioning stage is discussed in Section 10.7.1.2*

In addition, in Section 10.7.1.2 of the EIAR, mitigation measures are proposed in respect of amplitude modulation.

## 3.7 Infrasound and the Meenacloghspar Case

### 3.7.1 Comment

On page 232, the report states:

> *Infrasound is high level sound at frequencies below 20 Hz. This was a prominent feature of passive yaw "downwind" turbines where the blades were positioned downwind of the tower which resulted in a characteristic "thump" as each blade passed through the wake caused by the turbine tower. With modern active yaw turbines (i.e. the blades are upwind of the tower and the turbine is turned to face into the wind by a wind direction sensor on the nacelle activating a yaw motor) this is no longer a significant feature. Notwithstanding same, this low frequency noise impact was tested in the recent court case, ref [2024] IEHC136 - Margaret Webster and Keith Rollo (Plaintiffs) and Ross Shorten and Joan Carty (Plaintiffs) and*

*Meenacloghspar (Wind) Ltd (Defendant). The Judge's ruling states that 'the fact that AM and thump AM remain to be regulated does not mean that the court should ignore these characteristics and 'existing planning guidance effectively (WEDG 2006) is not responsive to the issues complained of - AM, thump AM etc'*

*The judgement also states that 'Low frequency noise (sound up to approximately 150 hertz) only slightly above the threshold of audibility can cause considerable disturbance and is more difficult to mask and get used to than other types of noise…..on the balance of probabilities that whilst low frequency noise is not the dominant characteristic of the WTN, there is a significant element of audible low and lower frequency noise which manifests as thump AM' It is considered that these 2006 noise guidelines therefore do not include sufficient guidance, particularly in relation to AM (Amplitude Modulation) and 'thump' AM noise which creates the 'whoosh' or 'thump' sound which has been found to cause nuisance.*

The discussion in Section 3.6 on addresses the points raised relation to amplitude modulation in these paragraphs. See also Section 10.7.1.2 of the EIAR which refers to mitigation measures in the event of a compliant of AM.

The [2024] IEHC136Webster/Rollo V Meenaclogher Case referred to an operational wind farm, where the distances to the nearest NSL were much less than those to the nearest NSLs to the proposed Ballinla wind turbines. The outcome of that case was specific the circumstances of that site, and should not be considered representative of wind farms in general.

## 3.8 Construction Noise and Vibration

### 3.8.1 Comment

On page 232, the public submission states:

*The report goes on to state that significant vibration impacts are not associated with the proposed development. However, given the lack of clarity and assessment in relation to major elements of the proposed development such as blasting or rock breaking at the borrow pit, it is considered that this claim has not been substantiated.*

### 3.8.2 Response

Criteria for construction vibration are presented in Section 10.3.2.4 of the EIAR.

Section 10.6.1 presents the construction noise and vibration impact assessment. Within this section the following is stated:

*In general, the distances between the construction activities associated with the Proposed Development and the nearest NSL's are such that there will be no significant noise, and vibration impacts at the NSL's. The following sections present an assessment of the main stages of the construction phase that have the potential for associated noise and vibration effects, all other stages and elements are considered unlikely to have any significant noise and vibration effects.*

Noise from rock-breaking and also piling has been taken into account in the assessment. The residual effects remain not significant to slight for the main wind farm site and not significant to moderate for the gird connection construction.

It is confirmed that the construction methods to not include blasting. There is no borrow pits as part of the proposed development.

## 3.9 NSLs downwind of proposed development

### 3.9.1 Comment

On page 232, the public submission states:

> *Furthermore, according to Met Eireann, prevailing wind in Ireland comes from the South and West. In this regard, dwelling houses in the immediate vicinity of the proposed windfarm area located just in excess of 700m to the east and north east of the site, ie 'down wind' of the site and are more likely therefore to suffer from noise and nuisance noise. Having regards to the potential noise and nuisance impacts of AM and thump AM on residential amenity, as highlighted in the recent Court ruling set out above, it is considered that the potential significant impacts of noise have not been adequately addressed so as to rule out the potential for impact.*

### 3.9.2 Response

As stated in Section 10.4.5.1 and Appendix 10.5 of the EIAR, the noise prediction calculations are carried out in accordance with ISO 9613: Acoustics – Attenuation of sound outdoors, Part 2: General method of calculation (2024). Also, as stated in Section 10.6.2.1 of the EIAR:

> *Using the assessment methodology described in Section 10.4.5 the predicted cumulative turbine noise levels have been calculated at all NSLs within the study area of the Proposed Development. A worst-case omni-directional cumulative turbine noise prediction assessment has been carried out using the ISO 9613-2 calculation standard and best practice guidance for turbine noise prediction contained in the IOA GPG. These calculations are based on 'worst-case' conditions favourable to noise propagation, i.e., downwind propagation from source to receiver and/or downward refraction under temperature inversions.*

Thus, the turbine noise assessment presented in the EIAR are based on a scenario that each NSL is downwind of all wind turbines which presents a worst-case scenario to ensure a robust assessment of turbine noise in full accordance with best practice guidance.

# 4. RESPONSES TO NEHS COMMENTS

## 4.1 Reference to BS4142

### 4.1.1 NEHS Comments

The National Environmental Health Service (NEHS) submission suggests that the predicted noise levels should be assessed against the background noise according to the methodology in BS4142:

> *"The NEHS has considered Chapter 10 of the EIAR and the accompanying documentation on the noise impact assessment and makes the following observations:*
>
> *a) The 2006 Guidelines include guidance on how to derive noise limits for daytime and night-time periods, which can be summarised as: daytime limits take account of existing background noise levels and include a fixed limit of 45 dB, or background + 5 dB, whichever is the greater, except in low background noise environments where a fixed minimum limit in the range 35-40 dB should be considered.*
>
> *b) This criteria is therefore that turbine noise at noise sensitive locations should not exceed for daytime periods:*
>
> *40 dB(A) where background noise levels are below 30 dB; and,*
>
> *45 dB(A) or background noise plus 5 dB, whichever is the greater, where background noise levels are greater than 30.*
>
> *c) This criteria can potentially see a predicted increase of up to 15 dB(A) change in the noise environment as compliant with the criteria. Any change in the noise environment of this magnitude is highly likely to cause complaints and/or nuisance. BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound identifies an increase of 10 dB above existing rated noise levels will have a significant adverse impact and is highly likely to cause complaints."*

### 4.1.2 Response

British Standard BS 4142:2014+AI:2019 Methods for rating and assessing industrial and commercial sound (BS-4142), is not applicable to the assessment of wind turbines as the assessment of wind turbine noise falls within the scope of other standards and guidance as discussed in detail in Section 10.3.1.2 of the EIAR. This is confirmed in Section 1.3 of BS-4142 which contains the following statement:

> *"The standard is not intended to be applied to the rating and assessment of sound from:*
>
> *[among other factors] other sources falling within the scope of other standards or guidance".*

The statement from BS-4142 therefore confirms that the standard is not applicable for the assessment of wind turbine noise.

The following statement is included within the HSE submissions:

> *"…an increase of 10 dB above existing rated noise levels will have a significant adverse impact and is highly likely to cause complaints."*

This statement from BS-4142, if considered in isolation, fails to account for the context in which the noise levels occur and the overall level of noise, which are critical factors in the assessment. The BS-4142 standard includes the follow statement with respect to context:

*"The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs. An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context."*

*"The absolute level of sound. For a given difference between the rating level and the background sound level, the magnitude of the overall impact might be greater for an acoustic environment where the residual sound level is high than for an acoustic environment where the residual sound level is low. Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night."*

It is reiterated that the BS-4142 standard is not applicable to the assessment of wind turbine noise; the assessment of wind turbine noise has been undertaken in accordance the applicable guidelines (2006 WEDGs) and best practice guidance for the assessment of wind turbine noise (IOA GPG).

## 4.2 Use of Lower Fixed Threshold

### 4.2.1 NEHS Comments

The NEHS submission makes the following comment in relation to the use of a lower fixed limit when background noise levels are low.

d) *From the 2006 Guidelines "However, in very quiet areas, the use of a margin of 5dB(A) above background noise at nearby noise sensitive locations is not necessary to offer a reasonable degree of protection and may unduly restrict wind energy developments which should be recognised as having wider national and global benefits. Instead, in low noise environments where background noise is less than 30dB(A), it is recommended that the daytime level of the LA90, 10min of the wind energy development be limited to an absolute level within the range of 35 - 40dB(A)." There is no evidence base to support the statement that this limit is not necessary to offer a reasonable degree of protection in low noise background areas.*

Also:

*The NEHS notes the predicted cumulative noise exposure at NSL detailed in table 10.12 and the predicted exceedances against the adopted criteria. There are low background NSL (as defined by ETSU R-97), where if the lower end of the 35 to 40 criteria set in ETSU R-97 for low background areas was adopted there would be more predicted exceedances.*

*The NEHS cannot find any rationale in the EIAR for adopting the higher criteria for low background levels in the range 35 to 40 dB. The changing of some of the absolute noise exposure limits at NSLs from a limit based on a low background to a non-low background at increased wind speeds increases the criteria for noise exposure limits.*

*If the wind turbine noise is the predominate noise source then the control of the level of noise exposure to protect health should be the same whatever the background level is. If the background level becomes the predominate noise source at higher wind speeds, then the wind turbine noise does not need controlling. There is no reasonable rationale on health protection grounds to increase the absolute noise exposure limit because the background level has increased, if the wind turbine noise is still the dominant noise source.*

### 4.2.2 Response

Section 10.5.2 of the EIAR presents the rationale for using 40 dB $L_{A90}$ as the lower threshold, and as stated therein, is in line with the applicable guidelines.

A lower threshold of 40 dB is commonly adopted in planning conditions for similar developments that have been granted planning permission by An Bord Pleanála (now An Coimisiún Pleanála) and local planning authorities in recent years for example, Derrinlough Wind Farm (Planning Ref: 306706-20), Coole Wind Farm (Planning Ref: PL25M.300686) Cloncreen Wind Farm (Planning Ref: PA0047), Borrisbeg Wind Farm (Planning Ref: 318704-23), Castlebanny Wind Farm (Planning Ref: 309306-21), Ballivor Wind Farm (Planning Ref: 316212-23) and Carrig Renewables Wind Farm (Planning Ref: 318689-23).

## 4.3 Webster/Rollo V Meenaclogher Case

### 4.3.1 NEHS Comments

*e) The evaluation of significance of the effect should be based on the most up to date scientific knowledge and data. The EIA process specifically requires the assessment to be 'the likely significant effects' and if the knowledge on an evaluation criteria for significance has developed since the publication of a guidance, then it is reasonable and correct to use the developed knowledge base in assessing the significance of any effect. This is particularly relevant to the protection of Public Health. Statutory Guidance issued under the Planning Development Act 2000 (as amended) has to be considered by the Planning Authority when making a decision,'but it is not a consideration that precludes all other evidence and knowledge. In in Webster/Rollo V Meenaclogher (Wind) Limited (2024 IEHC 136) 8th March 2024 the Judgement supports this position, in that the judgement makes it clear that compliance with the current Planning Guidance does not preclude a private noise nuisance.*

### 4.3.2 Response

The noise assessment of the proposed Ballinla Wind Farm was carried out in accordance applicable guidelines (2006 WEDGs) and best practice guidance (IOA GPG). As mentionted above, the Webster/Rollo V Meenaclogher Case referred to an operational wind farm, where the distances to the nearest NSL were much less than those to the nearest NSLs to the proposed Ballinla wind turbines. The outcome of that case was specific the circumstances of that site, and should not be considered representative of wind farms in general.

## 4.4 Change to the Baseline Noise Environment

### 4.4.1 NEHS Comments

*f) In the opinion of the NEHS, tabulation of the predicted change in the noise environment from the proposed development and the cumulative change in the original baseline noise environment before any wind farm development in the area is the most informative way of reporting the likely effect of operational noise in an EIAR.*

### 4.4.2 Response

Appendix 10-8 of the EIAR presents tabulated result of the turbine noise predictions and assessment review at all NLSs assessed.

The criteria for setting turbine noise limits, as outlined in Section 10.3.2 of the EIAR, require that background noise levels in the receiving environment be determined and that appropriate turbine noise limits be defined relative to the baseline noise environment.

Section 10.4.2 describes the methodology used for the background noise survey, which was conducted in accordance with the guidance provided in the IOA GPG.

Table 10-14 of the EIAR confirms the derived background noise levels which have been measured at five locations within the receiving environment. Table 10-15 of the EIAR discusses the applicable criteria and proposes operation noise limit for the wind turbines, which have been set with reference to the baseline noise environment at surrounding NSLs.

The assessment confirms that baseline noise levels were considered when evaluating potential impacts and setting appropriate operational noise criteria. The methodology adopted is consistent with applicable guidelines (2006 WEDGs) and best practice guidance (IOA GPG).

## 4.5 WHO Guidance

### 4.5.1 NEHS Comments

*g) The NEHS would consider the most appropriate criteria for assessing significance of the predicted noise would be consideration of the ENVIRONMENTAL NOISE GUIDELINES for the European Region, 2018*

*The 2018 WHO Guidance set health protection levels from environmental noise. https://iris.who.int/bitstream/handle/10665/279952/9789289053563-eng.pdf?sequence=1*

*h) Whilst the EIAR does not accept the above position (page 10-23) of the NEHS, the use of the 2006 Guidance with regards to noise exposure, and in particular the 'balance between development and protection of public health' stated are resulting in a significant volume of complaints from communities exposed to noise from wind turbines post development. This position that the absolute noise exposure limits set in the 2006 Guidance do not necessarily protect Public Health in specific development situations is now supported by Judgements of the Irish Courts, as reference previously in this submission.*

### 4.5.2 Response

Please see Section 3.1 of this report for commentary on the WHO Guidelines in respect of wind farm noise impact assessments.

## 4.6 Draft WEDG 2019

### 4.6.1 NEHS Comments

*i) It should also be noted that the EIAR states with regard the draft 2019 Guidelines that It is important to note that during the public consultation on the Draft Guidelines (DoHPLG, 2019), several concerns relating to the proposed approach to noise assessments of wind farms in the Draft Guidelines (DoHPLG, 2019) have been expressed by various parties' These concerns were in fact due to assessment methodology and not the proposed standards set to protect health. In the response from the Institute of Acoustics they specifically state: 'The Group agreed and stressed in their responses that they believe the setting of suitable noise limits is a matter for Government policy. The Group was only concerned with aspects of technical accuracy and clarity'.*

### 4.6.2 Response

Section 10.3.5 comments on the Draft Wind Energy Guidelines; shortly before the submission of the Ballinla Windfarm planning application, it is noted a statement was submitted by the Minister for Housing, Local Government and Heritage during a Dail Eireann Debates on 19 June 2025[2] which confirmed that the "*current 2006 Wind Energy Development Guidelines remain in force.*"

Section 10.3.1.2.1.3 also makes the following undertaking:

> *If updated Wind Energy Development Guidelines are published during the application process for the Proposed Wind Farm it is anticipated that any relevant changes affecting the noise will be addressed through an appropriate planning condition, or where a supplementary assessment is necessary, through provision of additional information.*

[2] https://www.oireachtas.ie/en/debates/question/2025-06-19/308/

# 5. RESPONSES TO EFFECT ON HORSES SUBMISSION

## 5.1 Noise Effects on Horses

### 5.1.1 Comments

The submission from a local Stud Farm expresses concerns in relation to possible effects of noise and vibration from the Ballinla Wind Farm on the thoroughbred horses on their land. The submission states:

> *The average farm has a noise level of 30-45 decibels but with the presence of turbines within 1000km it increases to 50-70 decibels. Once this noise level goes above 50 decibels it triggers "fight or flight" in horses, and this of course poses risks to both horses and humans.*

### 5.1.2 Response

In the case of Ballinla Wind Farm, it is not correct that a wind turbine produces noise levels of 50-70 decibels at a distance of 1km.

The dwelling houses within the adjacent Stud Farm are NSLs no. H087 and H473, where the highest cumulative predicted turbine noise levels are 37.6 and 38.2 dB $L_{A90}$ (See Appendix 10-8 of the EIAR). The predicted turbine noise levels are within the criteria used in the noise assessment in the EIAR.

Figure 5-1 shows the same noise contours as Appendix 10-7 of the EIAR, with an approximate boundary for the adjacent Stud Farm included. The contours show that predicted wind turbine noise levels across much of the stud farm are in the range 35 to 40 dB $L_{A90}$, increasing to 43 dB $L_{A90}$ in a limited area of the northwest of the land.

AWN does not offer comment on the noise effects on horses, but with reference to the 50 decibel threshold mentioned by the submission, Figure 5-1 shows that no part of the adjacent Stud Farm is expected to exceed this level.

## Figure 5-1. Wind Turbine Noise Levels over adjacent Stud Farm

# 6. RESPONSE TO HUSON AND ASSOCIATES REPORT

The Huson and Associates report (hereafter referred to as the HA report) comments on the noise assessment presented in the Chapter 10 of the Ballinla EIAR. Pages 2 to 3 in the HA report present a summary of the points raised. Many of the topics are common to the submissions discussed previous sections of this Response. Specific responses to the points raised in pages 2 to 3 of the HA report are provided below. The points are addressed under specific headings relative to each topic.

## 6.1 Amplitude Modulation

The HA report states:

> *• The wind turbines are located too close to each other that will result in increased wake turbulence that in turn will increase noise emission and the characteristic of amplitude modulation. The NVA[3] has not considered these effects.*
>
> *• The layout of the seven wind turbines is such that excessive amplitude modulation will arise but the NVA has not accounted for any penalty due this or other special audible characteristics (tonality, impulsive sound).*

AWN Response:

Amplitude Modulation (AM) has been fully considered in the EIAR in line with best practice; AM is addressed in detail in Section 10.3.2.5 on page 10-14 of the EIAR and the comments therein remain valid. In addition, in Section 10.7.1.2 of the EIAR, mitigation measures are proposed in respect of amplitude modulation. See Section 3.6.2 of this Response for further discussion.

## 6.2 Guidelines and Criteria

The HA report states:

> *• Noise compliance with WEDG 2006 should have been completed at 7 m/s, not 11 m/s.*
>
> *• WEDG 2006 target noise limits have been misinterpreted in the NVA to produce higher proposed noise limits.*
>
> *• Target noise limits should be lower at 35 dB(A) in 7 m/s wind speed at standardised height.*
>
> *• The NVA should not rely on guidelines used to underpin ETSU-R-97 because those guidelines are currently under review and the WEDG 2006 does not refer to them.*
>
> *• The current WEDG 2006 does not reflect best practice and is outdated, but if applied properly, shows that this proposed wind farm would be non-compliant.*

AWN Response:

The applicable guidelines for the noise assessment are presented in discussed in detail in Section 10.3.2.5 of the EIAR. As discussed in Section 4.2.2 in this Response, the derivation of and rationale for the proposed noise criteria is presented in detail in Section 10.5.2 of the EIAR and are fully in accordance with the current guidelines applicable to wind turbine noise.

It is noted that in 2025, a draft update of the guidance 'Assessment and Rating of Wind Turbine Noise' was published for consultation on 4 July 2025. This draft update to ETSU-R-97 is a UK consultation

[3] NVA refers to the Noise and Vibration Assessment, i.e. Chapter 10 of the Ballinla EIAR

document and is not applicable to wind energy assessments in Ireland. In line with its draft status, and the advice within the document that it should not be used by planning authorities, the consultation draft has not been considered in this assessment.

## 6.3 Noise Modelling

The HA report states:

> • *Predicted sound levels in the NVA are too low.*
>
> • *When more conservative noise model inputs are used the predicted noise levels shown in the NVA will be at least 2 dB higher.*
>
> • *With noise model inputs used in the NVA there will be 184 dwellings that will exceed the correct 35 dB(A) noise limit target at 7 m/s.*
>
> • *With more conservative noise model inputs 228 dwellings will exceed the correct 35 dB(A) noise limit target at 7 m/s*

AWN Response:

The noise modelling inputs and parameters used in the assessment are presented in Appendices 10-4 and 10-5 of the EIAR. The predicted turbine noise levels presented in the EIAR are calculated in full accordance with ISO 9613-2 and full in accordance with IOA GPG and in line with best-practice guidance.

## 6.4 Change to the Baseline Noise Environment

The HA report states:

> • *The requirement from WEDG 2006 that 'that there is no significant increase in ambient noise levels at any nearby noise sensitive locations' has not been addressed in the NVA.*
>
> • *The soundscape in the area will change dramatically for the Quinn Family and others in the area if the wind farm is approved and this is contrary to the requirement of the WEDG 2006.*

AWN Response:

Changes to the noise environment are discussed in Section 4.4 above.

The criteria for setting turbine noise limits, as outlined in Section 10.3.2 of the EIAR, require that background noise levels in the receiving environment be determined and that appropriate turbine noise limits be defined relative to the baseline noise environment. See Section 4.4.2 of this Response for further discussion.

The HA report also states:

> • *Ambient sound levels are shown to be below the 17 dB(A) instrument noise floor in wind speeds up to 9 m/s (10m AGL) at H014 compared with sound levels optimistically predicted to be more than 38dB(A) for the Quinn dwellings*

AWN Response:

This statement is incorrect: as clearly shown in Table 10-14 of the EIAR, the baseline noise level at H014 at 9 m/s is 38 dB $L_{A90}$.

As stated in Section 10.6.2.1 of the EIAR on page 10-48, while noise levels at low wind speeds will increase due to the development and specifically the operation of the turbines, the predicted levels will remain low, albeit new sources of noise will be introduced to the soundscape.

## 6.5 Low-frequency Noise

The HA report states:

- *Low frequency noise impact has not been assessed.*

AWN Response:

Low-frequency noise has been fully considered in the EIAR in Section 10.3.2.5, page 10-13. Additionally, as referred to in Section 3.3.2 of this Response, it is noted in the statement from the Institute of Acoustics from December 2024[1] that: "*It is current advice to members that there is no need to assess low frequency noise as part of the noise impact assessment process".*

# 7. CONCLUSION

This technical report has been prepared in response to a submissions in relation to the planning application for the Ballinla Wind Farm.

The submitted noise impact assessment is robust and has been carried out in line with current standards and best practice guidelines (i.e. Planning Guidelines for Wind Development 2006 and IOA GPG). In addition to these guidelines, discussion has been provided in relation to matters such as Low frequency noise, Infrasound, and Amplitude Modulation.

The submitted EIAR Noise and Vibration assessment demonstrates that the proposed development can operate within the noise criteria derived from the relevant guidance. This document has reiterated the relevant sections of the EIAR to comprehensively address the concerns raised by the Offaly County Council, submissions from the public, the NEHS and the Huson and Associates report.