TOBIN

Case Number ABP – 321522-24
Scart Mountain Wind Farm
Response to Submissions Report

Ireland FuturEnergy

BUILT ON KNOWLEDGE

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Appendices

1. INTRODUCTION

1.1 PURPOSE OF THIS REPORT

This response to submissions document has been prepared in response to a letter from An Coimisiún Pleanála (ACP) dated 17th July 2025, inviting the applicant (FuturEnergy Scart Mountain Designated Activity Company Limited) to respond to the observations received in respect of a planning application for the proposed Scart Mountain Wind Farm development (case number ABP-322485-25). These observations were received from ACP with letters dated the 11th March and the 31st of July 2025.

We consider that the following responses address all the matters raised in the submissions/observations.

1.2 SUBMISSIONS RECEIVED

The following table lists the submissions received by ACP in respect of this proposed development.

Table 1.1: Submissions Received

ACP Ref.	Observation Made By	Observation Letter date
1	Alexander Meyer & Rev April Kling	11/03/25
2	An Taisce	11/03/25
3	Catherine and Ger Fitzgerald	11/03/25
4	Christopher and Alice Phelan	11/03/25
5	Cllr Liam Brazil	11/03/25
6	Conor D McGuiness	11/03/25
7	Daniel Bray	11/03/25
8	Department of Defence	11/03/25
9	Development Applications Unit	11/03/25
10	Eamon Hickey	11/03/25
11	Elaine O'Grady	11/03/25
12	Elizabeth Alderton	11/03/25
13	Emma Sheridan	11/03/25
14	Eoin Quinn	11/03/25
15	Ester Barron & Joe Prendergast	11/03/25

16	Failte Ireland	11/03/25
17	Fiona Mulcahy	11/03/25
18	Fr Martin Keogh & Mrs Emer Pedley	11/03/25
19	Helen Hickey	11/03/25
20	HSE South	11/03/25
21	Irish Aviation Authority	11/03/25
22	Jacqueline Walsh	11/03/25
23	Julia Gorodecky and others	11/03/25 & 31/08/25
24	Kamila & Jacek Jackiewicz	11/03/25
25	Keith Revels & Jonathan Young	11/03/25
26	Kieran Veale	11/03/25
27	Knockmealdown Active	11/03/25
28	Knockmealdown Protection Group	11/03/25
29	Liam Lacey	11/03/25
30	Mattie McGrath TD	11/03/25
31	Maureen O'Donoghue	11/03/25
32	Michael Bray	11/03/25
33	Michelle Kenrick	11/03/25
34	Modelingo Community Development Group	11/03/25
35	Monika & Stanislav Dudek	11/03/25
36	National Woodland Trust	11/03/25
37	Nicola Windsor Smith	11/03/25
38	Pat and Gillian Fitzgerald	11/03/25
39	Pat Kiely	11/03/25
40	Professor Mike Gormally Fres	11/03/25
41	Richard & Edwina Sheehan	11/03/25

42	Ronald Jefferson	11/03/25
43	Rory Dillon	11/03/25
44	Transport Infrastructure Ireland	11/03/25
45	Uisce Éireann	11/03/25
46	Waterford City and County Council	11/03/25
47	Wild Ireland Defense CLG	11/03/25
48	William and Geraldine Bumster	11/03/25

1.3 Format of Response

This response is presented on the basis of themes raised in the various observations. Each theme is discussed in a specific section of this submission. The 48 no. submissions contain a large number of comments. However, many comments are observational in nature and do not necessitate a response.

This submission has focused on the key points raised under each theme where we feel a response is warranted and may be helpful for ACP in making a determination on the application.

All specialists involved in the preparation of the Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS) have had an opportunity to review each of the individual observations and have provided a technical response to the items relevant to their area of expertise, where appropriate.

2. PROJECT DESCRIPTION

The following section provides responses to the observations received which relate to the description of the proposed project. They are divided into a number of topics, under the headings below. The EIAR chapter relating to project description and this response were prepared by TOBIN.

2.1 DISTANCE TO DWELLINGS

Six observations raised concerns with the distances from the proposed wind farm site, and more specifically from the wind turbines themselves to various dwellings in the surrounding area. As described in Chapter 2 of the submitted EIAR (Description of the Proposed Project), the proposed setback from the turbine locations to dwelling houses exceeds 800m, which is in compliance with the Wind Energy Development Guidelines (WEDGs) 2006 and the Draft Revised WEDGs 2019 (both published by the Department of the Environment, Heritage and Local Government), which were considered while designing the layout of the turbines. The four times tip height setback minimum distance (from the Draft Revised WEDGs) even for the tallest turbine being considered (i.e. 185m) would be 740m. The setback distance the project has achieved is >800m, and therefore it comfortably exceeds this minimum requirement.

One observation stated that their property is 500m from the nearest turbine, and that they are the nearest property to the proposed turbines, which would of course mean that the proposed project would not have sufficient setback to comply with the 2019 Draft Revised WEDGs. The observation (from Alexander and April Meyer) included an Eircode, and upon checking the setback from this property to the proposed turbines, it was found that the nearest proposed turbine is >1km setback from the property, meaning there is no issue at this property relating to setback.

The Applicant has sought to maximise the setback from properties to minimise potential noise impacts on residential amenity, and it was decided early in the design process that a set-back of >800m would be appropriate. It is worth noting that research shows that while people living near proposed wind farms often express significant concerns, primarily driven by uncertainty and perceived risks, these concerns tend to diminish once the wind farms are operational. A longitudinal study in Belgium for an offshore wind farm[1] found that acceptance rose significantly from the planning phase to post-construction, with negative attitudes declining as turbines became part of the local landscape and identity. Visibility of the turbines had little influence on attitudes once the wind farm was operational. Onshore research in the UK showed that the number of residents near a wind farm who found the wind farm visually appealing increased over time[2]. It also found that the number of people who considered the wind farm to be a valuable asset for secure energy production increased with time.

2.2 FORESTRY

A submission raised concern regarding the felling of forestry within the proposed wind farmsite which could have a negative effect on the forest crop for Ireland and the afforestation targets,

[1] https://www.tandfonline.com/doi/full/10.1080/09640568.2022.2079078
[2] https://doi.org/10.1016/j.enpol.2007.09.010

as well as the flora and fauna associated with forests. In response, it is noted that forestry which will be felled as part of the proposed project clearance works will be replanted. As Chapter 2 (Description of the Proposed Project) and Appendix 2-7 (Forestry Report) of the submitted EIAR describe, when applying for a felling license from the Forest Service at least an equivalent size to that which was felled must be replanted. This will ensure that there will be no net-loss of forestry for the proposed project. The ecological effects associated with the felling are discussed in Chapter 6 (Biodiversity) of the submitted EIAR as well as Section 6 of this report below. In general, coniferous forests are not very supportive of a wide range of native species and cause some hydrological issues with acidification. The clearfelled areas on the other hand will benefit from an increase in native flora and fauna (resulting in a net-gain for biodiversity in these areas), while catchments will benefit from the lower density of coniferous forestry.

2.3 Excavated Material

One submission suggests that the EIAR does not state where the stone and fill material will be excavated from for the proposed project, and that potential environmental effects of the excavation have not been assessed. Section 2.8.8 of Chapter 2 (Description of the Proposed Project) of the submitted EIAR describes that this material will be excavated from the proposed onsite borrow pits. Only small volumes of aggregate will be sourced from external quarries to minimise traffic, noise and dust for the local road network. The potential effects of the rock excavation have been assessed throughout the EIAR, for example Chapter 8 (Land, Soils and Geology), Chapter 12 (Noise & Vibration) and Chapter 14 (Air Quality and Climate) of the submitted EIAR. None of these chapters identified likely significant effects from this activity.

2.4 Decommissioning

One submission raised a concern on how the wind farm infrastructure will be treated at the end of life. Section 11.4.4 of Chapter 11 (Material Assets) of the submitted EIAR details that the proposed project components will be dismantled and removed using conventional construction equipment that minimises any potential impact and will be recycled or disposed of safely. The decommissioning phase will have the potential to produce municipal waste (site office, canteen), wastewater (site welfare facility) and demolition waste (wood, packaging, metal, etc.) which will need to be processed at local waste processing facilities. The quantities of these wastes are anticipated to be larger than other phases (considering the removal of turbines, met mast and other structures), however these are largely composed of metal and other recyclable materials which will be brought to specialised facilities for processing/recycling such items. Recycling of turbine waste is discussed in Section 11 of this document below. Any other wastes (such as oils) will be collected by an appropriately licensed waste collector. There would be a potential short-term imperceptible neutral effect on local waste services as the additional waste will add to the baseline waste volumes being processed, although there will be an associated economic benefit to local waste companies in processing this.

2.5 Topography and Ground Conditions

One submission notes that the topography of the proposed wind farm site includes a number of deeply incised river valleys. While it is noted that parts of the proposed wind farm site are steeply sloped, the proposed infrastructure design has accounted for this, and it has avoided any

areas in which construction is not possible. The proposed site access tracks have been designed with a slope that will allow normal transport vehicles to move turbine components around the proposed wind farm site. The submission also raises concerns that the ground conditions on the proposed wind farm site do not provide certainty that they will support the proposed turbines, resulting in a risk of turbine collapse. The site investigation work does not suggest that the ground conditions are unsuitable for constructing wind turbines. The Peat Stability Risk Assessment (PSRA), which is available as Appendix 8-1 of the submitted EIAR, concludes that there is a low or negligible risk of ground instability for the proposed turbine locations.

2.6 Land Use

It is suggested in one submission that the consenting of the proposed project would preclude the use of the proposed wind farm site for other more environmentally suitable and less damaging activities. Based on the evidence from other locations of existing wind farms around Ireland, the proposed project can co-exist with a list of other land uses such as forestry, agriculture, habitat management for the benefit of biodiversity, tourism amenity, solar energy, battery energy storage systems, etc. This means that renewable energy production can exist alongside other beneficial activities.

2.7 Grid Connection

Although the current planning application (i.e. the proposed development) does not include the grid connection route (GCR) associated with the broader proposed Scart Mountain Wind Farm project, the submitted EIAR does include this within its assessment, as described in Section 2.1 of Chapter 2 of the EIAR (Description of the Proposed Project). As a result, the observations include a small number of comments relating to the GCR which are covered under the headings below.

2.7.1 Alternative options

Transport Infrastructure Ireland (TII), who are responsible for the national road network in Ireland, suggest that a full assessment of the grid connection options be carried out, including the use of private lands, in order to ascertain that the proposed route is indeed the most appropriate route. They highlighted concerns regarding potential damage to the road network from cable installation. The construction methodology for works on the roads is provided in Appendix 2-5 of the submitted EIAR (Grid Connection Construction Methodology). The implementation of this methodology will mitigate the risks concerning damage to the road network.

The comparison of alternatives was carried out in Section 3.3.3.3 of Chapter 3 of the submitted EIAR (Reasonable Alternatives). This looked at four alternative grid route options, and it demonstrates that the chosen grid route was the most appropriate option having regard to the effects of the project on the environment (i.e. Population and Human Health, Traffic, etc.),

These grid route options were described as:

- Alternative grid connection routes mostly via the N72 (see black and pink in Figur below)
- Alternative grid connection routes via local/regional roads from the eastern side of the proposed wind farm site (see orange in Figur below)
- Alternative grid connection routes – short sections (see light blue, grey and dashed red in Figur below)
- Alternative grid connection routes – (see turquoise in Figure 2-1 below)

It should be noted that Figure 3-5 was incorrectly labelled as Figure 3-4 in the EIAR due to a typographical error, and the routes did not all display clearly in the map. They are shown more clearly in Figure 2-1 below. The findings of the assessment however were unaffected by the figure issue and they remain valid. The proposed grid connection route is the most appropriate option for the route.

While the proposed grid route does utilise the national road network on its final approach to the existing Dungarvan 110kV substation, this is restricted to only approximately 220m in length. The Applicant has chosen a grid route that largely avoids the national road network as a result of the preferences of TII, limiting it to the shortest possible distance. The Applicant did seek to obtain consents for a cross-country cable option to access the substation but this was not possible as an agreement could not be reached with a key landowner. Therefore, the only way that any cables can access the existing Dungarvan 110kV substation is within the national road network.

TII highlighted the fact that there are other proposed projects proposing to utilise the national road network for their cables in this area. The Applicant is aware of this and the reference that TII make to Dyrick Hill Wind Farm (ACP Case ref. PA93.317265) can now be disregarded as that has since been refused planning permission by ACP.

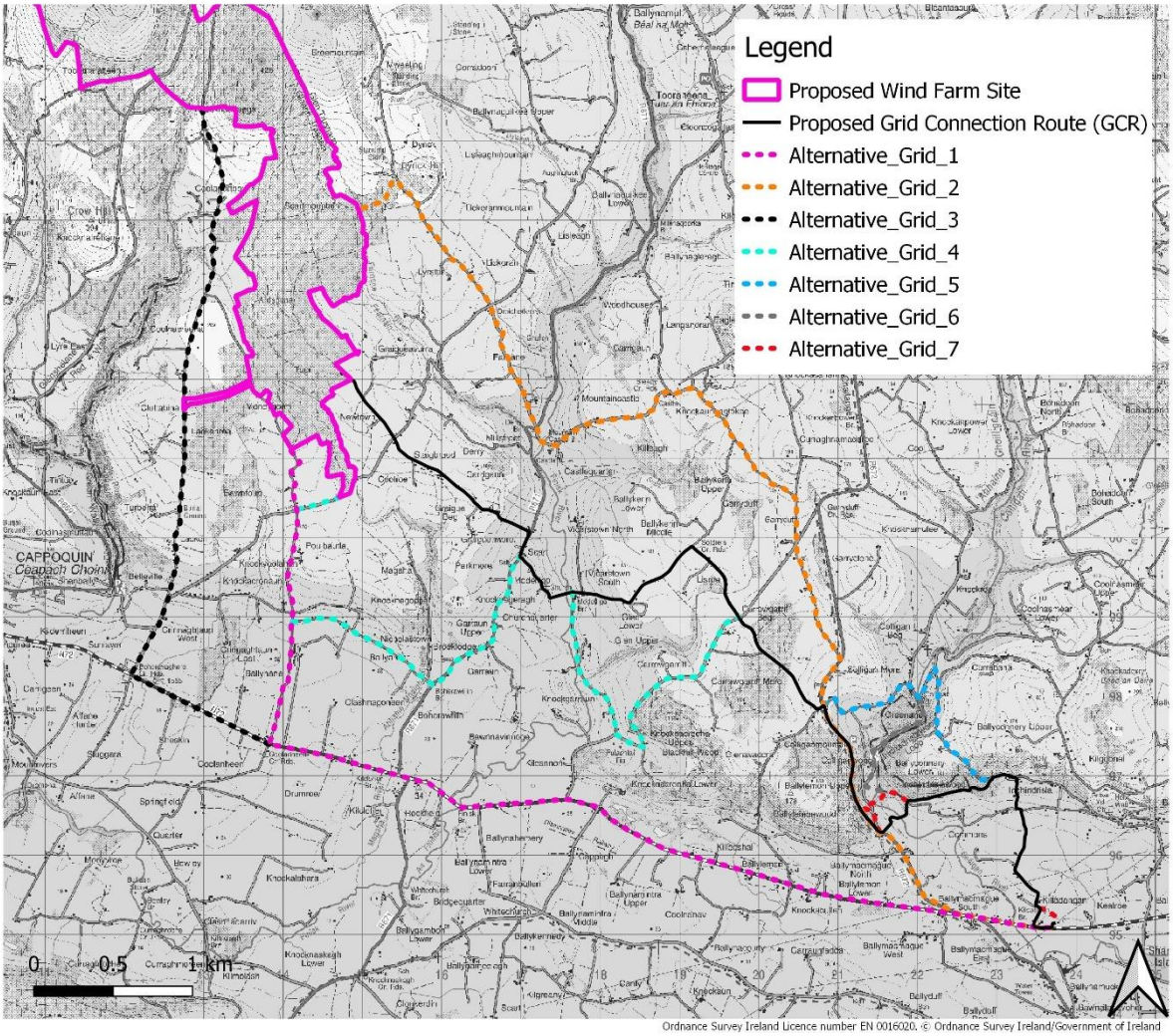


Figure 2-1 Updated version of Figure 3-5 in Chapter 3 of the Submitted EIAR (Consideration of Alternatives) to provide clarity on the alternative routes being assessed. Title: Alternatives to the proposed Grid Connection Route

2.7.2 Construction methodology

One observation stated that there was no information included in the application regarding the construction methodology for the proposed GCR. The Applicant wishes to point out that this was provided in detail in Appendix 2-5 of the submitted EIAR (Grid Connection Construction Methodology).

2.7.3 Internal Cabling

One observation notes that an exact length of internal site cabling was not provided in the EIAR. Internal cabling will connect each wind turbine to the substation and control building. It is anticipated that the internal cabling will be located along many site access tracks, with a total length of approximately 16.7 km. This is described in some detail in Sections 2.8.4 and 2.8.8.4 of Chapter 2 of the submitted EIAR (Description of the Proposed Project).

2.7.4 Underground Services

Uisce Éireann highlighted that the proposed GCR works may interact with some of their assets in the ground along the route. This is acknowledged and understood by the Applicant, and the submitted EIAR assumed that this would be the case. The construction methodology for works near such services (in addition to cables) is provided in Appendix 2-5 of the submitted EIAR (Grid Connection Construction Methodology). The implementation of this methodology will mitigate the risks concerning Uisce Éireann assets and any other underground services.

2.7.5 Community Disruption

One observation raises concern that the proposed grid connection route runs through Modeligo, and wondering how it would impact the community there. The works associated with the grid connection route will be transient in nature and will only occur at any one place for a matter of days or at most weeks. This would be similar to other works for underground services such as water or power lines. Once constructed, there would be no impact to the community, with no noise, traffic, or other considerations associated with the operational cable, and there will be no disturbance to the local residents. These cables are installed in roads around Ireland without affecting local communities negatively.

2.7.6 Grid capacity

One observation claims that the national grid cannot accept any more wind farm projects, and that ACP should delay the project for a number of years to allow for the upgrade of the national grid. The existing 110kV Dungarvan substation does have the capacity to accommodate the power from the proposed project, and the Applicant has confirmed this is the case with Eirgrid. Under the Climate Action and Low Carbon Development Act 2021, all 'relevant bodies' must perform their functions in a manner consistent with the National Climate Objective and the Climate Action Plan.Given Ireland's binding climate targets, delaying the construction of the proposed project would directly undermine these obligations and jeopardise compliance with national and EU climate targets.

3. POLICY, PLANNING AND DEVELOPMENT CONTEXT

Any of the observations that had comments or raised issues relating to Policy, Planning and Development Context are addressed here. The comments have been dealt with under a number of headings below which cover the topics raised in the observations. The EIAR chapter and this response were prepared by TOBIN.

3.1 COUNTY DEVELOPMENT PLAN POLICY – WIND ENERGY DESIGNATIONS

Many of the observations raised concerns that the proposed wind farm site is located mostly in an area that is designated as unfavourable for wind energy in the Waterford City and County Development Plan 2022-2028. A full discussion is provided in relation to this in the previously submitted Planning Statement which accompanied the planning application. In summary, it demonstrates "*the strong suitability of this site for wind farm development. In doing so, it calls into question the validity of the Waterford City and Council wind energy map zoning, which we believe is not representative of the proposed development site*". This is demonstrated in the Planning Statement under landscape characterisation, and conflicting development plan policies, in addition to other points.

In terms of landscape characterisation, the planning statement explains that the proposed site occupies a transitional foothill landscape between productive farmland and upland moorland. These landscapes are widely recognised as suitable for wind energy development due to:

- Broad-scale landform and land use patterns that can accommodate turbine scale.
- Low population density enabling compliance with setback requirements.
- Existing anthropogenic uses (forestry, overhead cables) reducing sensitivity compared to pristine uplands.

Expert assessment concludes that while the project introduces a dominant feature locally, it will not result in significant residual landscape or visual effects. The Waterford CDP's blanket classification of the entire uplands and foothills as "Most Sensitive" is overly simplistic and inaccurate, failing to distinguish between highly sensitive core uplands and less sensitive foothills. Further discussion relating to Landscape and Visual is provided in Section 12 below.

Points relating to conflicting development plan policies are discussed in the planning statement but can be summarised with the following:

- The site is designated as an "Exclusion Zone" under the Waterford CDP 2022–2028, whereas under the previous plan (2011–2017) it was "Open to Consideration."
- The updated wind energy map:
    - Was adopted before legally binding sectoral emissions ceilings (July 2022) and Climate Action Plans 2023/2024.
    - Reduced viable land for wind development from 69.78 sq.km to 62.48 sq.km, despite national targets requiring a doubling of onshore wind capacity.
- This approach is inconsistent with:
    - National Climate Action Plan obligations (9GW onshore wind by 2030).
    - EU law (RED III Directive and Regulation 2022/2577) which presumes renewable projects are of overriding public interest.

- Under Section 37G(6) of the Planning and Development Act, ACP may grant permission even in material contravention of a CDP. Case law confirms the Board is only required to "have regard" to local policy, not slavishly comply.

A number of other points were discussed in the Planning Statement also which would demonstrate that the proposed project is appropriately located for a wind farm, including:

- Technical and environmental attributes:
  - Wind speeds of 6.5–8.8 m/s at 100m height.
  - Large contiguous area (>900 ha) with little peat.
  - Available grid capacity and proximity to Dungarvan substation.
  - Good road access for construction.
- Biodiversity Management Plan provides 326.87 ha of habitat enhancement and restoration with a view to offset biodiversity and ornithological impacts.
- Climate and energy urgency:
  - Ireland is significantly off track to meet carbon budgets and renewable targets.
  - This single project could contribute ~2% of the additional onshore wind capacity required nationally by 2030.

The Planning Statement (Section 3) also discusses the legal basis by which ACP can contravene the county development plan by granting permission for the proposed project. In summary, under Section 37G(6) of the Planning and Development Act 2000 (as amended), ACP has clear statutory authority to grant permission for Strategic Infrastructure Development even where the proposal materially contravenes the County Development Plan. The Board is required only to "have regard" to the plan, not to comply with it, and case law confirms this discretion. In addition, the Climate Action and Low Carbon Development Act 2021 imposes a duty to act consistently with national climate objectives and the Climate Action Plan, which strongly supports prioritising national and EU renewable energy policy over outdated local zoning.

The local wind energy designation is also discussed further in Section 13 (Landscape and Visual) below.

3.2 Environmental Impact Assessment to be Carried Out by ABP

Two submissions requested An Bord Pleanála (now ACP) to carry out an independent Environmental Impact Assessment (EIA).

In response, as set out in the Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Local Government and Heritage, 2018), ACP are the designated competent authority responsible for the examination and analysis of the submitted EIAR and other relevant information, to allow for a reasoned conclusion on the likely significant effects of the proposed project on the environment. ACP is required to carry out EIA as part of the consenting process. The Applicant's submitted EIAR and application documentation, along with submissions made during the statutory consultation period, will inform this EIA.

3.3 OFFSHORE

One submission suggests that wind energy should be developed offshore instead of onshore, as it says it would have reduced impacts there. In the context of Ireland's energy transition, onshore wind development remains a critical pillar alongside offshore wind and solar in achieving the national Climate Action Plan (CAP) targets and the 2030 binding climate targets. While Ireland possesses vast offshore wind potential, particularly along the Atlantic coast, the timeline for large-scale offshore deployment is lengthy due to complex consenting processes, grid infrastructure requirements, and high capital costs. In contrast, onshore wind is a mature, cost-effective, and readily deployable technology that can deliver significant renewable generation capacity in the short to medium term. The Climate Action Plan 2025 commits Ireland to achieving up to 80% renewable electricity by 2030, with a target of 9 GW of onshore wind, 8 GW of solar, and at least 5 GW of offshore wind. Achieving this balanced portfolio is essential for maintaining grid stability, ensuring energy security, and meeting interim emissions reduction milestones on the path to net zero by 2050. Onshore wind also offers important regional economic benefits, supporting rural communities through investment, job creation, and community benefit funds. Furthermore, its generation profile complements solar production, providing renewable electricity during darker and windier periods when solar output is low. Without continued onshore wind development, Ireland risks both missing its 2030 targets and increasing reliance on fossil fuels during the offshore wind build-out phase.

3.4 RESEARCH

Two submissions suggest publications for ACP to refer to which describe negative impacts associated with wind energy. These referenced publications include:

- Evans A., 2021. Wind turbines and adverse health effects: Applying Bradford Hill's criteria for causation by Anne Dumbrille, Robert McMurty, and Carmen Krogh - 'Big noises: Tobacco and Wind'. Environ Dis 2021;6:109-10
- Evans A., 2017. Environmental Noise Pollution: Has Public Health Become too Utilitarian?, Open Journal of Social Sciences, 5, 80-107. doi: 10.4236/jss.2017.55007

It should be noted that these are not considered to be high-quality scientific publications. The first appears to be an editorial which is not peer-reviewed, while the second is published by Scientific Research Publishing (SCIRP), a publisher mentioned in the Beall's list of potential predatory journals and publishers[3], which is a red flag that the publisher (and consequently all their journals) might have issues.

3.5 SUGGESTED PLANNING CONDITIONS

There are a number of suggested planning conditions put forward by the Development Applications Unit, Department of Defence, Health Service Executive, and the Irish Aviation Authority. The applicant can confirm they are willing to accept these conditions as part of a grant of permission for the proposed project.

[3] https://beallslist.net

3.6 Future Planning Applications

Five submissions raise concern that the proposed project would preclude the submission of future planning applications for housing in the area immediately around the proposed wind farm. All extant planning permissions and live planning applications which were submitted at the time of writing the EIAR had been included in the assessments. It is not known where future planning applications will be made, but this should not be considered as a valid reason not to grant permission for the proposed project, given the current climate emergency, the national climate objective and the need to construct more renewable energy projects to achieve the binding 2030 target of 80% of electricity from renewable sources. Without a formal application, in line with best practise guidelines for environmental assessment as listed in Chapter 1 (Introduction) of the EIAR, it is contended that at this stage this cannot be considered in relation to the proposed project.

3.7 Validity of the Wind Energy Development Guidelines 2006

Submissions have been made stating that the WEDGs 2006 is out of date and unfit for purpose. In response, the design of the proposed wind farm was prepared fully in accordance with the WEDGs 2006, which remain the operative planning guidelines. In addition, the following guideline documents have been consulted with respect to the wind farm design:

- DoHPLG, Draft Revised Wind Energy Development Guidelines (December 2019);
- Irish Wind Energy Association, Best Practice Guidelines for the Irish Wind Energy Industry 2012;
- Irish Wind Energy Association, Community Engagement Strategy March 2018; and
- European Commission, Guidance document on wind energy development and EU nature legislation (November 2020).

The provisions set out in the Draft 2019 WEDGs have been considered in the design of the proposed project in terms of noise, shadow flicker, visual amenity setback, environmental assessment, consultation obligations, community dividend and grid connections. The application of the draft guidelines is discussed in more detail in individual Chapters in the submitted EIAR.

3.8 Previous Wind Farm Refusals

Reference is made to the refusal of permission for Dyrick Hill Wind Farm (ACP ref. no. PA93.317265) through a number of submissions, with one observation noting a refusal of a wind farm in the region in 2001, suggesting this sets a precedent for the area. Previous refusals for wind farm developments in the area do not, in themselves, provide a substantive basis for refusing the current application. Each planning application must be assessed on its own merits, in accordance with the site-specific considerations, and the current national and regional context. Since the time of the previous refusals, there have been significant developments in Ireland's renewable energy policy landscape, including updated targets under the Climate Action Plan, the National Energy and Climate Plan, and the strengthened commitment to achieving net zero emissions by 2050. These policy shifts place a clear emphasis on the urgent

need to facilitate renewable energy infrastructure, including appropriately sited onshore wind developments. Furthermore, the current proposal has been designed with careful consideration of the reasons for previous refusals, incorporating enhanced mitigation measures, updated environmental assessments, and refined layout and design elements to address prior concerns. As such, earlier refusals do not predetermine the outcome of this application, which should be judged in light of current planning policy, technological advancements, and Ireland's pressing need to expand renewable energy generation capacity.

3.9 Property Values

Five submissions raised concerns around the potential for property devaluation should the proposed project be constructed. Section 5.4.2 of Chapter 5 (Population & Human Health) of the submitted EIAR which provides an overview of the various studies carried out across the UK and the USA on any linkage between house property prices and the presence of wind farms. There have been no Irish studies completed on this to date, and the closest study in terms of locality would be the 2016 Scottish study which found no evidence of negative impact from wind turbines on house prices. The location and siting of the turbines has modelled the location of existing houses to maintain a minimum set-back distance of >800m from the nearest property.

Further to the research mentioned in the EIAR, another recent (2023) US based meta-analysis combining 720 estimates from 25 studies notes that some previous research[4] may have overestimated negative effects due to publication bias and methodological limitations.

Based on the research discussed in the submitted EIAR and above, the proposed project will not significantly impact on property values in the area.

[4]https://doi.org/10.1007/s10640-023-00809-y

4. POPULATION AND HUMAN HEALTH

Any of the observations that had comments or raised issues relating to Population and Human Health are addressed here. The comments have been dealt with under a number of headings below that cover the main topics raised in the observations. The EIAR chapter and this response were prepared by TOBIN.

4.1 HEALTH EFFECTS

Fifteen submissions raised concerns surrounding general health effects to the population as a result of the proposed project, and wind energy in general.

The health assessment conducted as part of the EIAR concluded, as highlighted in Section 5.4.3 of Chapter 5 (Population and Human Health) that for the construction phase of the proposed project, there will be no significant effects. Section 5.4.3 of the submitted EIAR also assessed the potential human health effects that may occur during the operational phase. The following areas were assessed;

- Wind turbine health effects,
- Noise and vibration,
- Sleep disturbance,
- Infra-sound,
- Electromagnetic interference,
- Shadow flicker,
- Psychological health and health benefits.

It was concluded for each of these items that no significant, adverse human health effects will occur as a result of the proposed project following the implementation of the proposed mitigation measures.

In relation to positive health effects, the contribution of the proposed project to a decrease in reliance on fossil fuel combustion will have a moderate to significant positive long-term effect on the health and well-being of the general population. In their observation, the Health Service Executive noted that the health benefits outlined in the EIAR can be extended to the global population. The offsetting of Green House Gas emissions will have a positive transboundary effect on population health.

Section 5.4.3 of Chapter 5 (Population and Human Health) of the EIAR provided an overview of relevant research including a review of studies from the UK, USA, Canada, Europe and Australia, whereby it was found that wind farms have no associated direct pathological effects on human health, and any potential impact can be minimised by following planning guidelines. Notable studies discussed in the EIAR chapter include a 2014 meta study by Knopper and another 2014 study by Health Canada which both found no links between wind farms and numerous health conditions.

Some submissions raised concerns surrounding the potential for shadow flicker to affect human health. The UK Wind Energy Guidance Note, prepared in the UK for the Renewables Advisory Board and Department for Business, Enterprise and Regulatory Reform (BERR) in 2007, addressed the question whether the shadow flicker from wind turbines can cause effects on

human health. It was found that the frequency at which photosensitive epilepsy may be triggered generally is between 2.5 and 30 flashes per second (hertz). Most commercial wind turbines in the UK rotate at between 0.3 and 1.0 hertz, giving health effects arising from shadow flicker little potential to occur. The more recent UK guidance (Planning practice guidance for renewable and low carbon energy. DCLG, 2013) does not mention any potential health impacts from shadow flicker. Furthermore, the Applicant has committed to 'near-zero' shadow flicker, see Chapter 10 of the submitted EIAR for further details. Therefore, there will be no potential effects relating to shadow flicker from the proposed project.

In addition to the above, a longitudinal study in Germany by *Krekel et al.* in 2025 found no evidence of negative effects on general, mental, or physical health, nor on doctor visits or suicide rates, in populations living near wind turbines[5].

The potential for the proposed wind farm to affect people with autism was raised by five submissions. The proposed project has committed to a near-zero shadow flicker (see chapter 10 of the submitted EIAR) which will virtually eliminate that potential effect from dwellings in the surrounding areas through the use of screening measures and turbine control mechanisms. The proposed project will also operate within the current WEDGs 2006 for noise (see Chapter 12 of the submitted EIAR for further information) and as such any noise at or within dwellings will not reach excessive levels. It is worth noting that climate change itself is noted in recent literature as a potential issue for those with autism spectrum disorder[6] as severe weather events can disrupt daily routines and the proposed project will contribute to tackling climate change.

4.1.1 Noise

Four submissions raised the potential impact of wind turbine noise on human health. Chapter 12 of the submitted EIAR (Noise and Vibration) demonstrates that the proposed project can operate within the noise criteria derived from the relevant guidance (i.e. the current WEDGs 2006) and accordingly will not result in any significant effect on the amenities of any sensitive receptors, and therefore on the health of local residents. Noise is discussed further within Section 12 of this document and Chapter 12 (Noise and Vibration) of the submitted EIAR includes an impact assessment of noise and vibration from the entire proposed project, including construction phase works and haul route traffic, as well as the operational wind turbines.

A large and growing body of scientific research has examined the potential health impacts of wind turbines on people living in nearby residential areas. The most consistent finding across high-quality peer-reviewed studies is that wind turbine noise annoyance is particularly linked with attitudes toward wind energy[7]. However, annoyance is a subjective response and not a direct health effect. Of note, it found that when people are exposed to claims attributing health issues to wind turbine noise, this was found to play a role in their own subsequent complaints about wind turbine noise[8]. A major study by Health Canada in 2016[9] found no relationship between wind turbine noise (up to 46 dBA) and self-reported health effects, sleep disorders, or

[5] https://cep.lse.ac.uk/pubs/download/dp1950.pdf
[6] https://www.e3s-conferences.org/articles/e3sconf/pdf/2025/08/e3sconf_eenviro2024_04001.pdf
[7] https://www.sciencedirect.com/science/article/abs/pii/S0013935118306145?via%3Dihub
[8] https://www.sciencedirect.com/science/article/abs/pii/S0973082622000898?via%3Dihub
[9] https://pubs.aip.org/asa/jasa/article/139/3/1443/910730/Exposure-to-wind-turbine-noise-Perceptual

perceived stress. A 2019 publication by Freiberg *et. al.* which carried out a review of 84 no. publications found that in higher quality studies, wind turbine noise was not associated with restricted quality of life, sleep disturbance, and anxiety and/or depression, while any contrasting findings generally came from lower quality studies[10]. A 2021 study (by Turunen *et. al.*[11]) in Finland, which considered wind turbine noise, found that the prevalence of symptoms such as headaches, sleep disturbances, and hypertension was similar regardless of proximity to wind turbines, and no consistent associations were observed between exposure and these health problems.

Four observations had concerns relating specifically to sleep. A systematic review and meta-analysis by Liebich *et. al.* from 2020[12] concluded that wind turbine noise does not significantly affect objective sleep measures such as sleep onset latency, total sleep time, or sleep efficiency. A 2024 study by Ellenbogen *et. al.*[13] found that noise from wind turbines measured outside a sensitive receptor, up to 46 dBA (though no upper limit is established), poses no risk to human sleep (this relates to audible and low-frequency noise). A 2016 publication by the Ministry of the Environment in Baden-Württemberg, Germany, determined that infrasound produced by wind farms remains below the threshold of human perception, and there is no scientific basis for health concerns at these levels.

Five observations raised concerns relating to possible infrasound impacts. Further to the publications discussed in Chapter 5 of the submitted EIAR (Population and Human Health), a 2023 study by Marshall *et. al.*[14] which used simulated infrasound found no evidence that 72 hours of exposure to simulated wind turbine infrasound in double-blind conditions perturbed any physiological or psychological variable. This study measured the effects of infrasound alone on sleep and suggests that infrasound is unlikely to be a cause of ill-health or sleep disruption, although it notes that this observation should be independently replicated with more subjects.

Another laboratory study by Smith *et. al.*[15] from 2020 which exposed people to artificial wind turbine noise while sleeping found that there was no effect on autonomic activation, arousals, awakenings, salivary cortisol, sleep onset latency, sleep time, or deep sleep. It did find that Rapid Eye Movement (REM) sleep latency and time did differ slightly, but of note this study only assessed sleep during a single night of simulated exposure, and the author has admitted a number of key study limitations including:

- The study group had a self-selection bias as most participants in the exposed group had previously complained about wind turbine noise and had negative perspectives on wind energy,
- It was not possible to blind the participants to the experimental conditions so this may have influenced the outcomes.
- The participants were allowed to go about normal life each day including consumption of caffeine. The daily activities of the participants were not monitored or recorded.

[10] https://www.sciencedirect.com/science/article/pii/S0013935118306145
[11] https://www.sciencedirect.com/science/article/pii/S016041202100043X?via%3Dihub
[12] https://onlinelibrary.wiley.com/doi/10.1111/jsr.13228
[13] https://academic.oup.com/sleep/article/47/2/zsad286/7377617
[14] https://ehp.niehs.nih.gov/doi/10.1289/EHP10757
[15] https://academic.oup.com/sleep/article/43/9/zsaa046/5811422?login=false

- Participants taking medicine that might impact on sleep were not excluded (6% of participants)
- Participants self-enforced the time of going to sleep
- Participants self-reported their habitual sleep, so their sleep in the preceding nights may have affected the nights of the study
- There may have been non-adherence regarding daytime napping with participants
- Previously shown stronger responses to noise in the laboratory means that the findings of this study may be overestimating the effects of wind turbine noise on sleep.

The study by Smith *et. al.* (2020) also assumed a noise level of 45dB from the wind turbines using worst case noise conditions, while the currently proposed project will adhere to a 43dB limit when measured outside the home. This is discussed in further detail in Chapter 12 of the submitted EIAR (Noise and Vibration).

4.2 Set-Back Distances

One submission (from Julia Gorodecky and others) notes that a family living within 2km of the proposed project is absent from Figure 5-3 of the EIAR. Co-ordinates for this home are not provided by the observer. In response to this we note that this home may be located 2km from the proposed wind farm site boundary however not within 2km of the proposed turbines which is the radius used within Figure 5-3. The proposed project has been designed in accordance with the Government's 2006 WEDGs, which are the relevant and available best practice guidelines for wind farm design, and with cognisance of the Draft Revised 2019 WEDGS. The 2006 WEDGs set out a minimum setback requirement of 500 metres from turbines to sensitive receptors for noise. The Draft Revised WEDGs (2019) recommend a minimum setback distance from a turbine to the curtilage of a residential property equal to 4 times the tip height, or with a mandatory minimum setback of 500 metres, whichever is largest. In respect of the proposed project, the closest sensitive receptor curtilage (i.e. measuring from the nearest boundary of the garden / yard immediately surrounding the house) is located >800m from the nearest proposed turbine location which is in excess of the minimum setback requirements set out in the 2006 WEDGs and Draft Revised WEDGs (2019).

4.3 Local contamination

Four submissions have expressed concern about the potential release of toxic compounds, particularly Bisphenol A (BPA) and microplastics, from wind turbine blades. These concerns mostly relate to a 2021 non-peer reviewed publication by "The Turbine Group" which incorrectly extrapolates data from peer-reviewed research carried out by Pugh & Stack from the University of Strathclyde (also in 2021) to suggest that each wind turbine can shed 62kg annually in microplastics. One of the authors of the original research, Professor Margaret Stack (Tribology Group, University of Strathclyde) has responded to this document stating that this figure "needs to be refined downwards quite significantly" as the experiment was carried out to simulate worst-case scenarios on uncoated material at a centimetre sized blade segment in a laboratory, and the extrapolation to the real-world and full sized turbine was incorrectly carried out.

More recent scientific research which has been peer-reviewed and published by Mishnaevsky *et. al.* in 2024 indicates that wind turbines do not shed significant amounts of microplastics or BPA into the environment[16]. The primary concern regarding microplastic release from wind turbines centres on blade surface erosion, a process that occurs over time due to environmental exposure. However, quantitative estimates show that the mass of plastic eroded from wind turbine blades is relatively low—ranging from 8 to 50 grams per year per blade for onshore turbines. The Mishnaevsky study scales this to the national level for Denmark, where the total annual plastic loss from all wind turbine blades is about 1.6 tons, which is an order of magnitude less than the microplastic emissions from sources like footwear, and three orders of magnitude less than those from tyre wear.

Studies of microplastic pollution in and around wind farm areas further support these findings. For example, a 2018 peer-reviewed scientific publication by *Wang et. al.* found microplastic concentrations in water and sediment samples collected from an offshore wind farm were actually lower than those found outside the wind farm area, suggesting that wind turbines are not a major source of microplastic pollution in these environments[17]. The detected microplastics were mainly attributed to other sources, such as garments and ropes, rather than turbine materials.

Wind turbines are designed to withstand severe weather over long periods of time. They have a non-toxic protective coating which minimises leading edge erosion and minimises the risk of damage and erosion to the main structural material of the blades. In the unlikely event that this protective coating is compromised, the blade structural material contains only very small amounts of residual BPA. The shed material is also mostly limited to the paint and non-toxic coatings on the turbines. Newer turbines also have more durable coatings than older ones and the technology in this has improved over time meaning that modern turbines can operate for several decades in normal circumstances without any significant issues. Turbine components are regularly inspected to assess for any damage and in the event that such damage was found to occur the turbine component would be repaired or in an extreme case, replaced. Protective tapes can be applied to turbine blades in the event that leading edge erosion is becoming an issue for any given turbine.

Based on the above evidence, the proposed project will not result in a significant effect in terms of contamination of microplastics or BPA, and will be similar to any other Irish wind farm in that regard.

4.4 Connection to the Environment and Public Perception

One comment suggested that the presence of a wind farm would disconnect people in the area from nature and the local environment. The assertion that wind farms disconnect people from nature and the environment is not supported by research. On the contrary, multiple peer-reviewed studies demonstrate that wind farms do not inherently diminish people's connection to nature, and in many cases, they can actually enhance environmental awareness and place attachment. A number of publications relating to public and tourist perceptions of wind turbines

[16] https://www.mdpi.com/1996-1073/17/24/6260
[17] https://www.sciencedirect.com/science/article/abs/pii/S0025326X18300614?via%3Dihub

were discussed in Chapter 5 of the submitted EIAR (Population and Human Health). A number of additional studies are discussed in the following paragraphs.

A comprehensive study by Penneman et al. (2022) examining public opinion on Belgium's offshore wind farms found that acceptance increased markedly after turbines became operational[18]. This research documented a significant shift from pre-construction skepticism to post-construction acceptance, suggesting that direct experience with wind farms actually strengthens rather than weakens people's relationship with their environment.

Frantál et al. (2017) conducted on-site evaluations at Iceland's proposed Búrfell wind farm and found that perceived compatibility between turbines and landscape was the dominant predictor of acceptance[19]. Importantly, the study showed that turbines could coexist with perceptions of beauty and wildness, directly contradicting claims of environmental disconnection. Participants who viewed the landscape as open and resilient were more likely to accept turbines as compatible with the natural setting.

López-Martínez's (2023) analysis of Spanish Mediterranean landscapes found that wind turbines were not generally perceived negatively, and in some degraded landscapes, turbines actually improved scenic ratings[20]. This research demonstrates that turbines can enhance rather than detract from landscape aesthetics, particularly when carefully integrated into the environment.

4.5 TOURISM

Concerns have been raised in 15 no. observations regarding the potential impact of the proposed project on tourism and recreational amenities in the area.

Construction-related impacts, such as noise, visual changes, and temporary access restrictions, are expected to result in slight, short-term effects on tourism in the area of the Knockmealdown Mountains surrounding the proposed project site. These effects will be mitigated where possible through scheduling, signage, and communication with local stakeholders. For example, the 1.5 km section of the GCR through Coillte forestry is expected to take 6–8 weeks, after which the route will reopen for public use. Informational signage will be placed at the site in advance of and during the works to inform the public of any access restrictions.

During the operational phase, the EIAR concludes that the proposed project will have a slight, neutral effect on tourism and recreation.

The Knockmealdown Mountains are recognised as a regional tourism destination, offering scenic drives, walking routes, and cultural experiences such as St. Declan's Way and Mount Melleray Abbey.

In relation to Mount Mellary Abbey, it is located approximately 2.5 km from the proposed wind farm site. While the Abbey closed in January 2025, which may result in a change to its role as a tourism destination, we also recognise that the Waterford County Development Plan (as referenced in Fáilte Ireland's submission) identifies Mount Melleray as a location with potential for future tourism development, including its role as a trailhead and outdoor hub along St.

[18] https://doi.org/10.1080/09640568.2022.2079078
[19] https://doi.org/10.1515/MGR-2017-0020
[20] https://doi.org/10.1007/s10980-023-01698-8

Declan's Way. Chapter 13 of the submitted EIAR (Landscape and Visual) concludes that the overall magnitude of visual impact on Mount Melleray is medium-low. Although wireframe modelling indicates potential visibility of up to 13 turbines, many will be screened by terrain and vegetation, with only four turbines clearly visible from peripheral views on the Abbey lands. These views are not part of the principal outlook and are consistent with the surrounding landscape, which includes forestry and agricultural land uses.

St. Declan's Way, a heritage walking route, runs approximately 500 metres from the red line boundary of the proposed wind farm site. While the route is in proximity to the development, it does not intersect directly with the site. Any temporary impacts during construction — such as noise or visibility of machinery — will be short-term and carefully managed through appropriate health and safety measures, signage, and alternative route suggestions.

One comment from Fáilte Ireland highlighted the intersection of the proposed project with a local walking route, the **Knocknasheega Loop**, a trail listed on the AllTrails website[21].

In order to mitigate this, the project will implement appropriate measures during the construction phase in line with best practice and to ensure the health and safety of all members of the public. These measures will include clear signage in advance of and during works to inform walkers of temporary closures or diversions, and with alternative route suggestions to nearby trails and amenities to minimise disruption.

It is worth noting that, according to the All Trails listing for the Knocknasheega Loop[22], the trail is described as quiet and it being unlikely to meet many people there. This suggests that the trail is not heavily used, and any temporary disruption during construction is unlikely to significantly affect tourism or recreation in the area, particularly considering the number of alternative options that are available in the local area, many of which are mentioned in Chapter 5 of the submitted EIAR (Population and Human Health). Following construction, the affected route will be fully reinstated and reopened for public use, ensuring continued access to local walking and hiking amenities. The project developer remains committed to minimising disruption to locals and tourists alike and maintaining the quality of the recreational experience in the area.

With regard to any general concerns for tourism, the findings of a number of studies are discussed in Section 5.4.2.2 of Chapter 5 of the EIAR (Population and Human Health) and these indicate that tourists generally are not affected by the presence of wind farms. Further to this, research published in 2023 from rural Sweden found that many tourists were "*undisturbed by the wind turbines in the landscapes they observed*," and some even found them aesthetically pleasing or simply did not notice them[23]. While some tourists could imagine being disturbed in other contexts, the actual presence of turbines did not negatively affect their experience in the studied areas. Another study of visitors to a Portuguese countryside site with medieval architecture found that a clear majority accepted the presence of wind turbines adjacent to it, and importantly, "*virtually all of them stated that these facilities had no impact on their choice of destination*"[24]. This suggests that, even in areas valued for their scenery and cultural significance, wind farms did not deter tourists.

[21] https://www.alltrails.com/trail/ireland/county-waterford/knocknasheega-loop
[22] https://www.alltrails.com/trail/ireland/county-waterford/knocknasheega-loop
[23] https://doi.org/10.1080/14616688.2023.2274834
[24] https://doi.org/10.1515/mgr-2017-0021

4.6 EMPLOYMENT

One submission raised concerns that the construction of the proposed project would not provide work for locals. Section 5.4.2 of the Population and Human Health Chapter (Chapter 5) of the submitted EIAR states that between 87 – 116 persons will be directly employed during the peak construction period of the proposed project. Many of these will be local people, such as plant and machinery operators. Any specialist roles are likely to be from outside the locality.

The construction of the proposed project will create and support indirect employment, primarily through the construction workforce on site and purchase of material and supplies from local businesses such as fuel, stone, concrete, etc.. It is also anticipated that local spending by construction employees in the form of accommodation and sustenance will increase for the duration of the planned construction works.

Section 5.4.2.2 of Chapter 5 Population & Human Health of the submitted EIAR also states the proposed project will support an estimated 2-3 full-time long term high quality technical jobs on site during the operation phase. These jobs will be created directly as a result of the maintenance and operational needs of the proposed project. There will be other roles indirectly supported for the running of the wind farm, estimated to be between 19-24 jobs at this stage as described in Chapter 5 of the EIAR.

4.7 CUMULATIVE EFFECTS

Failte Ireland and one other observation raised a concern relating to the potential cumulative effect of the proposed project on views of the landscape and subsequently on tourism in the area. The cumulative landscape and visual effects are discussed in Section 13.10 of Chapter 13 (Landscape and Visual Impact) of the submitted EIAR, while cumulative effects for Population and Human Health (including tourism) are discussed in Section 5.7 of Chapter 5 of the submitted EIAR (Population and Human Health). Neither have found significant cumulative effects from the proposed project. The findings of a number of studies are discussed in Section 5.4.2.2 of Chapter 5 of the EIAR (Population and Human Health) and these indicate that tourists generally are not affected by the presence of wind farms. The proposed project will also provide a community development fund which will allow for the local area to develop and improve tourism facilities to drive the local economy. Potential risks to tourism are discussed in more detail under "Tourism" above.

4.8 CONSULTATION

A submission was received expressing concern that the relocation of the proposed substation was not communicated following a public consultation event. The applicant wishes to clarify that the substation location was revised directly in response to community feedback received at that event in order to minimise the views of the substation from local properties. As outlined in the Community Engagement Report (Appendix 1-5 of the EIAR), the project team undertook a comprehensive and multi-stage consultation process from 2022 to 2024, including newsletters, door-to-door visits, webinars, community clinics, and a virtual exhibition. Following the final community clinic and direct engagement with a local residents, the substation was relocated to a different location to address concerns raised, at a cost to the applicant. This change is documented in Chapter 3 of the EIAR (Consideration of Reasonable Alternatives) and reflects

the applicant's commitment to responsive and meaningful engagement throughout the design process.

4.9 Animal Health

Five submissions raised concerns regarding the potential health impacts on their animals and livestock productivity.

In response we note that the lands adjacent to and surrounding many wind farms across the country are utilised by animals. There is no scientific evidence that wind turbines have a negative impact on domesticated and farm animals grazing in close proximity. Indeed, equestrian trails were provided as part of the recreation plan for the Sliabh Bawn Wind Farm in Co. Roscommon and these are regularly used by horses and includes a specific "Equestrian Trail"[25]. Wind farms and livestock farming frequently coexist, with cattle grazing safely around turbine bases. The proposed development will adhere to all relevant animal welfare and environmental protection standards, and the applicant remains committed to ongoing engagement with local farmers and stakeholders to address any concerns.

One submission raised a concern that the proposed project might negatively impact the contractual schemes between landowners and the Department of Agriculture, as well as participation in schemes such as ACRES. The proposed project will not affect any contractual dealings of landowners that are not directly involved with the project and the applicant will not be able to determine the inclusion, or otherwise, of any local landowners in any such schemes.

4.10 Risk of Accidents

One submission raised concerns regarding the potential for a turbine to fall during a storm and cause subsequent damage to houses. In response to this concern, there are no dwellings located within 800m of the proposed turbine locations, therefore the risk to residential receptors from turbine collapse is not considered significant. The proposed tip height of the turbines is between 179.5 - 185m, therefore all residential dwellings are significantly removed from any area of a potential turbine collapse.

Furthermore, it is noted that a review of potential hazards that could result in major accidents and/or disasters was carried out as part of the submitted EIAR (see Chapter17) and an emergency response plan is included in the Construction Environment Management Plan (Appendix 2-2 of the EIAR). As discussed in Section 17.4.2 of Chapter 17 of the EIAR, extensive and detailed ground investigation will be undertaken by the appointed Contractor to inform the detailed design and appropriate construction technologies and plant to be deployed. The wind turbines will be manufactured by a reputable manufacturer which is controlled under the relevant international standards for safety and quality compliance. Turbines will shut down at wind speeds greater than 25m/s as a preventative measure from excessive wear, although some turbines are designed to operate at up to 30m/s (Section 2.6.2.1 of the EIAR). Following

[25] Sliabh Bawn - Coillte

construction there will be a maintenance regime that will be followed during the proposed 35 year operational period of the wind farm.

5. BIODIVERSITY

Any of the observations that commented or raised issues relating to Biodiversity are addressed here. The comments have been dealt with under a number of headings below which cover the topics raised in the observations. Section 5.1 (with the exception of 5.1.5 and parts of 5.1.1.1) and Section 5.2 were written by TOBIN. Section 5.1.5 (Bats) was written by Eire Ecology and all responses to observations concerning the Biodiversity Management Plan (BMP) and habitat valuation were written by AECOM with assistance from FEI (Section 5.1.1.1 and Appendix A).

5.1 EIAR CHAPTER

The following section addresses the observations related to Chapter 6 (Biodiversity) of the submitted EIAR.

5.1.1 Habitats

Observations on habitats relate mainly to recorded Annex I Peatland Habitats and woodland (mainly conifer plantation) habitats.

5.1.1.1 Peatlands / Moorlands and Biodiversity Management Plan

Observations relating to peatland/moorland habitats and the Biodiversity Management Plan (BMP) are responded to in Appendix A by AECOM.

Observations relating to legal queries on BMP land agreements are provided by Mason Hayes Curran and those relating to peat forming species are provided by TOBIN below.

Three observations related to the 'control' and enforcement of the land agreements in the BMP. As set out in Appendix 2-1 Biodiversity Management Plan:

> *The total area of offset lands within the control of the Developer is 326.87 ha and of this 234.77 ha can be considered to be suitably located for management for foraging hen harrier. The agreement for the total 326.87 ha of offset lands is for the lifetime of the wind farm once operational plus an additional 3-5 years before operation commences. This is likely to be a term of 35 – 40 years for Scart wind farm development. The landowners have agreed to the management of their lands for biodiversity.*

Further and without prejudice to the above, Futurenergy Scart Mountain DAC invite ACP to condition the implementation of the Biodiversity Management Plan as a condition of any permission. This will ensure the implementation of the Biodiversity Management Plan and the ongoing land management measures therein are implemented.

The attachment of such a condition to a permission was summarised by the High Court (Haughton J) in *Alen-Buckley v An Bord Pleanala & ors [2017 No. 145 JR]* as follows:

> *"64. It is clear that the Board may generally attach conditions to planning permission, as provided for in s.34(1) of the 2000 Act. The opening wording in section 34(4) provides –*
>
> *"(4) Conditions under subsection (1) may, without prejudice to the generality of that subsection, include any of the foregoing -..."*

Sub-section (4) goes on to list a number of conditions which may be attached; however this provision specifically states that these conditions include all or any of those listed, indicating that this is not, as the applicants seem to suggest, an exhaustive list.

This Court in People Over Wind v An Bord Pleanála [2015] IEHC 271 found conditions such as the requirement to submit a Construction Management Plan as being valid, notwithstanding that this involved leaving matters over to be finalised by agreement between the Developer and the Planning Authority.

65. In that case certain mitigating conditions were imposed which were very onerous to the point where the applicants argued they would be near impossible to fulfil. In response to that argument I found: "…it may be that Coillte will be unable to carry out the proposed development pursuant to the permission granted by the Board. That however is not the concern of the Court." The same reasoning applies in the present case. If the Developer is unable to obtain the consent of the third parties whose lands will be affected by the additional mitigation works, if they are unable to obtain planning permission for the grid connection, or if they are unable to obtain the appropriate licenses for the road works, this simply means that the permission as granted cannot be implemented. It does not make such conditions or the planning permission to which they attach invalid." (emphasis added).

While the above judgment considered a condition imposed under section 34 of the Planning and Development Act 2000 as amended, the power of ACP to impose such a condition is, as broad in respect of an application made under section 37E of the Planning and Development Act 2000 as amended in so far as section 37G(3) simply states:

"The Board may, in respect of an application under section 37E for permission—

(a) decide—

(i) to grant the permission, or

(ii) to make such modifications to the proposed development as it specifies in its decision and grant permission in respect of the proposed development as so modified, or

(iii) to grant permission in respect of part of the proposed development (with or without specified modifications of it of the foregoing kind), or

(b) decide to refuse to grant the permission,

and a decision to grant permission under paragraph (a)(i), (ii) or (iii) may be subject to or without conditions."(emphasis added).

Further, section 37H(6) provides:

"(6) A person shall not be entitled solely by reason of a permission under section 37G to carry out any development."

A further observation was made on the naming and dating of maps in the BMP land agreements. It is noted that the respective landowners have not raised an issue with these items. Broemountain was the original name of the proposed project and as such one of the maps had 'Broe' in the title as it was entered into prior to the name change. A further map was incorrectly dated but is consistent with the map in the land agreement.

As noted above, a person shall not be entitled solely by reason of a permission under Section 37 to carry out development, and we confirm that all final agreements will be in place prior to implementation in the event that the Commission is so minded to grant permission.

Two observations were made concerning the failure to acknowledge peat forming species, one of which was concerned about the impacts of dust deposition on those species. The species composition of the heath and bog habitats is listed in detail in Section 6.5.2.14, 6.5.2.15 and 6.5.2.16 of Chapter 6 (Biodiversity) of the submitted EIAR. Subsequently dust was considered a short-term, negative, slight effect because a rigorous dust management plan will be in place ensuring the site access tracks are kept artificially damp during dry periods to minimise any dust impacts (see Chapter 14 Air Quality and Climate Section 14.5.1.1 Air Quality Mitigation). For further details on the presence/absence of peat forming species see Appendix A.

5.1.1.2 Woodland

Eighteen observations raised concerns relating to the impacts that the proposed project will have on the woodland and hedgerow habitat that is located within the proposed project site.

One observation was concerned about Farnane Wood, which lies approximately 1.4km to the south east of the proposed wind farm site. No works will occur within Farnane Wood. Concerns were raised that water quality pollution would impact on this ancient native temperate rainforest. Strict mitigation measures will be in place as prescribed in Chapter 9 Hydrology & Hydrogeology and the Surface Water Management Plan (SWMP) which will prevent impacts to water bodies and associated habitats such as Farnane Wood. The implementation of these measures and the monitoring of the effectiveness of these measures will be carried out by an appointed suitably qualified Ecological Clerk of Work (ECoW) as described in Section 6.9.2 of the submitted EIAR.

One observation was concerned about the loss of 31ha of conifer plantation and the national target to establish 17% of forestry cover by 2030. In this instance conifer plantations may be regarded as forestry cover and contribute to carbon sequestration (as further described in Chapter 14 (Air Quality & Climate) of the submitted EIAR) but after a number of years these commercial plantations are to be felled in rotation regardless of the presence of the proposed project. Furthermore, any felled areas will be replaced by an area of newly planted forestry elsewhere in the state covering at least the same area as what is felled within 2 years of that felling. Conifer plantation monocultures have limited benefit to biodiversity and contribute to acidification of surface water bodies. Within the proposed wind farm site eleven turbines (6-14) are located within conifer plantation monocultures. Although it is correct to state that 31ha will be replaced by infrastructure (i.e. roads, turbine hardstands, etc.) an additional area of approximately 40 ha of conifer plantation will be felled to create turbine buffers necessary to accommodate bats. These areas will be managed (enhanced and restored to habitat originally present as per the BMP – see Appendix 2-1 of the submitted EIAR) to return to Annex I wet heath and dry heath habitat which is of significantly greater value to biodiversity than conifer plantations. Incidentally, some areas on Knocknasheega have been in fact designated by Coillte (Bio Classification) to: '*Remove conifers, conversion to open habitat and promote heath (Annex I 4030).*'

One observation was concerned about the removal of hedgerows. Small areas of hedgerow and scrub were recorded along the proposed access and grid connection routes (GCR). There will be

an estimated loss of 0.04ha. This loss will be compensated by managing, replanting and enhancing hedgerows and scrub as part of the management of agricultural lands (see BMP Section 5.1.1.2 d. and e.). The designated enhancement lands will be managed to provide improved ecological habitat by planting and enhancing hedgerows and designating areas for scrub encroachment in appropriate locations as agreed with the landowner which will be formulated in a farm plan in cooperation with a suitably qualified farm plan ecologist.

Two observations concerned the alluvial forest along the Glenshelane River within the Blackwater River (Cork/Waterford) SAC, which is a qualifying interest of the SAC. A bridge is proposed to cross the upstream reaches of Glenshelane River and Blackwater SAC. The NPWS conservation objectives (NPWS, 2012) have not recorded alluvial forest or any other Annex I habitat at this location. The NPWS have recorded 'semi natural woodland' approximately 1km downstream of the proposed bridge. Semi natural woodland is not an Annex I habitat but when listed in the NPWS conservation objectives it forms part of the SAC and should be valued to be of International Importance. However, at the location of the proposed bridge such habitat was not recorded. The site was surveyed and it was recognised that the habitat at this location comprises semi-natural scrub habitat.

Section 6.7.3.1.7 (of Chapter 6 (Biodiversity) of the submitted EIAR) states the following: '*A clear span bridge will be constructed to span over this willow scrub habitat and avoid works within the SAC boundary.*' These works will be carried out under supervision of the appointed ECoW to ensure the footprint of the SAC is completely avoided in terms of groundworks. The area where vegetation will be pruned (0.02ha) will be demarcated prior to the works commencing to ensure vegetation pruning is kept to a minimum under supervision of the appointed ECoW. Further mitigation measures for these works are prescribed in Section 6.2.1.3 of the submitted NIS and no adverse effects on the integrity of Blackwater (Cork/Waterford) SAC, or residual impacts, will occur.

5.1.2 Aquatic Environment

5.1.2.1 Fish and Crayfish

One observation raised an issue with the term 'limited' that was used to describe salmonid spawning habitat within the proposed wind farm site boundary. The word 'limited' in this case refers to the low suitability for spawning and juvenile salmonid habitat within the proposed wind farm site boundary but also refers to the, in comparison, much better quality spawning and juvenile habitat located in the lower reaches of the rivers in the Zone of Influence. This is further described in detail in Section 4.2.1 of Appendix 6-3 Aquatic Report of Chapter 6 (Biodiversity) of the submitted EIAR.

Two observations criticise the use of eDNA and suggests the report heavily relies on the eDNA results. The eDNA samples were taken at low water levels during the appropriate time of year (11th of September) for the target species Atlantic Salmon and Freshwater Pearl Mussel as per the sampling guidelines of the analyst (SureScreen Scientifics). All sampling protocols were strictly followed which means the likelihood of cross-contamination (eg false positive results) is extremely low. Because of the high sensitivity of the eDNA test, when a positive result is obtained, the species presence upstream can be confirmed with high scientific certainty. When a negative result is obtained it is highly likely that the species is not located upstream but it can't

be ruled out completely. Therefore, eDNA sampling should always be carried out in-combination with an aquatic survey. For Scart Mountain, aquatic surveys were carried out which comprised detailed hydromorphological review of the water body, instream kick sampling to determine biological water quality and a visual search of aquatic species and associated suitable habitat (eg salmonids, crayfish, freshwater pearl mussel, macrophytes, bryophytes and any other relevant ecological indicators). These surveys are carried out by trained professionals who have multiple years of experience surveying Irish rivers and streams (as described in Section 6.1.4 Chapter 6 (Biodiversity) of the submitted EIAR). The data collected during such surveys confirmed if the habitat had potential or was suitable for certain aquatic species. Using the precautionary principle, any stream within or connected to a European site designated for Atlantic salmon would be regarded as such if suitable habitat had been recorded as was the case for example in the Glenshelane River. Any stream comprising pool and riffle habitat was regarded suitable for salmonids, and slower flowing stream and rivers with suitable instream refugia such as mud banks, boulders and cobbles was regarded as suitable habitat for eel and lamprey.

Therefore, all streams and rivers are regarded to be suitable for aquatic species or as a vector to transport potential pollutants to suitable habitats and aquatic species therefore the mitigation in Section 6.8.1.3.2 of Chapter 6 (Biodiversity) of the submitted EIAR prescribes the protection measures of all streams and rivers.

Another observation raises concerns about not carrying out a survey between Aquatic Site 10 and eDNA Site C1 on the Glenshelane River and that this was allegedly omitted due to the presence of white clawed crayfish and lamprey. At Aquatic Site C1 an eDNA sample showed a positive result for Atlantic Salmon, meaning that mitigation is required to ensure that the aquatic habitat of the Glenshelane River will be protected from any negative impact to water quality that may be caused by the works (as described in the mitigation in Section 6.8.1.3.2 of Chapter 6 (Biodiversity) of the submitted EIAR and Section 6.2.1.2.1 and 6.2.1.2.2 of the submitted NIS). These mitigation measures will protect any potentially present lamprey and crayfish on the section of river between eDNA site C1 and Aquatic Site 10.

Lamprey was recorded at site 11, a tributary of the Glenshelane River, indicating presence on the Glenshelane River (see Section 6.5.2.27.4 of Chapter 6 (Biodiversity) of the submitted EIAR). Crayfish was not determined to be present in the Glenshelane River because the river lies outside of the known range for crayfish in Ireland and no live or dead specimens were recorded during the survey as described in Section 6.5.2.27.2 of Chapter 6 (Biodiversity) of the submitted EIAR. Crayfish was not recorded by eDNA sampling (see Appendix E-1 of Appendix 6-3 Aquatic Report of Chapter 6 (Biodiversity) of the submitted EIAR), and considering all evidence, crayfish are not present on the Glenshelane River. As no crayfish are present within the proposed project site and no instream works are proposed, no crayfish plague mitigation was considered. However, the surveys were carried out under strict biosecurity measures as described in Section 2.2.2 of Appendix 6-3 Aquatic Report of Chapter 6 (Biodiversity) of the submitted EIAR.

5.1.2.2 Common Frog

Two observations are concerned about the wellbeing of common frogs. Section 6.9.3.3 of Chapter 6 (Biodiversity) of the submitted EIAR addresses these concerns and all suitable habitat

will be surveyed prior to works commencing and frogspawn will be translocated where it is found to be present.

5.1.3 Mammals

Two observations raised concern about badger being impacted within the proposed project site. Little evidence of badger was recorded within the site, which is a good indication that badger is likely to not frequently use this site as evidence such as latrines, large excavated setts with multiple entrances and snuffle holes are very conspicuous when badger are active in the area. Badger generally prefers agricultural fields and scrub / native woodland or hedgerow habitat, therefore the upland conifer plantations and peatland habitat are not their preferred habitat. Nonetheless, even though there is no compelling evidence to suggest badger are actively using the proposed wind farm site, Section 6.5.2.24.2 of Chapter 6 (Biodiversity) of the submitted EIAR, they are taken into account and mitigation measures to prevent mortality and disturbance are prescribed (see Section 6.8.1.4.2 of Chapter 6 (Biodiversity) of the submitted EIAR).

Six observations raised concern about deer (native red deer and non-native fallow deer) and pine marten. Because a relatively small area of habitat (approximately 35ha) will be removed, compared to the surrounding area, sufficient alternative habitat is present and conifer plantation habitat will be improved to habitat of higher ecological value (e.g. 37ha will be restored to dry and wet heath) as described in Section 6.7.4.1.3 of Chapter 6 (Biodiversity) of the submitted EIAR, no significant effects are expected to occur. Nonetheless, Section 6.8.1.4.3 of Chapter 6 (Biodiversity) of the submitted EIAR describes mitigation measures to minimise disturbance to these species.

5.1.4 Butterflies

Nineteen observations raised concern about the Marsh Fritillary (MF) butterfly which is the only insect in Ireland designated as Annex II on the EU Habitats Directive. Section 6.5.2.25.4 of Chapter 6 (Biodiversity) of the submitted EIAR states that no food / host plant *Succisa pratensis* was recorded during any of the habitat surveys, some of which were carried out by Annex I habitat survey specialists on Knocknanask and Knocknasheega (see of Appendix 6-2 AECOM – Annex I Habitat Report of Chapter 6 (Biodiversity) of the submitted EIAR). The habitat survey results concluded the site did not contain suitable habitat for MF.

Nine observations criticised the survey methodology and survey extent of the MF surveys.

To determine suitable habitat availability for marsh fritillary a search was carried out for the food plant (*Succisa pratensis*) and the larval webs as per (Phelan et al., 2021). Section 6.3.2 of Chapter 6 (Biodiversity) of the submitted EIAR states the survey dates which cover 19 to 21 July when MF is on the wing and 27 September and 6 November when the food webs are visible. However, MF was not observed during any surveys and neither was its food plant.

Five observations questioned Small Heath which has not been surveyed or mentioned in Chapter 6 (Biodiversity) of the submitted EIAR because it has no legal protection in Ireland. It is proposed to construct infrastructure on wet heath habitat on Knocknanask, however, in the overall scale of the project the loss of 2.79ha of this habitat comprises a small percentage (2.43 %) of the total area (as per Section 6.7.3.1.3 of Chapter 6 (Biodiversity) of the submitted EIAR). Additionally the BMP proposes qualitative compensation, restoration and enhancement

measures. These measures will improve the heath habitat for biodiversity on Knocknanask and Knocknasheega by reducing grazing levels, peat erosion and burning. It also comprises the reinstating of felled conifer plantation to previously present dry- and wet heath, which includes the quantitative restoration of 37ha of turbine (bat) buffers which will be restored from conifer plantation to dry and wet heath. These measures will be beneficial to species like small heath and other insects once these areas have become naturalised under the monitoring programme of the Ecological Clerk of Works.

5.1.5 Bats

Any observations relating to bats have been dealt with below under a number of topic sub-headings.

5.1.5.1 Competency and values

Three submissions questioned the competency and values of the bat report team who also conducted the bats surveys for the proposed project. The company has been conducting bat surveys since 2012 and have also been overseeing collision monitoring at wind farms since 2015 thus have a high level of knowledge of which mitigation measures work, and which are less effective in Ireland. In-house experience has verified that feathering and curtailment are the most effective mitigation to reduce bat fatalities in Ireland. To establish if fatalities occur, monitoring is essential, along with the authority to implement changes should issues arise. Eire Ecology have worked on several windfarm projects where bat fatalities were identified, curtailment was implemented after which bat carcases were no longer found. Attached to this response is information about a case study demonstrating this (see Appendix B). As such the team are confident that windfarms can be constructed which do not negatively impact the local bat populations. This view is supported by the literature where Whitby (2024) found[26] over 10 years, that curtailment reduced fatalities by an average of 62% in North America on 6 windfarms, Another study by Bennet *et al.* (2022)[27] found a reduction of 54% after implementing curtailment at a windfarm in southern Australia and a further study by Măntoiu *et al.* (2020)[28] found reduced fatalities by 78% in Dobrogea, Romania.

5.1.5.2 Scoping

Two submissions raised concerns regarding the lack of scoping engagement with Bat Conservation Ireland (BCI) and noted that the author of the bat report is Co-chair of this organisation. TOBIN carried out a scoping exercise in 2023 and BCI were included on the list of consultees, however there was no response received from them. It should be noted that BCI do not generally provide comments on individual developments but only provide comments on a sectoral level. The author's position on the committee for BCI did not change this stance.

With this in mind, the lack of correspondence from BCI should not be considered a deficiency.

[26] https://besjournals.onlinelibrary.wiley.com/doi/10.1002/2688-8319.12371
[27] https://onlinelibrary.wiley.com/doi/full/10.1111/aec.13220
[28] https://link.springer.com/article/10.1007/s10344-020-01378-x

5.1.5.3 Guidelines

Two Submissions suggest that BCI wind farm guidelines should have been used rather than NatureScots 2021 which were used in the submitted bat report and assessment. The 2012 BCI guidelines are outdated, and when compared with the NatureScots 2021 guidelines they lack clear guidance on quantity and length of static deployment and lack a framework for conducting an accurate risk assessment. Since its publication in 2012, a large body of new research on bat–turbine interactions has emerged, especially regarding:

- **Turbine cut-in speeds** and curtailment strategies.
- **Seasonal and weather-dependent activity patterns**.
- Advances in **automated acoustic monitoring** and data analysis.

A publication from 2016 (Mathews & al., 2016), demonstrated the requirement for a substantial increase in fixed point monitoring than had been practised under BCI 2012 guidance, to account for the highly variable nature of bat activity. This helped inform the 2019 and updated 2021 SNH guidelines which were developed in consultation with statutory agencies, NGOs, and the academic community. Using these documents ensures that survey design, data collection, and impact assessment meets **current scientific understanding.**

As an ecological consultant, there is a duty to:

- Follow **current best practice guidance**, even if it originates outside the Republic of Ireland.
- Ensure methodologies are **robust, repeatable, and in line with statutory expectations**.
- Provide decision-makers (NPWS, planning authorities, ACP, NIEA) with reliable and defensible evidence.

BCI is aware their guidelines are out of date and will be releasing an updated version soon.

For the proposed project, the static survey duration extended well beyond the standard 30 nights of static deployment as recommended in SNH 2021. Statics recorded from 57 up to 79 nights at the site. The level of surveys conducted at the proposed project site were well above the guideline-recommended number of surveys, and provided a high level of information on the bat activity within and surrounding the site.

5.1.5.4 Comparative survey quality

Four submissions suggested the Bat Report, found as Appendix 6-1 of the EIAR, was deficient. These are detailed below;

- *1) **The lack of wintering surveys was observed as a deficiency to bat surveys.***
  Given the lack of roosting potential within the site the only relevant wintering surveys needed were a preliminary assessment of trees which is easiest to do when there are no leaves. This survey was conducted at the appropriate time of year; 10th of October 2023. Surveys were carried out according to (BCT 2023) under the recommendation of (NIEA, 2022) , which recommends "*structures in the vicinity of a turbine be subjected to a preliminary roost assessment to establish if any structure of significant hibernation/swarming potential is present".* No structures of this kind were found within the vicinity of the turbines . As per the guidelines, where no hibernating roost potential is found, further surveys are not required.

- ***2) The loss of spring data was noted as a deficiency and the redeployment in Spring 2023 was questioned.***
  An error occurred when collecting data. A card reader attached to a phone was used to check each SD card had recordings. While this device succeeded in showing data on the phone, once retrieval of data was attempted, all the cards showed corruption. Despite discussions with Wildlife acoustic at the time, no data was rescued so instead detectors were reset back on site (June 2022). By this time, the spring period (April to May 2022) was missed. In order to ensure that the spring season was considered, a new round of spring data was collected in 2023. SNH 2021 states "*The objective is to complete these surveys within a single calendar year, but in a few situations it is accepted that this may not be possible. In such cases, surveys can be split over two successive calendar years, but a justification must be provided to explain the reason(s) for this."* Given the initial spring survey was attempted at the correct time of year, this is sufficient justification in repeating the spring survey the following spring.
- **3) Several observations referenced *Leisler's as a high-risk bat, stating the risk assessment fails to mitigate this species, given Ireland being the European stronghold for the species and the species typically flying within the collision zone of turbines.***
  The risk assessment conducted found there is a risk to Leisler's at several of the turbines and proposed mitigation to protect the species. Curtailment is proposed at turbines 11, 12, 13 and 14 throughout the bat active season specifically due to concerns for Leisler's while curtailment will be implemented at T1, 2, 4, 6, 8, 9 and 10 from peak activity periods, July to September. This is shown in the risk assessment tables. Studies showing the efficacy of curtailment to reduce bat fatalities (Michael D. Whitby, 2024) found that a cut in speed of just 5.0- ms^{-1} reduced fatalities by an average of 62% across six windfarms over ten years in North America. Similarly, (Măntoiu, 2020) saw a 78% reduction over 4 years with cut in speeds of 6.5 ms^{-1}.
- ***4) The Status of Irish bats as least concern was raised.***
  Roche (2024) provides population estimates and trends for six of Irelands bat species based on BCI's monitoring programs. The species at risk from windfarm collision; Common, Soprano, Nathusius Pipistrelle and Leisler's have all shown upwards population trends in the past 12 years; +117.9%, +221.6%, +0.41% and +117.5%. Baring Nathusius Pipistrelle, these are all large increases in population size demonstrating these species are not threatened at a national level. The Nathusius Pipistrelle analysis "*have very wide error bars and are provided on an All-Ireland basis due to very low encounter rates*". This species was found in very low numbers within the proposed project site and in 10,636 turbine searches to date, during Eire Ecology's collision monitoring, no Nathusius Pipistrelle bat has been found killed at a windfarm. Whiskered and Natterer's bats are low flying species considered of low risk for turbine collision (SNH 2021) and thus the potential for impacts from the proposed project, to these species is considered to be low.
- **5) Lighting of the substation potentially requiring a derogation licence.**
  An observation suggested if a light interferes with bat activity in anyway, a derogation licence is required. No evidence of a bat roost was found within the site. Lighting of a building does not require a derogation licence unless it was shown to directly impact a roost entrance. This is not the case at the proposed project.
- ***6) Use of NRA 2009 when providing context of the ecological value of the site.***
  The risk assessment and evaluation of the site was based on the guidelines primarily set out in SNH 2021, which is the standard for bat surveys at windfarms in Ireland. The use

of the NRA guidance was simply to show the importance of bats within the site (local higher value). The site does not host a bat population of National or International Importance. Using the (EPA, 2022) guidance the site would still show the importance of bats within the site as "local higher value". Thus, the reference to NRA guidelines in no way impacts the results, risk assessment, mitigation or residual impacts after mitigation has been implemented.

- *7) Questions were raised on the accuracy of the following information in the bat report.*
    a. *Table 3-3 showing wrong locations*.
    This table shows the bat conservation Ireland bat suitability model as can be viewed on the NBDC website (https://maps.biodiversityireland.ie/Map) with a 2km scale. The information in table 3-3 is correct. Column B provides a general area of the site and provides the BCI figures for each. While the centre of the site is referred to as Broemountain, this refers to the general area which also includes the townland of Broemountain.
    b. There are *errors in Table 3-5* of the bat report, where locations are incorrectly labelled for locations 1, 12 and 13.
    Building 1 is correctly geo-referenced in the paragraph below the table (52.221032, -7.791357). Location 12 incorrectly provides the location of the eucalyptus woodland (Location 13) and should read [52.220464, -7.801611] and the Eucalyptus searches were located at [52.1793239, -7.7996167] & [52.1763922, -7.8009934]. Figure 6-4 does provide the correct locations of structures.
    c. An observer questioned if "*structure 11 is in the right location*" on section 3.2.2.2 of the EIAR.
    It can be confirmed that it is in the correct location.
    d. *Location of statics compared to turbine locations are not provided*.
    This statement is incorrect. Figure 6-2 and Table 1-1 provide the location of both turbines and statics. Distances between are provided and a justification for this is given.
- *8) Potential of conifers as roosts*.
While conifers can eventually form cavities suitable for bats there are still no records found in the Bat Tree Habitat Key (BTHK) database (updated to March 2025) from *Sitka spruce*. Continuous Cover Forestry (CCF) is a forest management approach that instead of clear-felling, manages forests through selective thinning and natural regeneration, maintaining a permanent forest canopy. Germany, Switzerland and Slovenia have been practicing this system which results in a more ecologically diverse woodland while also allowing similar yields to clear-felling. Coillte along with private / NGOs have sites where this system is practiced typically in lowland settings. It is conceivable that through this approach more trees within conifer plantation will develop potential roost features. The vast majority of conifer plantation in Ireland (including the proposed wind farm site) however is clear felled, whereby all conifers are cleared and new trees are planted. CCF remains a niche practice, covering only a small fraction of Ireland's total forest estate. Until such time as conifer plantations are managed in a more ecologically sensitive approach, plantation conifers will continue to have minimal potential to host a bat roost. Detector 14 located at 52.181297, -7.798907 and Detector 15 (52.176683, -7.796187) showed highest activity from Leisler's with earliest emergence recordings. After a check of trees surrounding these areas, the Eucalyptus plantation was deemed the only area

with potential roost features. Emergence surveys conducted here did not reveal the presence of a roost.

- *9) An observer suggested cumulative impacts were not considered*.
  The cumulative impact of other windfarms has been considered. Following SNH 2021 an initial risk assessment considers 'project size'. Under this heading, other windfarms within 5km need to be considered. The project was considered large partially due to the proposed Dyrick Hill windfarm (which has since been refused but is subject to judicial review). This has an impact in the proceeding risk assessment tables and materially impacts the levels of mitigation required. In the risk assessment matrix, this increased the initial site risk from 3 to 4.
- *10) An observer noted that a non-standard ECOBAT analysis was used for assessing activity levels*.
  The assessment utilised previous ECOBAT sites within Ireland. Since submission of the planning application, a new version of ECOBAT has come online which Eire Ecology have been testing, and thus far, it has not provided sufficient assurance that it is correctly assessing activity levels. For common (high collision risk) species the new ECOBAT appears to undervalue activity, while it overvalues activity levels on less recorded species. As an exercise, the proposed project data was rerun with the new ECOBAT (data available to ACP on request). Results from this show Leisler's and Common Pipistrelle activity (site wide) falling from moderate to low, Soprano Pipistrelle falling from low moderate to low and a slight rise of Nathusius Pipistrelle from low to low moderate. *After recalculating the final risk assessment tables using the new version of ECOBAT no curtailment would be required at any turbine even during the peak July to September period.* It should be noted that this should not be considered for an assessment of the proposed project due to the uncertainty around the accuracy of the model. It was simply carried out to allay concerns that this model may have been more conservative than the methodology that was used.

  The original method (as submitted in the EIAR) is far more precautionary, with 6 turbines curtailed from April to September and an additional 6 from July to September. As previously stated, Eire Ecology have monitored windfarms since 2015 and know that curtailment is the most effective and proven method for reducing fatalities.

- *11) Lack / deficiency of Collision risk modelling*.
  A risk assessment model has been produced for Leisler's bar, Common, Soprano and Nathuius Pipistrelle; the species at greatest risk of collision. This is based on a large dataset of static recordings significantly higher than the 30 nights deployment recommended by SNH 2021. The quality of the data analysis is higher than standard as many consultancies do not manually verify all bat recordings. For the proposed project, all calls were manually verified alongside 20% of noise files (a higher rate than would typically be done). Noise files are recordings where automatic ID software determines no bat calls are present. On occasion, fragments of bat calls can be found in these files. At exposed sites, noise from exposure such as wind and rain, etc. can generate large amounts of noise files. This level of thoroughness goes beyond the typical standard practice in Ireland. At the proposed wind farm site, the vast majority of Noise files did not contain a bat call (99%). The level of recordings would not impact the overall activity rates. Bat activity at the site is not particularly high, and lowland sites would typically have far higher activity rates. The proposed mitigation strategy is both conservative and

precautionary and should operational monitoring show elevated fatalities, measures will be implemented to stop this from happening.

5.2 APPROPRIATE ASSESSMENT

One observation criticised the absence of the Natura 2000 threats and pressures data forms. It is correct this information was not listed in the Appropriate Assessment (AA) screening and NIS reports. For the Blackwater River (Cork/Waterford) SAC there are threats and pressures listed that could arise from the proposed project such as fertilisation runoff and forestry . Fertilisation will be prevented from occurring by implementing the prescribed mitigation measures as described in Section 6.2.1.2 of the submitted NIS. There will be no new forestry planting required for this proposed project within the proposed wind farm site, on the contrary, substantial areas of conifer plantation will be felled and returned to heath habitat thus decreasing impacts on terrestrial and aquatic habitats located within the SAC.

One observation is concerned about habitat loss in the area of the Blackwater SAC that comprises the Glenshelane River and lies in between Knocknanask and Knocknasheega. A clear span bridge will be constructed to cross this SAC. Although temporary disturbance will occur to the habitats within the SAC, the construction groundwork footprint will be located outside of the SAC boundary. Impacts will be prevented from occurring by carrying out groundworks outside of the SAC boundary, pruning vegetation instead of full removal and implementing the prescribed mitigation measures as described in Section 6.2.1.2 of the submitted NIS.

Three observations have concerns about Freshwater Pearl Mussel (FPM). As described in Section 4.1.3.4 of the submitted AA screening report a comprehensive data set was reviewed from NPWS (including the Conservation Objective maps (NPWS, 2012) and survey data including eDNA which all concluded FPM was not present within the ZoI of the proposed project and was only present in the River Blackwater and selected tributaries upstream of the proposed project. Freshwater pearl mussel was screened out of the AA screening report and was not determined to be present within the zone of influence of the proposed project.

One observation is concerned about potential habitat degradation of the Blackwater Estuary SPA. It states that the proposed project is hydrologically located 16km upstream of the Blackwater Estuary SPA, this is correct when taking the Transport Delivery Route (TDR) into account. However, no impacts are expected to occur from the TDR as no instream works or works near watercourses are proposed for this. The proposed wind farm site boundary is located 25km upstream of the Blackwater Estuary SPA, considering the influence of diurnal tides, the distance and the proposed mitigation measures, no impacts are expected to occur on the Blackwater Estuary SPA.

One observation raised a concern about the Blackwater Callows SPA and its Special Conservation Interest whooper swan. As this SPA is located approximately 8km upstream of the proposed project, the proposed project site does not contain suitable habitat to support this species and whooper swan was not recorded flying within potential collision height of the proposed wind turbines, it was screened out for impacts to water quality, disturbance and direct mortality (as described in Table 5-1 of the submitted Appropirate Assessment Screening Report).

One observation raised a concern about crayfish. Section 6.2.2.1 above responds generally to the concern around the proposed project on crawfish, but further to this, and specifically relating to AA, another reason to screen out crayfish was that it is not located within the ZoI as shown on the Blackwater River (Cork/Waterford) SAC Conservation Objectives document (NPWS, 2012).

One observation arising from section 4.1.3.4 of the AA screening report raised concerns about FPM;

'*the potential for this species (FPM) to be present within and downstream of the proposed project was not considered to be likely considering the sub-optimal habitat conditions*.'

However, this was not a standalone remark as it was based on the following data:

- No instream works are proposed;
- FPM was not detected by eDNA;
- FPM was not present within the ZoI according to a NPWS sensitive data request and according to the Blackwater River (Cork/Waterford) SAC conservation objectives map (NPWS, 2012);

FPM was not recorded during the aquatic surveys and no suitable habitat was recorded within the proposed wind farm site.

Therefore, no likely significant effects will occur on FPM as a result of the proposed project.

Two observations were concerned about impact to Ballymacoda SPA. Ballymacoda SPA is only hydrologically linked to the proposed project by the sea and it's located 39km downstream of the proposed wind farm site. Any potential runoff from the proposed project will not impact this SPA due to the dilution factor of the sea and its associated wave, current and tidal forces that will help disperse any such runoff. Therefore, this site was not considered to lie within the ZoI of the proposed project. Additionally, any potential (although unlikely) impacts to the nearby Blackwater Estuary SPA are mitigated for in Section 6.2.1.2 of the submitted NIS report.

5.2.1 General Comments

One observation questioned the information sources that were used. The observation suggests the information was mostly obtained from external sources and were not exclusive to the development area. The process of data collection included data searches and requests from all relevant agencies that collect and manage biodiversity data such as the National Biodiversity Data Centre, Botanical Society of Britain and Ireland, Environmental Protection Agency, Inland Fisheries Ireland and the National Parks and Wildlife Service. After this baseline data was collected and assessed the site surveys were carried out targeting specific areas and species that were highlighted in the data search whilst keeping an open mind to any additional ecological features that may be present also. For this proposed project extensive surveys were carried out as per the relevant guidance documents by habitat, bird, bat, terrestrial mammal and aquatic specialists to obtain ecological data exclusive for the proposed project upon which the assessment is based.

Two observations questioned the granting of permission without a derogation license being in place. As no otter holts or otter resting places were recorded, a derogation license for otter is

not necessary. Similarly for bats, no roosts are proposed to be disturbed or removed therefore no derogation license is required.

Two observations raised concern about the statement that some areas could not be surveyed due to access issues. Areas that were inaccessible (as described in Section 6.3.2.3 of Chapter 6 (Biodiversity) of the submitted EIAR) included steep valley banks of the Glenshelane River, dense (immature) conifer plantations and bramble type scrub where no infrastructure will be located and no works will occur. All areas containing proposed infrastructure were accessed and surveyed.

6. ORNITHOLOGY

Any of the observations that had comments or raised issues relating to Ornithology are addressed here. The comments have been dealt with under a number of headings below which cover the topics raised in the observations.

Various observations make general claims about inadequacy of the survey work, impacts being underestimated, etc., but do not provide any detail to substantiate these claims; these claims are not discussed here. The ornithological assessment in the EIAR chapter followed the relevant guidance (see Section 7.2.4.1). Ornithological receptors were also considered in the NIS which ultimately found that there will be no adverse effects on the integrity of any European sites during development and operation of the proposed project, either alone or in-combination with any other plans or projects

The EIAR chapter and this response were prepared by independent consultant, Tom Gittings. Tom has 30 years' experience in professional ecological consultancy work and research, with. has specific expertise in ornithological assessments for wind energy projects. Some input was provided by APEM for text in Sections 6.3.3.1 and 6.4.3, and they provided all information for Section 6.4.8.

6.1 SURVEY METHODS

6.1.1 Guidelines

The survey methods were based on Scottish Natural Heritage (SNH) (2017), which was the accepted standard guidance for onshore wind farm bird surveys in Ireland at the time the surveys were carried out. A new version of this guidance was published this year (NatureScot 2025). However, this version does not appear to differ significantly from SNH (2017) and, therefore, does not affect the scope of work carried out for the Scart project.

One observation refers to another set of bird survey guidelines (Bird Survey & Assessment Steering Group 2025). These are general bird survey guidelines that are not specific to wind farm projects and do not include guidance on key survey methods relevant to wind farm projects, such as vantage point surveys.

6.1.2 Nocturnal surveys

The lack of nocturnal bird surveys is criticised in the observations from the Department of Housing, Local Government and Heritage (DoHLGH), and one other observation, with the former focussing on nocturnal Golden Plover movements.

Wintering Golden Plovers are widespread in the Irish countryside and occur in many wind farm sites and the level of activity recorded at Scart was not exceptional. There is no specific guidance on when nocturnal bird surveys should be carried out for Irish onshore wind farm projects. However, nocturnal Golden Plover surveys are not routinely carried out for Irish wind farm projects. While surveys using night vision equipment and/or auditory detection methods can detect nocturnal activity, useful quantification of the activity that could contribute to displacement and collision risk assessments is much more difficult. Radar surveys are a possible method, although they have limitations, but the SNH / NatureScot guidance (SNH 2017,

NatureScot 2025) recommends that these are "only used to assess sites where there is likely to be high nocturnal activity of important species, especially if an SPA qualifying species is potentially affected".

The collision risk estimates presented in the EIAR included correction factors to account for potential nocturnal flight activity for species likely to show significant levels of nocturnal flight activity.

6.1.3 Vantage point surveys

6.1.3.1 Vantage point locations

One observation refers to the fact that the vantage point surveys were carried out by two survey teams who used different vantage point locations and refers to the statement in the NatureScot / SNH / NatureScot guidance that "observers should re-use the exact VP location in successive watches as small changes in VP location can produce significantly different visible areas".

Vantage point survey for wind farm projects are designed to produce samples of bird flight activity that are representative of overall patterns of flight activity across the wind farm site and throughout the year. The sampled flight activity is used to calculate flight activity densities for collision risk modelling. As long as the area surveyed (the viewshed) is accurately defined for each sample (vantage point watch), and the overall spatial coverage is representative of the wind farm site, it doesn't matter if vantage point locations are changed during the surveys. However, it is important that observers using the same vantage point use exactly the same position on each watch, which is the point that is being made by the statement in the SNH / NatureScot guidance .

The viewsheds for all the vantage points were mapped using DTM and DSM mapping, which allowed the effects of vegetation interfering with visibility from the vantage points to be considered. The viewshed maps (Figures 7-4 and 7-5 in the EIAR) show that each set of vantage points had good coverage of the wind farm site (contrary to claims made in some observations). As acknowledged in the observation, the collision risk model included adjustments to accommodate the data from two sets of vantage points.

6.1.3.2 Height bands

One observation refers to the fact that the vantage point surveys were carried out by two survey teams who used different height bands. However, it acknowledges that the collision risk model reconciled these two sets of height bands and does not identify any potential inaccuracy in the collision risk predictions resulting from this issue.

6.1.3.3 Seasonal coverage

One observation highlights the lack of vantage point surveys in October-November 2023 and in September 2024 and the concentration of survey effort in late March / April.

The objective of vantage point surveys is to provide representative samples of seasonal flight activity. The SNH / NatureScot guidance defines seasonal periods for certain target species and specifies that 36 hours of vantage point surveys should be completed in each season but does not specify that the coverage should be evenly distributed across months.

Vantage point surveys do not produce reliable data on monthly patterns of flight activity: the high degree of stochastic variation in bird flight activity means that sampling effects in the dataset will usually obscure any underlying monthly variation. Therefore, the fact referenced in the observation that high levels of Golden Plover and Hen Harrier flight activity were recorded in October and November 2023 does not mean that these months have high overall levels of flight activity of these species.

The high level of survey effort in late March / April reflects the fact that this is the period when Hen Harriers are displaying and are likely to be most sensitive to potential collision risks (because they spend longer periods flying at height).

6.1.3.4 Vantage point survey timings

One observation points out that some of the vantage point watches started before sunset or ended after sunrise and also criticises the overall spread of the watches across the daylight hours.

The NatureScot / SNH guidelines include recommendations about the temporal spread of vantage point survey hours for various target species. For raptors and waders, the recommended spread is from sunrise to sunset, while for waterfowl it is "between and including dawn and dusk" (in southern Ireland civil dawn/dusk is approximately 35-50 minutes before/after sunrise/sunset)[29]. While raptors and one wader species were among the main interests of the wind farm site, Whooper Swan (a waterfowl species) was a potential target species due to the proximity of the site to the River Blackwater.

The total duration of vantage point survey effort before sunrise and after sunset was 2930 minutes, which comprised around 4% of the total effort[30]. The recommendations for temporal spread of vantage point survey hours in the SNH / NatureScot guidance indicates that it valid to carry out vantage point watches in periods of civil twilight. Nevertheless, if the vantage point survey effort before sunrise and after sunset was excluded from the collision risk model, and assuming that no relevant flight activity occurred in these periods, the predicted collision risk would be increased by a factor of around 1.04 times[31]. This is within the margin of error of collision risk predictions and is accommodated within the precautionary doubling of the collision risks that was used for the collision risk assessments.

The diel distribution of the vantage point survey effort is summarised in Table 6.1. While there was some concentration of survey effort in mid-morning and mid-afternoon, the overall spread of the survey effort across all the daylight hours was good.

[29] Civil dawn and civil dusk are the times when the sun is 6° . During civil twilight (the period between civil dawn / civil dusk and sunrise / sunset) artificial light is not usually required for outdoor activities.
[30] Excluding vantage points that were not used for the collision risk modelling. Sunrise and sunset timings calculated using the *suncalc* package (Thieurmel and Elmarhraoui 2022) in R version 4.4.1 (R Core Team 2024).
[31] See Equation 1 in Section A7.4.2 of Appendix 7.7 in the EIAR. The exact increase would vary between species depending on the distribution of the civil twilight vantage point survey minutes and the species' flight activity between vantage point.

Table 6.1: Diel distribution of survey effort during the vantage point surveys used for the collision risk modelling.

Hour	Daylight hours	VP minutes	VP minutes / daylight hour
Sunrise - 1	731	1790	2.4
Sunrise	731	4101	5.6
Sunrise + 1	731	6271	8.6
Sunrise + 2	731	6566	9.0
Sunrise + 3	724	7847	10.8
Sunrise + 4	574	5928	10.3
Sunrise + 5	444	3823	8.6
Sunrise + 6	553	3751	6.8
Solar Noon			
Sunset + 6	553	3098	5.6
Sunset + 5	444	2892	6.5
Sunset + 4	574	4634	8.1
Sunset + 3	724	6040	8.3
Sunset + 2	731	6211	8.5
Sunset + 1	731	5646	7.7
Sunset	731	3829	5.2
Sunset - 1	731	1058	1.4

The Sunrise – 1 hour is the period from one hour before sunrise to sunrise, the Sunrise hour is the period from sunrise to one hour after sunrise, etc. The Sunset – 1 hour is the period from one hour after sunset to sunset, the Sunset hour is the period from sunset to one hour before sunset, etc. The Sunrise + 6 and Sunset – 6 hours included all the time between six hours after sunrise, or six hours before sunset, and solar noon. Sunrise and sunset times were calculated using the suncalc package (Thieurmel and Elmarhraoui, 2022) in R version 4.4.4 (R Core Team, 2024).

6.1.3.5 Vantage point watches durations

The observation from Jacqueline Walsh correctly points out that there are some vantage point watches listed in Appendices 7-4 and 7-5 of the EIAR with durations exceeding the three-hour maximum recommended by the SNH guidelines. These watches were identified in the data audit carried out for the collision risk model and queried with the surveyors. In each case, the apparent excessive duration was due to two consecutive watches being entered as a single continuous watch. In most cases, there was a break of at least the 30 minutes recommended by the SNH / NatureScot guidance between the consecutive watches. There was one pair of consecutive watches where there was no break (the watches at the BM9 vantage point on 07/10/2022). The second watch on this date (i.e. the watch potentially compromised by observer fatigue) comprises 0.2% of the total vantage point survey effort included in the collision risk model. Therefore, any issues with this watch will have had negligible effects on the collision risk predictions (see the discussion above about the vantage point survey effort that took place before / after sunrise / sunset).

6.1.3.6 Weather conditions

One observation argues that some vantage point watches took place during sub-optimal weather conditions affecting the potential robustness of the survey data. However, the critical factor in assessing the suitability of the weather conditions for vantage point surveys is the visibility: the visibility can remain adequate for vantage point surveys even during periods of rain, etc. As acknowledged in the observation, the visibility during all the vantage point watches was categorised as being > 2 km (the standard required by the guidance).

6.1.4 Breeding surveys

6.1.4.1 Coverage of buffer zones

One observation queries an apparent discrepancy between a statement that access limitations may have affected coverage of potential Red Grouse and Snipe breeding habitat within the 500 m buffer but outside the wind farm site, and a statement that all areas of suitable habitat for breeding raptors within the 2 km buffer were covered. However, these statements are not contradictory, due to the differing survey requirements for the species involved. Breeding raptors are mainly surveyed by carrying out vantage point watches from suitable locations (including additional locations to those included in the main vantage point surveys), so potentially suitable habitat can be covered remotely when access is not available. Breeding Red Grouse and Snipe are surveyed by transect-type surveys, which requires access to within 100 m of all potentially suitable habitat.

6.1.4.2 Seasonal coverage

One observation from states that "there is no clear evidence" that two full seasons" of breeding surveys were carried out. This is not correct. There were two full seasons of breeding distribution and breeding raptor surveys in 2023-2024. Appendix 7-4/7-5 of the EIAR provides details of the breeding distribution and breeding raptor surveys carried out in 2023, with descriptions of the survey methods and coverage on pages 6-7 and the results on pages 12-14. Appendix 7-6 of the EIAR provides details of the breeding distribution and breeding raptor surveys carried out in 2024, with descriptions of the survey methods and coverage on pages 10-12 and the results on pages 14-16. There was only one season of breeding Woodcock surveys in 2023-2024 but this was supplemented by data from surveys carried out in 2019-2022.

6.2 HEN HARRIER

6.2.1 Displacement

The DoHLGH observation criticises the assessment of displacement impacts to Hen Harriers and makes the general comment that "*in the Department's opinion the assessment of the significance of the impact of the development on the key avian receptors is underestimated*". This characterisation does not reflect the conservative methodology actually applied. The EIAR explicitly evaluated the predicted residual displacement effects on Hen Harrier foraging habitat before any mitigation as moderate–significant, a rating that errs on the side of caution given the limited empirical evidence available on such impacts.

Far from downplaying effects, the assessment openly acknowledges the inherent uncertainty associated with analysing displacement and deliberately adopts a precautionary significance rating to ensure that potential risks are neither understated nor overlooked. The approach taken was therefore intentionally conservative and acknowledged the data limitations.

6.2.1.1 Turbine height

The DoHLGH observation refers to the much larger size of the proposed turbines at Scart compared to those in the wind farms used in the Pearce-Higgins *et al.* (2009) study, suggesting that greater displacement impacts would be expected from large turbines. However, there is no evidence that this is the case.

The only relevant peer-reviewed work appears to be Hötker (2017). This reported mixed results: more species showed increases in "avoidance distances" with increasing turbine size, than showed decreases, but the relationships were only significant for two species and "lower disturbance by taller turbines was found in species or species groups that are sensitive to disturbance". He speculates that taller turbines may cause less displacement because "the rotor tips of larger turbines are farther away from birds on the ground, and the relative speed of the rotors may be perceived to be slower and less disturbing". Hen Harrier is not included in the species covered by his review.

As with all of Hötker's work on displacement impacts, the caveats discussed in Section 7.2.8.4 of the EIAR apply. However, this appears to be the only peer-reviewed work that assesses the relationship between turbine height and displacement effects.

6.2.1.2 Displacement distances

The only robust peer-reviewed work on Hen Harrier displacement distances is the Pearce-Higgins *et al.* (2009) study. This found a significant negative correlation between turbine proximity and Hen Harrier flight activity.

The statistical analyses used in the paper do not explicitly calculate a specific displacement distance. However, Figure 1 (of that publication), and the commentary on that figure in the text, indicates that it mainly occurs within 250 m of the turbines. However, even within this distance, Hen Harriers are not completely excluded.

The displacement effects in the EIAR were calculated by assuming 100% displacement within 250 m of the turbines. This was a precautionary assumption in relation to the results presented in Figure 1 of the Pearce-Higgins *et al.* (2009), where the probability of occurrence in the 0-250 m distance band was around one-third of the probability of occurrence in the 250-500 m distance band.

The DoHLGH observation refers to a predicted reduction in Hen Harrier density within 500 m of turbines, which is also included in the Pearce-Higgins *et al.* (2009) paper. The statistical model used for this prediction assumed linear relationships between bird densities and distances from turbines. This means that, where the avoidance effect extends for less than 500 m, the models will tend to over-predict the displacement effect at the 500 m scale.

One observation claims that the decision to use the 250 m scale for the displacement assessment was based on the grey literature. This is not correct. The 250 m distance was derived from the Pearce-Higgins *et al.* (2009) paper. As explained in the EIAR and discussed above, the

model used in the paper used to calculate displacement at the 500 m scale is likely to significantly over-estimate the displacement effect.

The DoHLGH observation also refers to two published estimates of Hen Harrier disturbance distances. These relate to the potential effects of human activity, such as forestry operations, rather than the physical presence of structures such as turbines (see the discussion of operational disturbance below).

The observation also refers to an Irish study that found lower Hen Harrier nesting success within 1 km of turbines (the Windharrier study; Fernández-Bellon *et al.* 2015). However, this result was not statistically significant. There was a much smaller number of nests within 1 km of turbines included in the study compared to more than 1 km: 9 nests in the 0-1 km distance band, compared to 20-35 nests in the other three distance bands. This is reflected in Figure 1 in the paper, which indicates that there was a higher standard error in nesting success within 1 km of turbines, compared to beyond 1 km. Also, the analysis does not consider any potential confounding factors: e.g., the paper does not present any data on the regional spread of sites included in each distance band and whether there was regional variation in nesting success.

6.2.1.3 Spatial patterns

The EIAR quantified the displacement effects by applying the assumption of 100% displacement to 250 m buffers around each turbine. The DoHLGH observation argues that this fails to account for the configuration of the turbines in relation to the Hen Harrier foraging habitat on Knockanask Hill, which will effectively isolate habitat outside, but upslope of., the 250 m buffers. However, as Figure 7-16 in the EIAR shows there is a 250-400 m wide corridor between the displacement buffers around the two western turbines (T1 and T2) and the three eastern turbines (T3-T5). This corridor connects to the southern and northern lower slopes of Knockanask Hill. Therefore, the DoHLGH observation's contention that the "the turbines will effectively create a ring of disturbance around any upslope habitat" is not correct.

6.2.1.4 Associated infrastructure and operational disturbance

The DoHLGH observation states that "displacement estimates also do not consider the additional displacement caused by associated infrastructure such as roads and associated human disturbance in this currently largely undisturbed area".

The Pearce-Higgins *et al.* (2009) study did not find any displacement effects to Hen Harriers from access tracks or transmission lines in the wind farms included in their study.

Potential operational disturbance impacts to foraging Hen Harriers were included in the assessment of displacement impacts in the EIAR. This reflects the fact that studies that report displacement effects do not partition those effects between components due to avoidance of physical structures and avoidance of human activity. However, the level of human activity required during the operational phase of a wind farm is low, comprising routine maintenance and occasional repairs. Therefore, applying disturbance distances that refer to periods of intensive activity (e.g. forestry operations) to assessment of overall displacement distances from turbines in operational wind farms is not appropriate as the intensity of human activity is not comparable.

The potential operational disturbance to Hen Harrier nest sites was assessed separately in the EIAR.

6.2.2 Other issues

6.2.2.1 Survey adequacy

One observation refers to comments in Ruddock *et al.* (2022) about the adequacy of Hen Harrier surveys carried out for Irish wind farm projects. The lead author of that report was the lead surveyor for the breeding raptor surveys carried out by APEM. The DoHLGH observation describes states that the "*EIAR has gathered valuable data on Hen Harrier usage*". The observation also acknowledges that the surveys for the wind farm project "*strongly suggests more territories present in the proposed development site area than were reflected in the 2022 national survey*", which reflects the fact that the surveys for the wind farm project detected Hen Harrier breeding activity that was not detected by the national survey (see Section 7.3.2.1 in the EIAR).

6.2.2.2 2019 breeding status

One observation claims that the information in the EIAR on Hen Harrier breeding status in the study area does not correctly reflect findings from the National Parks and Wildlife Service of successful breeding in 2019. However, this is not correct: Section 7.3.2.1 of the EIAR states that "confirmed breeding was recorded within / adjacent to the proposed wind farm site in 2018-2020", i.e. including 2019.

6.2.2.3 Construction disturbance

Some observations raise concerns about potential for construction work to take place within 1 km of Hen Harrier nest sites. The EIAR includes specific mitigation measures to address this issue (Section 7.5.2). Breeding bird surveys will be carried out in the breeding season preceding the start of construction, and in every subsequent breeding season across the duration of the construction period. If nesting Hen Harriers are found, construction work will generally be excluded from a 1 km buffer around the nest site. However, some lower magnitude construction work may be allowed, subject to an assessment by a suitably experienced ornithologist.

One observation refers to the potential effects of forest management operations on Hen Harriers in relation to the felling that will be required for the development of the proposed wind farm. This felling is included in the assessment of construction disturbance in the EIAR. Ongoing forestry operations associated with the management of the forestry plantations are not part of the proposed development but are included in the assessment of cumulative impacts.

6.2.2.4 Collision risk model

One observation criticises the collision risk model for not taking account of Hen Harrier display behaviour (sky dancing), when they are likely to have a higher collision risk. As discussed above, the vantage point survey included a concentration of survey effort in late March / April when this behaviour is most likely to occur. There were two records of displaying Hen Harriers.

6.2.2.5 Cumulative assessment

One observation states that the cumulative assessment should have been carried out at a national scale. However, SNH guidance on assessing cumulative impacts emphasises smaller spatial scales: Special Protection Areas or Ramsar sites, where relevant, or at the regional scale

in other cases (SNH 2018). The EIAR assessed the cumulative impacts on the Hen Harrier population in the Knockmealdowns, Kilworth, and Comeraghs Region, which constitutes one of the regional populations identified by National Parks and Wildlife Service and used for analyses of national survey results (e.g. Ruddock *et al.* 2024). Assessing cumulative impacts at the national scale would down-weight any additional contribution from the Scart Mountain Wind Farm project due to the larger size of the national population. The EIA Directive requires an EIAR to contain information "reasonably required" based on "reasonable effort". It is not reasonable to consider cumulative impacts at a national scale for a project.

6.3 OTHER SPECIES

6.3.1 Golden Plover

6.3.1.1 Golden Plover use of the wind farm site

The DoHLGH observation expresses concerns about the adequacy of the information about Golden Plover occurrence in the wind farm site. It notes that a flock of 49 Golden Plovers were flushed from Knockanask Hill during a visit by one of their ecologists, apparently contradicting statements in the EIAR that no Golden Plovers were recorded using habitats within the wind farm site. It argues that the vantage point surveys were not adequate to detect Golden Plover usage of Knockanask Hill and transect surveys would have produced more reliable information.

Bird surveys for wind farm projects produce sample data on bird activity. The failure to record a species using a particular habitat or location does not mean that the species never uses that habitat or location, but, instead, indicates any such usage is not significant. A one-off observation, such as that reported in the DoHLGH observation, does not contradict such an assessment.

The vantage points had good coverage of Knockanask Hill. While the DoHLGH observation is correct that detecting birds on the ground would have been difficult from the vantage point locations, wintering Golden Plovers have high levels of flight activity, often spending extended periods of time circling around above the areas they are using. Any significant use of Knockanask Hill during the vantage point surveys would have been detected by observations of flocks arriving, departing, or circling above the hill.

One observation refers to evidence from the EIAR which it interprets demonstrating a “strong trending upward in numbers” of Golden Plover. However, the table they cite (Table A7.1.6) only shows data for winters between 2017/18 and 2021/22, while the account in the main chapter shows that lower maximum flock sizes were recorded in the winters of 2022/23 and 2023/24. More generally, due to the high level of stochastic variation in Golden Plover activity patterns, standard vantage point survey effort is generally not sufficient to produce data that can reliably be used to assess variation between winters (—and this does not represent a limitation, as vantage point surveys are not designed for that purpose.).

6.3.1.2 Dungarvan Harbour SPA

One observation criticises the assessment in the EIAR of lack of connectivity with the Golden Plover Qualifying Interest of the Dungarvan Harbour SPA. However, the distance of 12 km that they cite between the wind farm and the SPA is to the closest point of the SPA (the uppermost

end of the Colligan Estuary). The author of the EIAR chapter (Tom Gittings) has spent over 100 days carrying out waterbird surveys in Dungarvan Harbour and has a thorough knowledge of waterbird distribution patterns within the SPA. The main Golden Plover roost site is on Whitehouse Bank, around 19 km from the wind farm site and they rarely occur in the inner parts of the harbour. Golden Plover are considered as part of the NIS which accompanied the application.

6.3.1.3 Blackwater Callows SPA

The DoHLGH observation criticises that lack of consideration in the EIAR of potential movements of Golden Plovers to/from the Blackwater Callows SPA.

Golden Plover is not listed as a Qualifying Interest of this SPA. No Golden Plovers were recorded in Irish Wetland Bird Survey counts of the Blackwater Callows in the most recent ten seasons for which data is available[32]. There is no mention of Golden Plover in the site synopsis produced by the National Parks and Wildlife Service for the SPA. Therefore, at the times of scoping the bird surveys and preparing the EIAR, there was no evidence available to indicate the presence of a significant wintering Golden Plover population at the Blackwater Callows.

6.3.1.4 Collision risk model

One observation claims that the EIAR did not provide "observed flight heights for Golden Plover". This is not correct. The flight heights for all Golden Plovers recorded in the vantage point surveys used for the collision risk modelling are included in Table A7.2.3 in Appendix 7-2, Table 7 in Appendix 7-4/7-5 and Table 9 in Appendix 7-6 of the EIAR. Golden Plover was included in the collision risk model and the collision risk assessment, and its potential collision risk was fully assessed.

6.3.1.5 Cumulative assessment

One observation refers to the statement in the EIAR that "the only other proposed wind farm site within the likely home range of the local Golden Plover wintering population is the proposed Dyrick Hill Wind Farm" and states that this "calls into question the thoroughness of the desk study" as it ignores the Coumnagappal Wind Farm where a high level of Golden Plover activity was recorded.

The statement in the EIAR was made in the context of assessing the cumulative impact to the Lower Blackwater River Golden Plover population (although it is acknowledged that the wording may have been a bit unclear). The Coumnagappal Wind Farm is around 17 km from the nearest point of the Lower Blackwater River Irish Wetland Bird Survey site, which is well above the 10-12 km distance used in the EIAR for assessing potential Golden Plover connectivity. The 10-12 km distance was based on evidence about the home range size of wintering Golden Plover (see Section 7.3.2.2 of the EIAR).

The collision risk from the Coumnagappal Wind Farm was used in the assessment of the cumulative Golden Plover collision risk at the county scale.

[32] Site Summary Table for 0M302 Blackwater Callows; https://c0amf055.caspio.com/dp/f4db30005dbe20614b404564be88, accessed 24/09/2025.

6.3.2 Merlin

The DoHLGH observation states that "merlin nest outside the site at present but development site likely within the breeding territory". The EIAR recorded potential nesting activity outside the wind farm site early in the breeding seasons of 2023 and 2024, but no subsequent activity in either breeding season. Therefore, unless the DoHLGH has other information, which was not made available for the EIAR, Merlin have not been confirmed nesting in the vicinity of the wind farm site in recent years.

6.3.3 Red Grouse

6.3.3.1 Survey methods

Two observations raised concerns about the survey methodology used to quantify the size of the population. The Breeding Distribution Surveys were undertaken in line with NatureScot onshore wind guidance covering the Site and a 500m buffer. Surveys used a combination of Smith and O'Brien (for lowland habitats) and Brown and Shepherd (for upland habitats). All open habitats within the Site were visited 4 times in line with guidance, with coverage from the Wind Farm Site boundary, Coillte land and publicly accessible land.

Brown and Shepherd is a generic method for surveying upland birds which is suitable for a range of species including red grouse, and is the standard method for surveying this species in Scotland. Data from other surveys were used to supplement Breeding Distribution Surveys.

The DoHLGH observation also refers to the lack of survey effort to "measure the number of grouse on site in winter when numbers may be larger". The SNH / NatureScot guidance does not specify any requirements for winter grouse surveys, and these are not routinely carried out for Irish wind farm projects.

The survey method was completed in line with guidance, however in analysing the results of surveys a precautionary approach was taken and it was stated that further territories could be present based on the results of surveys. This does not raise doubts over the survey methodology, it just states that precaution should be used when interpreting results.

6.3.3.2 Edge effects

The DoHLGH observation refers to the potential for the wind farm to "introduce new potential adverse edge effects through predation particularly nest predation and disturbance from access roads and other infrastructure". It cites a German study that reported increased predation probabilities to another gamebird (Grey Partridge) at edge habitats.

Increased predation to ground nesting birds from edge effects in upland habitats is generally associated with changes such as afforestation that increase the suitability of habitats for predators such as foxes and crows (e.g. Amar *et al.* 2011, Wilson *et al.* 2014, Sheridan *et al.* 2020), although there do not appear to be any published studies documenting edge effects in Red Grouse populations. The German study cited by the DoHLGH observation was in a very different landscape (lowland arable farmland).

The proposed access road and other infrastructure in the open heathland on Knockanask Hill will not introduce new forestry or other wooded cover and will not obviously change the permeability of the landscape to predators such as foxes and crows.

6.3.4 Woodcock

6.3.4.1 Survey methods and coverage

One observation criticises the method used for surveying breeding Woodcock as "non-standard". However, the stationary method that the observation considers standard was developed for use in national surveys where the objective is to sample large number of sites across a wide geographical area without collecting comprehensive information for each site. The stationary method is less informative than the transect method at a site scale due to its more restricted spatial coverage.

One observation quotes a statement from the EIAR about the potential underestimation of Woodcock breeding distribution by the surveys carried out for the Bird Atlas 2007-11 (Balmer *et al.* 2013) and interprets this as meaning that the surveys carried out for the Scart Mountain Wind Farm were also likely to underestimate Woodcock breeding distribution. This is incorrect. The Bird Atlas surveys were general bird surveys and were not specifically designed to record species such as Woodcock, which require specialised surveys like those undertaken for this project.

The DoHLGH observation refers to the lack of information on Woodcock "wintering densities". Woodcock was identified as a Key Avian Receptor in the EIAR for its breeding population. It is much more widespread and abundant in winter, and its Irish wintering population has not been identified as being of conservation concern (Gilbert *et al.* 2021). Therefore, information on its "wintering densities" was not relevant to the assessment.

6.3.4.2 Breeding distribution

One observation criticises the assessment in the EIAR that the Scart Mountain Wind Farm site is unlikely to hold 1% of the Irish breeding population. As quoted in the observation, the Scart Mountain Wind Farm site occupies one hectad, while breeding Woodcock were recorded from 132 hectads during the Bird Atlas surveys. As the latter are likely to have under-recorded Woodcock distribution, the true number of hectads occupied by Woodcock is likely to be significantly higher.

6.3.4.3 Displacement

One observation criticises the discussion in the EIAR of a study of Woodcock displacement (Dorka *et al.* 2014) for not mentioning the paper (Straub *et al.* 2015) that rebutted the critique by Schmal (2015) and for not using the 500 m displacement distance from Dorka *et al.* The EIAR explicitly discusses the Straub *et al.* rebuttal and concludes that "overall, the response by Straub *et al.* (2015) appears to successfully rebut the main criticisms made by Schmal (2015)". However, because all of Dorka *et al.*'s survey locations "were located immediately adjacent to the turbine locations" "the results of their study cannot be used to estimate the distance over which any displacement effect occurs". The observation does not engage with this argument.

6.3.5 Snipe

The DoHLGH observation refers to the lack of information on Snipe "wintering densities". Snipe was identified as a Key Avian Receptor in the EIAR for its breeding population. It is much more widespread and abundant in winter, and its Irish wintering population has not been identified as

being of conservation concern[33]. Therefore, information on its "wintering densities" was not relevant to the assessment.

6.3.6 Nightjar

One observation from Julia Gorodecky and others refers to a high incidence of Nightjar records in the area around the Scart Mountain Wind Farm site and the apparent lack of any Nightjar surveys for the wind farm project.

Nightjar is a very rare breeding species in Ireland with less than annual records of confirmed or probable breeding. The map presented in the observation shows all historical records of Nightjar. The records for the three hectads around the wind farm site were from bird atlas surveys in 1968-72, 1988-91 and 2007-11.

Specific Nightjar surveys are not usually carried out wind farm projects. However, Nightjar show similar activity patterns to Woodcock. Therefore, if breeding Nightjar were present, the Woodcock surveys would have been likely to have recorded them.

6.3.7 Barn Owl

One observation from Julia Gorodecky and others provides details suggestive of Barn Owl breeding in the area around the wind farm site and criticises the lack of a Barn Owl mitigation strategy.

Wind turbines are not generally considered to cause significant impacts to Barn Owl populations. The Barn Owl Trust states that:

There has been only one confirmed case of a Barn Owl being killed by a wind turbine in Britain (Cumbria – 04/01/13) and this was a small domestic turbine, not a tall commercial one. Overall there is no evidence that wind turbines have a significant impact on Barn Owls in the UK. *Two more recent cases are awaiting confirmation.*[34]*

They also report evidence of Barn Owls nesting close to wind turbines at two sites on multiple occasions. They note that Barn Owls typically hunt less than 3 m above the ground and recommend that where the bottom of the rotor arc is within 5 metres of the ground, vegetation surrounding the turbines should be managed specifically to reduce the availability of small mammals to birds of prey. The ground clearances of the turbines models being considered for the Scart Mountain Wind Farm are 22-36 m so the bottom of the rotor arc will be above the level where the Barn Owl Trust recommend mitigation to reduce collision risk.

6.3.8 White-tailed Eagle

One observation criticises the lack of any assessment of White-tailed Eagle collision risk in the EIAR.

White-tailed Eagle was not included in the collision risk model as there were no records of them flying at potential collision height during the timed vantage point watches. This does not mean

[33] The season classification in Table 2 in Gilbert *et al.* (2021) suggests that the red-listing for Snipe applies to both its breeding and wintering population. However, the rest of the table shows that it does not meet any of the relevant criteria for red or amber-listing for its wintering population.
[34] https://www.barnowltrust.org.uk/hazards-solutions/barn-owls-wind-turbines; accessed 25/09/2025.

that they never occurred in the wind farm site, just that any occurrences were too rare to generate a non-negligible collision risk, within the limits of accuracy of the collision risk model.

The four seasons of vantage point survey effort for the Scart Mountain Wind Farm complied with the four-season requirement specified by the NatureScot guidelines (NatureScot, 2025). It is widely accepted that compliance with the latter requirement is sufficient to provide suitable data for collision risk modelling.

6.3.9 Cuckoo

Concerns about potential impacts to Cuckoo from road construction are raised by some observations. Cuckoo is a green-listed species (Gilbert *et al.* 2021) and is not of high conservation concern. The road construction associated with the proposed wind farm is not likely to significantly alter the overall habitat suitability of the wind farm site for Cuckoos.

6.3.10 Skylark and Meadow Pipit

The DoHLGH observation refers to potential impacts on Skylark and Meadow Pipit. Skylark is amber-listed while Meadow Pipit is red-listed (Gilbert *et al.* 2021). However, these listings are based on their European conservation status. Both species are widespread and abundant in Ireland with estimated populations of over 350,000 individuals (Skylark) and over 1.7 million individuals (Meadow Pipit) in 2006-2010 (Crowe *et al.* 2014) and their current population trends are stable[35].

6.4 OTHER ISSUES

6.4.1 Organisation of material

One observation criticises the organisation of the material included in the Ornithology chapter and appendices and in particular the lack of "a single consolidated account of how the various survey datasets were combined and used in the Collision Risk Model".

While the project's history and the involvement of multiple survey teams have understandably added complexity to the presentation of the material, all of the survey data used in the collision risk modelling is clearly set out in Appendices 7-2, 7-3, 7-4/7-5 and 7-6 of the EIAR. The collision risk model report (Appendix 7-7 of the EIAR) describes how the vantage point survey datasets were processed for use in the modelling. All collision risk modelling involves some degree of processing of the survey data. It is not usual practise, and not required by the SNH / NatureScot guidance, to present the processed dataset in the collision risk model report.

6.4.2 Historical survey data

One observation criticises the use of historical data from surveys carried out between the winter of 2017/18 and the summer of 2022 because "no raw data, methodology or detailed results from those years are included".

[35] Countryside Bird Survey species trends: https://c0cre470.caspio.com/dp/4bae3000b11f2454575141d6884b and https://c0cre470.caspio.com/dp/4bae3000b11f2454575141d6884b; accessed 26/09/2025.

As noted in the EIAR, this data was used to provide context and to examine longer-term trends in occurrence patterns. It was not used for the collision risk modelling. Where it was used for other aspects of the impact assessments (e.g. Hen Harrier nest sites and Snipe breeding locations), the inclusion of the information increased the potential impacts (e.g. by including additional Hen Harrier nest sites and Snipe breeding locations).

6.4.3 Recording rates

One observation questions the methodology used to standardise recording rates in the analyses of the vantage point survey data in Appendix 7-1 of the EIAR. As stated in the appendix, the recording rate is the total number of records divided by the total vantage point survey effort for the relevant month or season. This produces a recording rate expressed as records / hour. Because the numbers of records per hour in vantage point surveys are usually very low, recording rates expressed as records / hour are usually very small numbers (much lower than one), which are not reader-friendly when presented in a table. Therefore, the recording rate was standardised to records / 360 hours for the seasonal analysis in Table A7.1.2 by multiplying the records / hour by 360, and to records / 390 hours in Table A7.1.3 by multiplying the records / hour by 390. As explained in the footnotes to the tables, the values of 360 and 390 hours were chosen as they were the mean survey effort per season and month.

6.4.4 Grey literature

One observation criticises the use of grey literature in the EIAR.

Reference to grey literature is not unusual in ecological assessments carried out for EIARs because a lot of the relevant information required for the assessment is unpublished. The assessment made use of peer-reviewed literature when possible and the references for the Ornithology chapter includes 48 books and journal articles, as well as 25 technical reports (reports that are part of series such as BTO Research Reports, Irish Wildlife Manuals and SNH guidance documents). Excluding the reports used for the cumulative assessments, there are only 17 items of grey literature cited in the chapter.

6.4.5 Collision risk assessment

One observation criticises the argument in the EIAR that the 1% threshold is generally too conservative for assessing the significance of increases in mortality due to the predicted collision risks. Section 7.2.8.10 of the EIAR contains a detailed justification of this position with reference to the history of the 1% threshold and its interpretation. While the observation refers to one specific point (the use of a 5% threshold for wind farm assessments in Flanders) it does not engage with the overall substance of the argument. Also, the argument about the 1% threshold is not relevant to the two species mentioned by the observation in this context: the collision risk assessment for Hen Harrier was carried out using a population modelling approach, while the predicted increases in annual mortality to the Red Grouse populations assessed were below the 1% threshold.

The argument is also based on the strong precautionary assumptions that were made in the calculations of increases in mortality rates in the collision risk assessment. These assumptions were that all the collision fatalities were adult birds, and that the collision mortality was additive

not compensatory. In practice some collisions will involve birds that would have died anyway (compensatory mortality). Collisions involving juvenile or immature birds will have lower impacts on mortality rates due to the higher background mortality rates for these age classes compared to adult birds.

6.4.6 Cumulative impacts

One observation refers to the acknowledgement in the EIAR that there were limited relevant information from other wind farm projects that could be used for the assessment of cumulative impacts. This is an issue that applies to nearly every proposed wind farm project in Ireland, due to the poor quality of the information that was submitted for earlier wind farm projects.

6.4.7 Nocturnal migration

The DoHLGH observation refers to the potential for nocturnally migrating birds to congregate around lighting on wind turbines in adverse weather conditions. The EIAR (Section 7.4.9) assessed the potential impacts of aviation lighting on nocturnally migrating passerines, which are the group potentially occurring at Scart that are most susceptible to such impacts.

6.4.8 Biodiversity Management Plan and Compensation

A number of concerns were raised relating to the compensation measures in the Biodiversity Management Plan (BMP) proposed for the proposed project. Many of these are responded to by AECOM in Appendix A . Those specifically relating to ornithology are presented below.

It is acknowledged that the habitat management measures being proposed will be a long-term measure and will commence implementation prior to proposed construction, and remain for the life-time of the proposed project.

One submission claims that Section 5.1.1.3 of the BMP is contradictory, in that it highlights disturbances that affect Hen Harrier within the proposed wind farm site, while these will also apply to the proposed compensatory lands (for habitat management). It is true that Section 5.1.1.3 highlights the potential negative effects associated with disturbance, but it also discusses how this will be managed to minimise such effects.

It was questioned in one submission whether the Rush Management plan can be implemented considering that the use of heavy machinery or mowers on this rough upland terrain would be impossible. The text states that "mechanical control may be required", not that clearance would only be done via machinery. The plan is only an outline and is not definitive in the way rush management would be undertaken which would be dependent on conditions and would be outlined in the farm plan. The same submission also claims that none of the references in the Biodiversity Management Plan show any proof regarding moving hen harrier habitats from one area to another. Regarding 'moving habitats' - no habitat translocation is proposed. Creating new habitat is not a new technique and it is reasonable to expect heathland to develop where plantation is removed at Knocknasheega.

One submission suggests that the proposed Biodiversity Management Plan is not compliant with Annex I of the Birds Directive (Directive 2009/147/EC) and the Habitats Directive (Directive 92.43/EC). The affected Annex I habitats (wet/dry heath) are not qualifying features of an SAC. Neither would they be likely to be since they are not 'outstanding examples' in the

relevant Atlantic biogeographic zone. Listing of habitats within Annex I of the Habitats Directive does not in itself equate to their protection. Therefore, there is no contravention of the Habitats Directive. Further, as discussed elsewhere, the losses to these habitats, which are not in good condition, are minor compared to the retained extents to which improvement in condition can reasonably be expected with the measures in the BMP.

7. LANDS, SOILS AND GEOLOGY

The following section provides responses to the observations received which relate to Land, Soils and Geology. They are divided into a number of topics, under the headings below. The EIAR chapter and this response were prepared by TOBIN.

7.1 PEATLAND

An observation submitted by the DAU, and five other observations, refer to the proposed location of the site access tracks around Knocknanask and the potential associated risk to the hydrological integrity of the adjacent blanket bog thereon. Observations highlight that active blanket bogs are dependent on a delicate balance of water flow, and even minor disruptions can cause a significance habitat degradation. Hydrological alterations can lead to peat drying, oxidation and subsidence, which may permanently damage the bog's ability to sequester carbon and support its characteristic biodiversity.

An active blanket bog ecosystem generates its own water table through the accumulation of water-saturated peat on low permeability soils. There is no active blanket bog/peat on the proposed wind farm site or on Knocknanask, due to the extensive areas of turf cutting/extraction and the residual presence of peat banks as described in Section 8.4 of the EIAR. Based on the specialist ecological surveys and site walkovers by ecologists and hydrogeologists there is no blanket bog within the footprint of the proposed infrastructure, as also detailed in Chapter 6 of the EIAR (Biodiversity). As the cutover blanket bog outside the footprint of the proposed infrastructure is not actively forming, there is no current carbon sequestration. The areas of degraded (inactive) blanket bog are located upgradient of the proposed wind farm footprint and have little to no peat.

The proposed access to T1-T5 generally follows the existing/established excavated access tracks on the proposed wind farm site. The proposed wind farm has avoided area of blanket bog. Based on the trial pit data from the Site Investigation Report (Appendix 2-9 of the submitted EIAR), which details the site investigation that took place between October 2023 and January 2024, groundwater is not within 1 m of the surface and therefore there will be no significant effects on groundwater or degraded peatland. The habitat here is dependent on rain and surface water rather than groundwater. As stated above, the proposed access tracks are not located on blanket bog.

7.2 SOIL/PEAT STABILITY

A concern relating to soil stability was raised by An Taisce. The proposed wind farm is located in an upland area with limited peat soils or peat, particularly at the proposed infrastructure footprint.

The Peat Stability Risk Assessment (PSRA) was carried out by an independent expert in accordance with Peat Landslide Hazard and Risk Assessments, Best Practice Guide for Proposed Electricity Generation Developments – Second edition (Scottish Government, 2017). The report is provided as Appendix 8-1 of the submitted EIAR and sets out the methodology used to assess the peat stability risk, the activities undertaken, and the results of the peat stability assessment. The report should be read along with Chapter 8 (Lands, Soils and Geology)

of the submitted EIAR (PSRA). Following application of mitigation measures, including consideration to the siting of infrastructure to minimise the risk, the findings of the planning stage PSRA indicate a *"low"* to *"negligible"* hazard ranking for instability related to the requirement for excavations on the site.

Although the landslide susceptibility risk rating assigned by the Geological Survey of Ireland on the online landslide susceptibility map viewer does show areas of concern within the site, this mapping does not account for the higher resolution, site specific data that the PSRA was based upon.

Site surveys relating to the soil and geological environment and ground investigations were undertaken between August and January 2023. These surveys included:

Site walkovers by Ciaran Reilly & Associates and TOBIN staff between August 2023 and November 2023 to review the ground conditions and assess the topography, geomorphology, and requirements for site investigations,

32 nr peat probes and hand vane tests by Ciaran Reilly & Associates staff throughout the site,

99 nr peat probes by TOBIN staff throughout the site,

9 nr Russian sampler borings, 24 nr trial pits, and 6 nr rotary core boreholes by Ground Investigations Ireland throughout the site.

The results of these can be found in Appendix 2-9 of the submitted EIAR. There are no significant peat deposits within the footprint of the proposed project.

The site is considered low risk due to site specific information and limited extent of shallow peaty soils on the proposed wind farm. Where shallow peaty soils or peat is present, peat stability risk is limited as detailed in the PSRA.

The NPWS (DAU) raised a concern relating to the erosional potential of surface water due to the concentration of flow below the proposed site access track. The outfalls from all of these pipes will be fitted with level spreaders to ensure diffuse overland flow. Level spreaders are an widely accepted and proven measure which are used in best practice that reduce the erosive energy of concentrated flows by distributing runoff as sheet flow to stabilised vegetative surfaces. Level Spreaders may also improve water quality by providing a filter strip in accordance with SuDS. The proposed measure reduces the erosive force and treats runoff by vegetative filtering, and promotes removal of particulates. The concentration of the flow at these pipes will also be minimised through the use of short spacing between them (i.e. minimising the amount water in any given pipe) as well as the use of permeable material for the build-up of the proposed site access tracks to minimise the water being collected. Further details are provided in Chapter 9 of the submitted EIAR (Hydrology and Hydrogeology). These measures combined will ensure that the integrity of the soils immediately downgradient of the proposed project footprint will not be compromised and significant erosion will not take place. Details of the measures are included in Chapter 9 of the EIAR (Hydrology and Hydrogeology), SWMP (Appendix 9-1 of the EIAR) and the CEMP (Appendix 2- 8 of the EIAR).

7.3 Borrow Pits and Bedrock Integrity

Four observations raised concerns that the works in the proposed borrow pits may affect bedrock integrity; such as causing bedrock in the area to crack or fissure. These proposed borrow pits will operate similar to quarries, and as such any damage to bedrock will be very localised to the area of that proposed borrow pit (i.e. within a few metres). The use of borrow pits aims to reduce the amount of traffic on public roads in the vicinity while also minimising the carbon footprint associated with transport of that material. After extracting the necessary rock from each proposed borrow pit, they will be reinstated using surplus inert material from the project site. There will be no likely significant effects on bedrock outside the proposed wind farm site. The potential effects on bedrock have been assessed in Chapter 8 (Land Soils and Geology) of the submitted EIAR.

One observation claimed that there was no information in the EIAR on the rock extraction methods for the proposed borrow pits. As described in Section 2.8.8.1 of Chapter 2 (Description) of the submitted EIAR, this will be carried out using two main methods of rock breaking and blasting. Noise and Vibration is assessed in Chapter 12 (Noise and Vibration) of the EIAR.

8. HYDROLOGY AND HYDROGEOLOGY

The following section provides responses to the observations received which relate to Hydrology and Hydrogeology. They are divided into a number of topics, under the headings below. The EIAR chapter and this response were prepared by TOBIN.

Hydrology and Dydrogeology are also addressed in the submitted NIS from a designated site viewpoint, and this ultimately found that there will be no adverse effects on the integrity of any European sites during development and operation of the proposed project, either alone or in-combination with any other plans or projects.

8.1 SURFACE WATER QUALITY

Nineteen observations were submitted with comments concerning the potential effects of the proposed wind farm on surface water quality of waterbodies within and in close proximity to the proposed wind farm site. These observations are considered under the sub-headings below.

8.1.1 Clear-felling of forestry

Concerns about the effects from clear-felling of forestry on surface water quality were raised in five observations. The proposed wind farm is located in an area of regular forestry operations including thinning, felling and replanting. As it is an area of commercially managed crop, this activity is ongoing in the area regardless of whether the proposed wind farm is constructed or not.

As part of the proposed wind farm, there will be a requirement to clear-fell some of the existing forestry in the areas immediately around the footprint of the proposed wind farm infrastructure. A small area of felling is also required on the Grid Connection Route (GCR). There is no felling required along the Turbine Delivery Route (TDR).

Clear-felling for the proposed wind farm will be in small compartments or coupes (1-3 hectares) within the 91 hectare felling area, with the exception of the Biodiversity Enhancement Felling Area (21.43 hectares). This area will be in a large block of generally poor productivity soil, and thus unlikely to yield a commercial timber crop.

Felling has the potential to impact adversely upon the environment if done in an uncontrolled manner; however, by the adoption of sound planning procedures, operating techniques and control measures as outlined in Chapter 9 of the EIAR (Hydrology and Hydrogeology) and the Forestry Report (Appendix 2-7 of the EIAR), there are no significant likely adverse hydrological or hydrogeological effects. All forestry operations associated with the proposed wind farm, including felling, are to be undertaken in accordance with current guidelines as listed in the Forestry Report (Appendix 2-7 of the EIAR), which also details practical measures to protect the existing environment. Silt and sediment control measures are outlined in Section 1.6.1.1.2 of the Forestry Report (Appendix 2-7 of the EIAR) and in Section 6.2.1 of the NIS.

Subject to receipt of consent for the proposed wind farm, the developer will apply to the Forest Service for a Felling Licence for clear-felling works, in line with the requirements of the Forestry Act, 2014. A felling licence granted by the Minister for Agriculture, Food and the Marine provides authority under the Forestry Act 2014 to fell or otherwise remove a tree or trees and

to thin a forest for silvicultural reasons. The proposed wind farm must have obtained planning consent before an application can be made for a felling license from the Forest Service, as per their policy on tree felling for wind farms. As part of this process, an area of at least an equivalent size to that which will be permanently felled must be replanted. This replanting land can be located anywhere within the state (removed from the proposed project), provided an afforestation license is granted for the land.

During the operational phase, a number of the clear-felled areas will be replaced with low nutrient input areas including the bat buffer areas around turbines and in the biodiversity enhancement areas. This will have the effect of reducing the nutrient loading to the local surface water bodies in the medium and long term as detailed in Chapter 9 of the EIAR (Hydrology and Hydrogeology) and Forestry Report (Appendix 2-7 of the EIAR). There are no likely significant effects on water quality during the operational phase.

Based on the above, with the implementation of mitigation and measures outlined in the EIAR, the proposed wind farm will not cause a deterioration in surface water quality. See Section 8.1.3 for more information relating to the quality status of water bodies.

8.1.2 General Construction

A number of queries were raised regarding the construction and the potential effect of hydrocarbons and sediment.

Several measures are embedded into the project design and follow best practice measures that will be employed as standard to ensure that there are no significant effects. Drainage mitigation measures are included in Chapter 9 of the EIAR (Hydrology and Hydrogeology), SWMP (Appendix 9-1 of the EIAR), the CEMP (Appendix 2- 8 of the EIAR) and the NIS.

Examples of measures include the bunding of fuel, installation of hydrocarbon interceptors and sustainable drainage measures in accordance with CIRIA Document C741 'Environmental Good Practice on Site' (CIRIA, 2015). Concrete is required for the construction of the turbine bases and foundations. Wash out of the main concrete mixing drum will not be permitted on site; wash out is restricted only to chute wash out. Wash down and washout of the concrete transporting vehicles will take place at an appropriate facility off-site. There are no likely significant effects on water quality during the operational phase.

Detailed monitoring is proposed on the site and included in the SWMP (Appendix 9-1 of the EIAR).

8.1.3 Water Framework Directive

A total of 15 no. observations raised matters in respect of the WFD, with a focus on the current High to Moderate Status of the Glenshelane River and High Status of the Glennafallia and Farnane River, and the potential for short-term effects on these surface water bodies. Queries were also raised in relation to blue dot status of the water bodies.

Blue Dot is not an official term from the Water Framework Directive (WFD) itself, but rather a nickname for high water bodies defined by the WFD. The WFD establishes a classification system for the ecological health of water bodies, with five status classes:

- High (Blue Dot)
- Good
- Moderate
- Poor
- Bad

The blue dot status does not align with the latest WFD status and therefore the term is not used in the WFD assessment (provided in Appendix 9-1 of the EIAR). The Blue Dot river basin at the site is named the Owennashad Blue dot, a reference to the Owennashad River located over 6km to the west of the proposed wind farm. The status of each WFD subbasin is determined and included in the WFD Compliance Assessment, available as Appendix 9-1 of the EIAR. The status of the river bodies is outlined in Section 9.3.2 in Chapter 9 of the submitted EIAR (Hydrology and Hydrogeology) and the WFD compliance assessment (Appendix 9-1 of the EIAR). The current WFD status (data accessed on 9th December 2025) is based on updated status period (2019-2024). All river subbasins at the proposed project are at Good or High Status (Glenfallia_010). The proposed construction methodologies and associated mitigation measures are consistent with the current best practices and have been used successfully for projects around Ireland over many years.

The measures outlined in the WFD Compliance Assessment (Appendix 9-1 of the EIAR), Forestry Report (Appendix 2-7 of the EIAR), SWMP (Appendix 2-10 of the EIAR) and in Chapter 9 of the EIAR (Hydrology and Hydrogeology), are comprehensive and will treat runoff from the proposed wind farm. Runoff from the construction will be attenuated and treated before being allowed to infiltrate or discharge from the proposed wind farm site, ensuring that any sediment build-up or pollutants are captured on the proposed wind farm site rather than released into the wider environment. The short term construction phase will not result in a deterioration in surface water flow or quality.

Research from Heal et. al. (2019) looking at long-term monitoring at the Whitelee wind farm in Scotland, one of Europe's largest onshore wind farms, revealed that even where there might be temporary increases in macronutrients, these effects were localised and water quality recovered to pre-construction levels soon after the construction phase[36]. The research underscores that adherence to best practice guidelines—such as limiting disturbance, managing runoff, and avoiding sensitive areas—can minimize and rapidly reverse any short-term impacts on surface water quality. A large number of catchments where windfarms were constructed maintained good to high Status both during and after construction. Examples include Bellacorrick wind farm, Oweninny I and II, Co Mayo, Galway Wind park and An Cnoc and Ballybay Windfarms, Co. Kilkenny. Mitigation measures are outlined in Chapter 2 (Description of the Proposed Project) and Chapter 9 (Hydrology and Hydrogeology) of the submitted EIAR, and in the CEMP (Appendix 2- 8 of the EIAR). The potential effects during construction are negative, slight/ indirect, short term and unlikely on surface waterbodies.

[36] https://doi.org/10.1007/s13280-019-01200-2

In relation to potential likely significant effects on the Glenshelane River and Blackwater (Cork/Waterford) SAC (due to its proximity to construction), a number of design measures and mitigation measures were outlined in the SWMP (Appendix 9-1 of the EIAR) and the NIS. Measures include the use of a clear span bridge crossing, triple silt fencing and hand felling within 25 m of the stream. Effective implementation of the SWMP measures is key and works on the proposed wind farm site will cease under the direction of the Environmental Managerin the unlikely event that mitigation measures aren't performing as required, as stated in Section 9.5.1.1, Chapter 9 (Hydrology and Hydrogeology) of the submitted EIAR. The methods listed in the EIAR and SWMP are proven mitigation measures and have been carefully chosen to reduce potential impacts.

The site will undergo regular audits as set out in Section 2.2 of the CEMP (Appendix 2- 8 of the EIAR) and will be monitored as detailed in the SWMP. There will be continuous turbidity monitoring both upgradient and downgradient on these rivers during the pre-construction phase and the construction phase, as outlined in the SWMP (Appendix 2-10 of the EIAR). There will also be extensive surface water monitoring during pre-construction, construction and post-construction, including visual inspection, water sampling and site walkovers. These measures, along with further mitigation measures outlined in Chapter 2, Chapter 9 and CEMP (Appendix 2-8 of the EIAR), will be implemented to ensure that the proposed wind farm will not compromise progress towards achieving Good Ecological Status or cause a deterioration of the overall status of these surface waterbodies during the construction or operational phases (current status varies from good to moderate).

8.1.4 Bisphenol A in wind turbine blades

Concern about Bisphenol A (BPA) and microplastic pollution in surface waterbodies due to wind turbine blades was raised in six observations. The concerns raised and the potential loss of microplastics and BPA from turbine components is discussed in detail in Section 5 (Population and Human Health) of this document. To summarise, it is considered that there is a negligible risk for significant quantities of such material to be shed from these turbines. Based on this, there is no likely significant effects on water quality.

8.2 Groundwater Quality and Water Supply Augmentation

Concern was raised in six observations relating to the potential for the proposed wind farm to negatively impact on public water supplies, including Modeligo/Newtown and Moore's well. It is worth noting that Uisce Eireann are of the view that the potential risk to public water supply is low.

There are two groundwater abstractions located to the south of the proposed wind farm site:

- Modeligo PWS water supply abstraction point is located over 1 km to the south-east of turbine 15 (T15) in the townland of Newtown and approximately 0.3 km from the closest proposed construction works (proposed wind farm site entrance); and
- Moore's Well PWS water supply abstraction point is located over 2 km to the south of T15 and approximately 1.5 km from the closest proposed construction works (proposed wind farm site road).

The area around T15 is underlain by deep subsoils with high to moderate groundwater vulnerability. Soils at T15 comprise soft to firm brown sandy slightly gravelly CLAY. The bedrock underlying the proposed wind farm site largely consists of the Knockmealdown Sandstone Formation. Permeability in the Knockmealdown Sandstone Formation decreases rapidly with depth. No significant inflows were identified in the onsite boreholes. In general, the Devonian Old Red Sandstone (DORS) transmissivities will be in the range 2 - 20 m^2/d, with median values occurring towards the lower end of the range. Based on the low permeability and short flowpaths there are no potential significant effects on the public water supply.

A small number of comments raised concern about the potential impact on private wells also. There is one private well located within the proposed wind farm site, 0.25 km to the northwest of the proposed substation. The use of the well predates the forestry development and an agreement is in place with the adjoining landowner. The well is located away from the infrastructure and therefore significant effects are unlikely. An alternative supply to this well will be provided in the event of interruption of the water supply. The existing groundwater well on the proposed wind farm site and onsite groundwater wells will be monitored on site during construction and for a period following cessation of construction activities (details of this are to be agreed with the relevant authorities pre-construction).

Further to this, scientific research shows that wind farms, when constructed to the latest best practice, can avoid impacts on local groundwater aquifers. A peer-reviewed publication by *Valente et al.* in 2022 relating to a hydrogeological study in karst environments demonstrates that wind farm construction, when carefully managed, does not result in detectable anomalies in groundwater quality or supply[37]. Monitoring of spring water before, during, and after construction found no significant changes in chemical or physical water characteristics attributable to wind farm activities, even in sensitive recharge zones directly connected to major springs. Similarly, research on wind farms constructed on coastal dunes in Brazil (*Gomes et al.*, 2019) found that, although aquifers in the vicinity may be naturally vulnerable, groundwater samples remained within safe limits for human consumption after wind farm installation[38]. The study highlights that impacts on groundwater levels and quality are more closely related to underlying geology and natural vulnerability than to the presence of wind farms themselves.

Potential effects on groundwater are assessed in Section 9 of the EIAR. Mitigation measures are outlined in Chapter 2 and Chapter 9, and the CEMP (Appendix 2-8 of the EIAR).

[37] https://www.mdpi.com/2071-1050/14/19/11975
[38] https://doi.org/10.4136/ambi-agua.2430

9. SHADOW FLICKER

Any of the observations that had comments or raised issues relating to shadow flicker are addressed here. The comments have been dealt with under a number of headings below which cover the topics raised in the observations. The EIAR chapter and this response were prepared by TOBIN.

9.1 GENERAL CONCERNS OF POTENTIAL IMPACTS

The most common concerns raised for shadow flicker (with 13 no. comments) related to the general potential impacts there may be on households and those within. The Applicant is committed to minimising any adverse effects from the proposed project on the local community and is committing to ensuring a near-zero shadow flicker at the shadow flicker receptors identified within 1.63km (ten rotor diameters) of the proposed wind turbine locations. This means that all potential shadow flicker occurrences for properties, as mentioned in Table 10-1 (see Chapter 10 (Shadow Flicker) of the submitted EIAR) should be assured that this will not occur. As described in Section 10.5 of the submitted EIAR, these measures include turbine shutdown and screening, the latter of which will only be considered if the property is either naturally screened (by topography, buildings, vegetation, etc.) or where the homeowner is happy to accept such measures. These proposed mitigation measures are proven and widely used in the wind energy industry.

Furthermore, an updated model will be run at the pre-construction phase once the detailed specifications of the chosen turbine model are confirmed. That will be used for the basis of the turbine control programme. Two observations raised a concern that the actual turbine that is built may not be the same as that which was modelled in the EIAR. As explained in Chapter 10 of the EIAR, the model used accounts for any possible combination of dimensions that can be built. That is because the model accounted for the entire possible swept area from any possible turbine option (from the proposed dimensions), and it is not possible for the turbines to extend beyond this.

There will also be a method in place for a local resident to notify the wind farm operator about any issues relating to shadow flicker so the occurrence can be checked and the curtailment programme can be updated if required. One submission asked if there would be such a system in place. Various points of contact would be available. The projects website will have a contact email address, contact phone number, postal address and contact details of the operators assigned community liaison officer.

The incorporation of set-back distances from the proposed turbines to properties, which have been considered and implemented in the design of the wind farm layout, means that there are no sensitive receptors located within <800m of a proposed turbine location. This measure, along with the implementation of screening and turbine shutdown mitigation measures as set out in Section 10.5 of the EIAR, will ensure that there are no effects of shadow flicker on the local community.

9.2 Potential Health Impacts

Five submissions stated that they had concerns relating to the potential health impacts that might be associated with shadow flicker for the local residents. Firstly, it is important to remember that the proposed project will achieve near-zero shadow flicker for local residents as described in Section 10.5 of Chapter 10 (Shadow Flicker) of the submitted EIAR and in the dedicated heading below. As also discussed in that submitted EIAR chapter, any residual shadow flicker that might occur while the proposed turbines are turning off) will not have a significant impact on nearby sensitive receptors.

Even if the proposed project was not planning to achieve near-zero shadow flicker and it planned to simply adhere to the current (2006) WEDGs of less than 30 minutes per day/30 hours per year, there would be no significant effects for the local residents. Achieving the near-zero shadow flicker ensures that any effects are mitigated in line with the industry best practice and that shadow flicker will not cause a nuisance for local sensitive receptors. The threat to people with photosensitive epilepsy was pointed out in particular as a concern. Photosensitive epilepsy is most commonly triggered by visual stimuli flashing at frequencies between 3 and 30 Hz, with the highest sensitivity in the 15–20 Hz range. Wind turbines, especially modern large-scale models, typically rotate at much lower speeds. The flicker frequency produced by a wind turbine is determined by the number of blades and the revolutions per minute (RPM). Modern large-scale turbines typically turn at between 10-20 RPM. For example, a three-bladed turbine rotating at 20 RPM produces a flicker frequency of 1 Hz (3 blades × 20 RPM ÷ 60 seconds), which is well below the threshold known to provoke seizures in susceptible individuals (Smedley et.al., 2009)[39].

Further discussion relating to health concerns raised in the observations can be found in Section 5 of this document.

9.3 Exclusion of Non-Sensitive Receptors

One submission queried if a building which was a business as well as a home would be included, and the project team can confirm that such properties have been considered, as all homes with an Eircode were included in the modelling, as well as any that were found from a ground truthing survey. The ground truth survey followed the desk study and involved driving along roads in the area surrounding the proposed wind farm site to check for any additional dwellings (e.g. any built without consent, very new structures, etc.) and confirm the status of unknown structures.

One submission raised a query about the exclusion of sheds from the assessment. Table 10-1 of the submitted EIAR lists all of the properties considered in the assessment. During the verification process, any properties/buildings identified that would not be considered sensitive receptors (i.e. farm sheds, garages etc where people don't reside) were omitted. Only habitable dwellings and planning consented habitable dwellings were included as shadow flicker receptors, as per the current (2006) WEDGs and the Draft Revised WEDGs (2019) on undertaking this type of assessment.

[39] Smedley, A., Webb, A., & Wilkins, A., 2009. Potential of wind turbines to cause epileptic seizures under different meteorological conditions.

9.4 NEAR-ZERO SHADOW FLICKER

One observation queried what was meant by "near-zero" and suggested this would allow the wind farm operator the scope to allow shadow flicker. The term was used in Chapter 10 of the submitted EIAR (Shadow Flicker) to ensure full transparency. As soon as the correct set of parameters is in place for a potential occurrence of shadow flicker, the turbine would immediately undergo a stopping procedure. The time it takes for a wind turbine to safely stop spinning depends on several factors, including wind conditions, turbine size and braking systems. As mentioned in Section 10.5.1 of the submitted EIAR, this can take anywhere up to 1-2 minutes and will often take less time than that if the wind speed is not very strong.

9.5 CUMULATIVE ASSESSMENT

Three submissions raised concerns about the potential cumulative effects from other nearby wind farms. These included other wind farms that occurred within a distance of the sum of 10 times the rotor diameter of both wind farms. The only other wind farm which was proposed within this area and so was included in the cumulative assessment was Dyrick Hill Wind Farm. This has since been refused planning permission, and so this concern is no longer relevant, although the refusal is currently subject to a legal challenge (adjourned) at the time of writing this document (25th November 2025). The submitted cumulative assessment was robust and as the proposed Scart Mountain Wind Farm is committing to achieve near-zero shadow flicker this would not have been a significant issue, as discussed in Chapter 10 (Shadow Flicker) of the submitted EIAR.

10. MATERIAL ASSETS, TELECOMMUNICATIONS AND AVIATION

Any of the observations that had comments or raised issues relating Material Assets (which includes telecoms, aviation and other material assets such as waste, electrical and water services) are addressed here. The comments have been dealt with under a number of headings below which cover the topics raised in the observations. The EIAR chapter and this response were prepared by TOBIN.

10.1 TELECOMMUNICATIONS

There were a small number of observations relating to telecommunications. These generally fell into the following categories.

10.1.1 Satellite communications

It was suggested in one submission that the telecoms impact assessment was not complete as it did not consider the potential effects on satellite communications in the super high frequency (SHF) band, specifically relating to satellite broadband and television. Satellite signals are generally not considered as part of telecommunication impact assessments for wind farm EIARs, and they were not specifically covered in Chapter 11 of the EIAR (Material Assets). Satellite signals can be impacted by overhead or adjacent objects (trees, buildings, etc.) which could block the signal to that device. Given the separation distance from dwellings and the proposed turbine locations, it is extremely unlikely that wind turbines would be tall enough to interfere with the satellite signal. Communication satellites relating to consumers can be either geostationary at a high orbit, relating to television such as Sky TV, or those moving at high speed in low earth orbit (LEO) constellations such as Starlink. TV satellites in the area of the proposed wind farm site are located approximately 25 degrees in elevation in an approximately south-east direction. For most houses in the surrounding area this would point their receiving dishes away from the proposed turbines. Even if a turbine was in the direction the dish was pointing, at an angle of 25 degrees, the signal would already be higher than the proposed 180m tip height at a distance of 400m from the dwelling. This would be close to twice the height of the proposed turbines at four times tip height separation which is being proposed. The LEO satellite broadband systems comprise a web of large numbers of satellites of which a number would be available to a given device at any one time. This means that even if one was blocked by a turbine or the horizon, another satellite would be used instead. For the above reasons, satellite communications will not be affected and are not routinely assessed as part of wind farm EIARs.

10.1.2 Scoping

It was noted in one submission that all telecommunication companies did not respond to the scoping requests. It is not within the control of the project team to force companies to respond to scoping requests. Initial emails were sent out in April 2022, with follow up reminders sent to 8 no. companies that did not respond in June and September 2022. It was also mentioned that a number of telecoms operators were not consulted. The list of companies consulted was provided in Table 11-1 in Chapter 11 (Material Assets) of the submitted EIAR. At the time of scoping (mid 2022), Commission for Communications Regulation (ComReg) was consulted and they provided a list of all the companies that operated within 10km of the proposed project. This list was crosschecked against the list of scoping consultees to ensure no provider was missed

from the scoping exercise. It is possible that additional companies have begun operation since the assessment was carried out and it is also likely that there will be additional companies operating in the area by the time construction starts on the proposed project. In any case, at the pre-construction phase the locations of any telecommunication links and the operations of service providers will be reassessed and updated to ensure that there were no new links in the area. In the unlikely event that the proposed wind farm caused any issues for a telecommunication link, an agreement will be made to ensure that the link could remain in operation through the mitigation measures discussed in Section 11.5 of the submitted EIAR. Similarly, if a wireless broadband link to a dwelling was found to be affected by the proposed project, then this will be mitigated by the developer. Also as mentioned in the EIAR, the developer will sign an agreement with 2RN prior to construction to commit to restoring TV or radio service to any end users that may have their service disrupted as a result of the proposed project.

10.1.3 Other

It was suggested in one observation that there was no cumulative effects considered relating to the nearby wind farms. A cumulative impact assessment was carried out in Section 11.7 of Chapter 11 (Material Assets) of the submitted EIAR.

The potential for wind turbines to affect end-user mobile phone signal in the area was raised in one submission. Mobile phone signal is not significantly interfered with by wind turbines. Mobile phones currently operate without issue in and around wind farms around the world. Research on wind farm impacts on telecommunications (Angulo *et. al.*, 2014) highlight that while some services (like radar or analog TV) may experience interference, mobile phone networks—especially those using modern digital standards—are highly robust against such effects and are not significantly impacted by the presence of wind farms[40].

10.2 Aviation

There were no concerns raised relating to aviation and the associated EIAR assessment. The Irish Aviation Authority (IAA) did recommend a number of planning conditions that should be imposed if the proposed project is permitted. These relate to notifications ahead of construction (and use of cranes), design of aeronautical obstacle warning lighting scheme, and sending confirmation of exact turbine coordinates and details (particularly tip height) ahead of construction. The developer is willing to accept these conditions.

10.3 Other Material Assets

One submission noted that turbine components pose an environmental risk at the end of their life, and suggested that there was no information or consideration of this in the EIAR, however this has been addressed in Section 11.4.4.2 of Chapter 11 (Material Assets) of the EIAR. This discusses recycling of turbine components and how any waste material is dealt with appropriately to minimise the risk to the environment. It notes that recycling potential for

[40] https://doi.org/10.1016/J.RSER.2013.12.055

turbine blades in particular has recently increased and recyclable blades will be phased in over the coming years.

Further to this, it is worth noting that the majority of a wind turbine's mass—up to 94%—is already recyclable, with the main challenge being the blades themselves[41] which have traditionally been difficult to recycle due to their fibre-reinforced polymer construction. Recent studies highlight several promising strategies and developments that mitigate the risk of wind turbines becoming a significant environmental problem at the end of their life. Mechanical, thermal, and chemical recycling methods for blades are being developed and refined. Mechanical (for glass fibre) and fluidized-bed (for carbon fibre) recycling are currently the most economically viable[42], while the latest research (*Alavi et. al.*, 2025) shows that chemical recycling (e.g., solvolysis, pyrolysis) shows strong environmental benefits[43], especially as recycling processes transition to renewable energy sources. These methods can also recover valuable materials, such as glass and carbon fibres, for use in the cement or plastic industry[44]. Repurposing initiatives, such as using blades in architectural or urban regeneration projects, further reduce landfill demand and support the circular economy.

There were no other significant observations relating to other Material Assets topics such as waste, water and electricity supply services. Any comments relating to the surface and groundwater has been discussed in Section 9 of this report above.

[41] https://journals.sagepub.com/doi/10.1177/0734242X221105434
[42] https://doi.org/10.1016/j.resconrec.2022.106202
[43] https://www.sciencedirect.com/science/article/pii/S0921344924005998?via%3Dihub
[44] https://journals.sagepub.com/doi/10.1177/0734242X221135527

11. NOISE & VIBRATION

Any of the observations that had comments or raised issues relating to Noise and Vibration are addressed here. The comments have been dealt with under a number of headings or themes below which cover the topics raised in the observations. The EIAR chapter and this response were prepared by AWN.

11.1 ASSESSMENT METHODOLOGY

11.1.1 Background Noise Surveys

Several observations were made regarding the number of locations used for noise monitoring in the background noise surveys.

As described in Section 12.3.2 of the EIAR, four monitoring locations were used for background noise monitoring. These locations are geographically well-distributed around the proposed wind farm site. All were situated in rural environments and were deemed representative of typical noise-sensitive locations (NSLs) within the receiving environment. This determination was based on professional judgement, site inspections, and on-site observations in accordance with the guidance in the Institute of Acoustic (IOA) document, *A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise* and Supplementary Guidance Notes IOA GPG.

A review of the measured background noise data did not indicate any unusual or atypical noise characteristics. The monitoring locations are considered representative of typical background noise levels in a rural environment.

Furthermore, during the preparation of the assessment for the proposed project, a review of the background noise survey results presented in the Dyrick Hill Wind Farm (located directly adjacent to the currently proposed project) EIAR Noise and Vibration Chapter (Planning Ref. No. ABP-317265-23) was undertaken. This review confirmed that the background noise levels recorded at the seven locations in the Dyrick Hill EIAR were broadly similar to those measured at the four locations presented in the EIAR for the proposed project. When comparing low background noise levels, defined as wind speeds where background noise is less than 30 dB, the Dyrick Hill EIAR survey recorded low background noise up to 4 m/s, whereas the proposed project identified low background noise up to 5 m/s. As a result, the proposed project applies more conservative turbine noise limits under the criteria outlined in the EIAR.

The consistency of background noise levels between the proposed project and the Dyrick Hill Wind Farm EIAR indicates that the selected monitoring locations are appropriate. The similarity confirms that the four surveyed locations are representative of the wider receiving environment, thereby providing a robust noise impact assessment.

It is confirmed that the background noise assessment presented in the EIAR is robust and has been undertaken in accordance with best practice guidance.

11.1.1.1 Application of Background Noise to Determine Turbine Noise Limits

Section 12.4.2.1 of the EIAR states:

"*The derived turbine noise limits have been assigned to the various NSLs where noise monitoring has been undertaken. Where background noise measurements have been conducted in the vicinity and/or are judged to be typical/indicative of the background noise levels at other locations, these can be assigned to the nearby representative location for the purposes of setting appropriate turbine noise limits for the assessment. This approach is in line with best practice guidance set out in the IOA GPG.*

To rationalise the assessment, a conservative 'envelope review' will be applied to all non-surveyed locations. The envelope review is a conservative approach that adopts the lowest noise criteria derived from the measured background noise levels and applies it to all non-surveyed locations for the purpose of the assessment."

The proposed wind turbine noise criteria presented in Section 12.4.2 of the EIAR are based on the background noise levels at specific NSLs. These criteria align with applicable guidelines and best practice guidance for wind turbine developments in Ireland.

11.1.1.2 Photographs of Monitoring Installations

Several observations noted that there were no pictures of the installed noise measuring equipment contained in the EIAR.

Section 2.5.10 of the IOA GPG states: "*Photographs of the equipment showing its position relative to the dwelling or other conspicuous features should also be provided, to inform the assessment and to enable the survey to be repeated at the same location if necessary. Permission to use these photos should be sought.*"

Table 12.5 of the EIAR provides the coordinates of the installed noise monitoring equipment. However, the photographs of the installations were not included in the EIAR at the request of the Applicant due to concern regarding permission having been received from the landowners to publish the images at the time. These pictures have now been provided and are shown in Figure 11-1 to Figure 11-4.

Figure 11-1 Noise monitor Installed at NML 1

Figure 11-2 Noise monitor Installed at NML 2

Figure 11-3 Noise monitor Installed at NML 3

Figure 11-4 Noise monitor Installed at NML 4

11.1.2 Turbine Noise

The methodology adopted for the assessment of wind turbine noise in the EIAR is in accordance with the applicable guidelines contained in the 2006 WEDGs, and supported by best practice

guidance for the assessment of wind turbine noise, namely, *A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Turbine Noise* (2013) and its *Supplementary Guidance Notes* (2014) (IOA GPG). Full details of guidance documents referenced for the assessment of operational wind turbine noise are presented in Section 12.2.2.3 of the EIAR.

Section 12.2.2.3.4 of the EIAR presents a statement that was submitted by the Minister for Housing, Local Government and Heritage during a Dail Eireann Debate on 13 June 2023. A more recent statement was submitted by the Minister for Housing, Local Government and Heritage during a Dail Eireann Debate on 19 June 2025[45] which similarly confirmed that the "*current 2006 Wind Energy Development Guidelines remain in force.*"

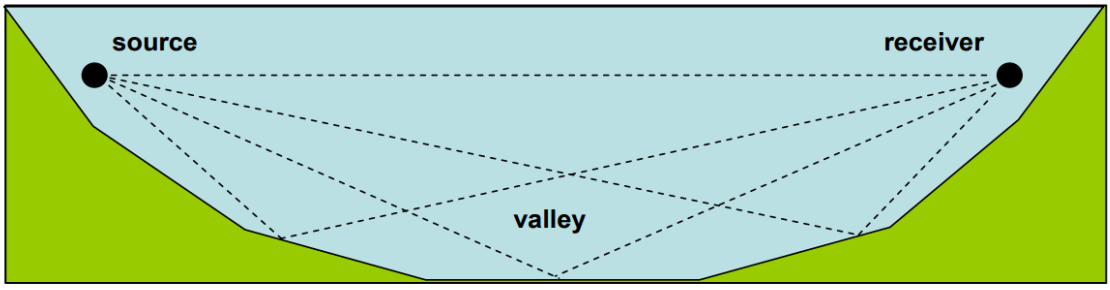
The operational noise calculations described in Section 12.3.5 of the EIAR and the supporting information in Appendix 12-3 of the EIAR describe the methodology used for the calculation prediction and assessment of wind turbine noise associated with the proposed development. The following statement from Section 12.6.4.1 is present to support this response:

"*Using the assessment methodology described in Section 12.3.5, the predicted turbine noise levels have been calculated at all NSLs within the study area of the proposed project. A conservative omni-directional 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 conditions favourable to noise propagation, i.e. downwind propagation from source to receiver and/or downward refraction under temperature inversions.*"

To address specific concerns raised in Observation no. 23[46] regarding noise propagation in the vicinity of Knocknamork Mountain the following additional clarifications are provided:

The IOA GPG guidance recommends that a correction be applied for propagation across a valley, i.e. a concave ground profile, or where the ground falls away significantly, between the turbine and the receiver location. Figure 12-5 taken from IOA GPG, illustrates the principle of acoustic reflections between the source and receiver across a valley or concave terrain.

Figure 12-5 Schematic diagram of multiple reflection paths for sound propagation across concave ground



The noise prediction calculations have been undertaken using Tailte Éireann ground topography data to account for noise propagation effects in line with IOA GPG guidance and the ISO 9613-2 Standard. The noise prediction software, *iNoise*, described in Section 12.3.5.1 of the

45 https://www.oireachtas.ie/en/debates/question/2025-06-19/308/

46 Julia Gorodecky and Others

EIAR incorporates appropriate corrections for valley propagation effects and terrain screening, when predicting turbine noise levels at NSLs this is applied in the calculations and assessment of the proposed project presented in Chapter 12 of the EIAR.

11.1.2.1 Computational Fluid Dynamics (CFD)

Observations 23[2] and 29[47] highlighted that Computational Fluid Dynamic (CFD) should have been utilised in turbine noise predictions.

CFD may be utilised by designers and turbine manufacturers to assess and research the effects of turbulence and turbine wakes on aerodynamic performance and noise generation. However, there are no published guidelines or recognised standards that incorporate a methodology for the use or application of CFD in predicting the propagation of noise from wind turbines. Accordingly, CFD does not form part of the formal noise impact assessment methodology.

11.2 Character of Wind Turbine Noise

11.2.1 Amplitude Modulation

Several observations raised concerns regarding potential negative effects from amplitude modulation associated with the operation of the wind turbines in the proposed project.

Section 12.2.2.5.2 of the EIAR presents a discussion on amplitude modulation (AM) in relation to wind turbines. The following statement is included in the EIAR:

"*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 12.6.3.1.*"

As stated in Section 12.2.2.5.2 of the EIAR, there is no recognised methodology for predicting amplitude modulation from the proposed project at the planning stage. Section 12.6.3.1 outlines proposed mitigation measures in relation to AM.

The commitment outlined in the EIAR to investigate and control AM is considered best practice. The proposed approach will ensure that any adverse impacts from excessive AM associated with the operation of the proposed project can be effectively managed by the operator of the wind farm.

[47] Liam Lacey

11.2.2 Low Frequency Noise and Infrasound

Section 12.2.2.5.1 of the EIAR presents a discussion on the evidence for low frequency noise and infrasound associated with the operation of wind turbines. The following additional comments are provided to support the EIAR:

An IOA statement in respect of Wind Farm Noise Assessment dated December 2024 and published on the IOA website[48] stated the following in relation to Infrasound and Low Frequency noise:

"*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 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.*"

11.3 Construction Noise

Several observations highlighted concerns regarding the audibility and impacts of noise during the construction phase of the proposed project.

Section 12.5 of the EIAR presents a detailed assessment of the potential effects of noise and vibration during the construction phase. The EIAR confirms that for all elements of the construction phase, the likely significant effects short-term and classified as 'Not Significant', with predicted impacts remaining within the recommended threshold and limit values contained in the best practice guidelines presented in Section 12.2.2 of the EIAR.

With respect to statements in the observations regarding the audibility of construction noise, it is acknowledged that construction noise will be audible at some Noise Sensitive Locations (NSLs). The following statement is reiterated from Section 12.9 of the EIAR:

> *"Residual noise associated with the construction and decommissioned phases have been predicted to be below the proposed threshold values. The associated noise and vibration levels are not expected to cause any likely significant effects at any NSL."*

In conclusion, the EIAR demonstrates that while the short-term construction noise may be audible at certain NSLs, the predicted levels remain within acceptable thresholds. With the implementation of best practice mitigation measures, the associated impacts are not expected

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

to be significant, ensuring that the construction phase can proceed without undue adverse effects on nearby sensitive receptors.

11.4 HEALTH IMPACTS

Several observations raised concerns about potential negative health impacts associated with operational turbine noise from the proposed project.

The assessment of noise and vibration has been undertaken in accordance with the applicable guidelines (2006 WEDGs) and best practice guidance and standards for operational phases of the proposed project as described in Section 12.2.2.3 of the EIAR. The assessment of Potential Effects presented in Section 12.5.4.1 of the EIAR confirm that all elements of the proposed development fall within the appropriate threshold values and noise and vibration limits identified.

Section 12.2.2.7 presents comments on potential health impacts from wind turbine noise. Specific concerns raised in observations 23[49] and 29[50] noted that these studies "were carried out over 10 years ago". In response, the following statement from Section 12.2.2.7 the EIAR is re-iterated here:

"*The peer-reviewed research outlined in the subsequent sections supports that there are no direct negative health effects on people with long term exposure to wind turbine noise in the environment. For further details of potential health impacts associated with the proposed project refer to Chapter 5 Population and Human Health of the EIAR.*"

Chapter 5 presents additional and more up-to-date research on the health impacts of wind turbine noise.

In summary, the EIAR provides a comprehensive and evidence-based assessment of noise-related health impacts. The inclusion of and reference to Chapter 5 further reinforces the robustness of the findings and supports the comments presented in Chapter 12.

[49] Julia Gorodecky and Others

[50] Liam Lacey

12. LANDSCAPE AND VISUAL IMPACT

Any of the observations that had comments or raised issues relating to Landscape and Visual are addressed here. The comments have been dealt with under a number of headings or themes below which cover the topics raised in the observations. The EIAR chapter and this response were prepared by Macroworks.

12.1 "EFFECTS ON AN AREA CLASSIFIED AS 'MOST SENSITIVE IN THE WATERFORD CDP AND IMPACTS ON SURROUNDING SCENIC DESIGNATIONS."

It is noted that a common theme in the observations relates to the Proposed Project's location within a 'Most Sensitive' landscape classification in the current Waterford County Development Plan (CDP) 2022-2028. The submitted LVIA fully recognises this designation, which is indicated in the Landscape Policy, Context and Designations section of the report in subsection 13.3.2 and shown on Figure 12-3 below. However, as noted in the submitted assessment, both the renewable energy classifications and landscape sensitivity classifications in the current CDP encompass a degree of ambiguity and are contradictory, especially with regard to the previous designations and classifications provided in the previous Waterford County Development Plan 2011-2017 (as extended). Indeed, as stated in the submitted assessment:

> *Whilst the current renewable energy strategy for County Waterford identifies part of the proposed project within an 'no-go' area, this is in stark contrast with the previous version of the Waterford Renewable Energy Strategy (formed part of the previous Waterford County Development Plan 2011-2017 (as extended)), which designated the site and surrounding landscape as an area 'Open to Consideration' in relation to wind energy development (refer to Figure 12.1 and Figure 12.2 below). It is also worth noting that this wind energy designation changed to a 'Preferred Area' to the northeast of the site. Whilst the current Renewable Energy Strategy identifies some rationale for the updated wind energy classifications throughout the county, it is still highly ambiguous how areas once classified as 'Open to Consideration' and 'Preferred' for wind energy development can now be classified as 'exclusion areas'. Whilst there is some consistencies with the updated 'most' sensitive landscape classification in the current CDP and the new 'No-go' area, there is no clear reason why the southern extent of the site, which is contained in a 'Low' landscape sensitivity classification is also located within a 'No-go' area.*
>
> *Furthermore, ambiguity also exists in relation to the 'most' sensitive landscape classification, which appears to be one of the principal drivers in relation to the 'No-go' wind energy classification. The 'most' sensitive classification cloaks almost the entirety of the uplands and their surrounding foothills. It is considered that this classification is overly simplistic and inaccurate. Whilst there is no argument that some of the more elevated upland areas within County Waterford are highly sensitive and have a low potential to accommodate development, these broad areas have wide-ranging sensitivities and values. In contrast to this, the rolling foothills surrounding these mountains are considered much less susceptible as many of these areas are currently characterised by anthropogenic land uses such as extensive areas of commercial forestry, overhead cable infrastructure, and pastoral farmland. Thus, it is considered that the broad brushstroke approach of classifying the entire uplands and their surrounding foothills as 'Most Sensitive' (the highest sensitivity classification in County Waterford), which has a strong influence on the wind energy*

classifications, is inaccurate / inappropriate and largely eliminates the potential for wind energy development within County Waterford

Further clear contradictions in the updated wind energy classifications are also noted throughout the Comergah Mountains. The eastern flank of the Comeragh Mountains comprises some of the most visually susceptible rugged ridgelines, steep rocky escarpments and highly scenic upland lakes, such as the Coumshingaun Lough. The previous wind energy strategy included this entire part of the Comeragh Mountains as a 'No-go' (refer to Figure 12.2), which is clearly associated with its highly sensitive nature and limited capacity to accommodate development of any type. In contrast, much of the eastern flank of the Comeragh Mountains is now classified as 'Preferred', (refer to Figure 13.6 of EIAR) and no logical explanation is given regarding this new positive wind energy designation.

Overall, Waterford has considerable potential to accommodate wind farm development along less visually susceptible foothill landscapes located throughout both the Knockmealdown Mountains and Comeragh Mountains including the site of the proposed project. Instead, the current Wind Energy Strategy has done a direct U-turn by classifying the more robust transitional landscapes as 'No-go' and some of the most highly sensitive and visually susceptible landscape areas as 'Preferred' wind energy classifications, without any clear or logical explanation.

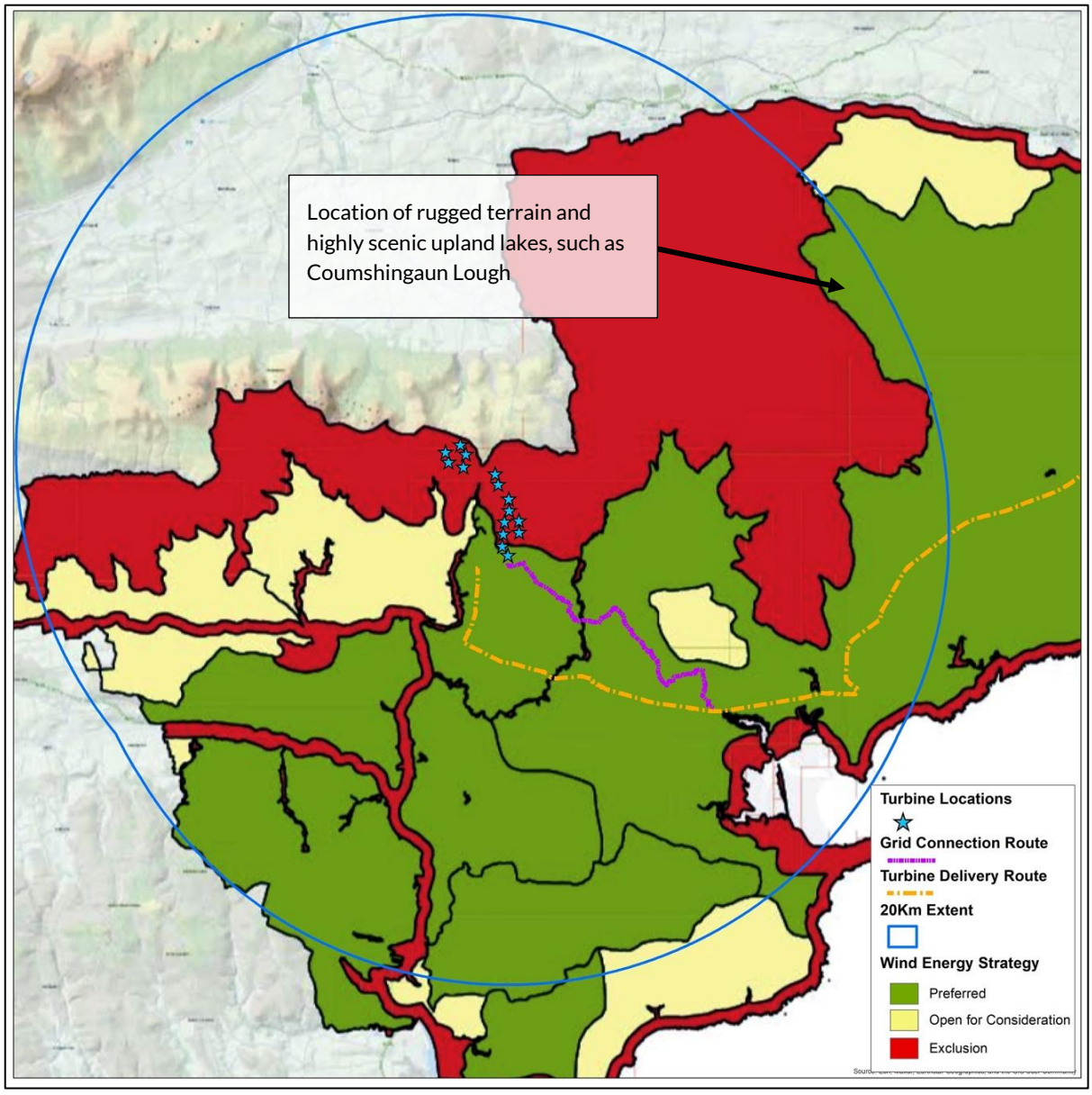


Figure 12.1 Excerpt from Appendix 2 of the current Renewable Energy Strategy showing updated wind energy classification areas in relation to the proposed project.

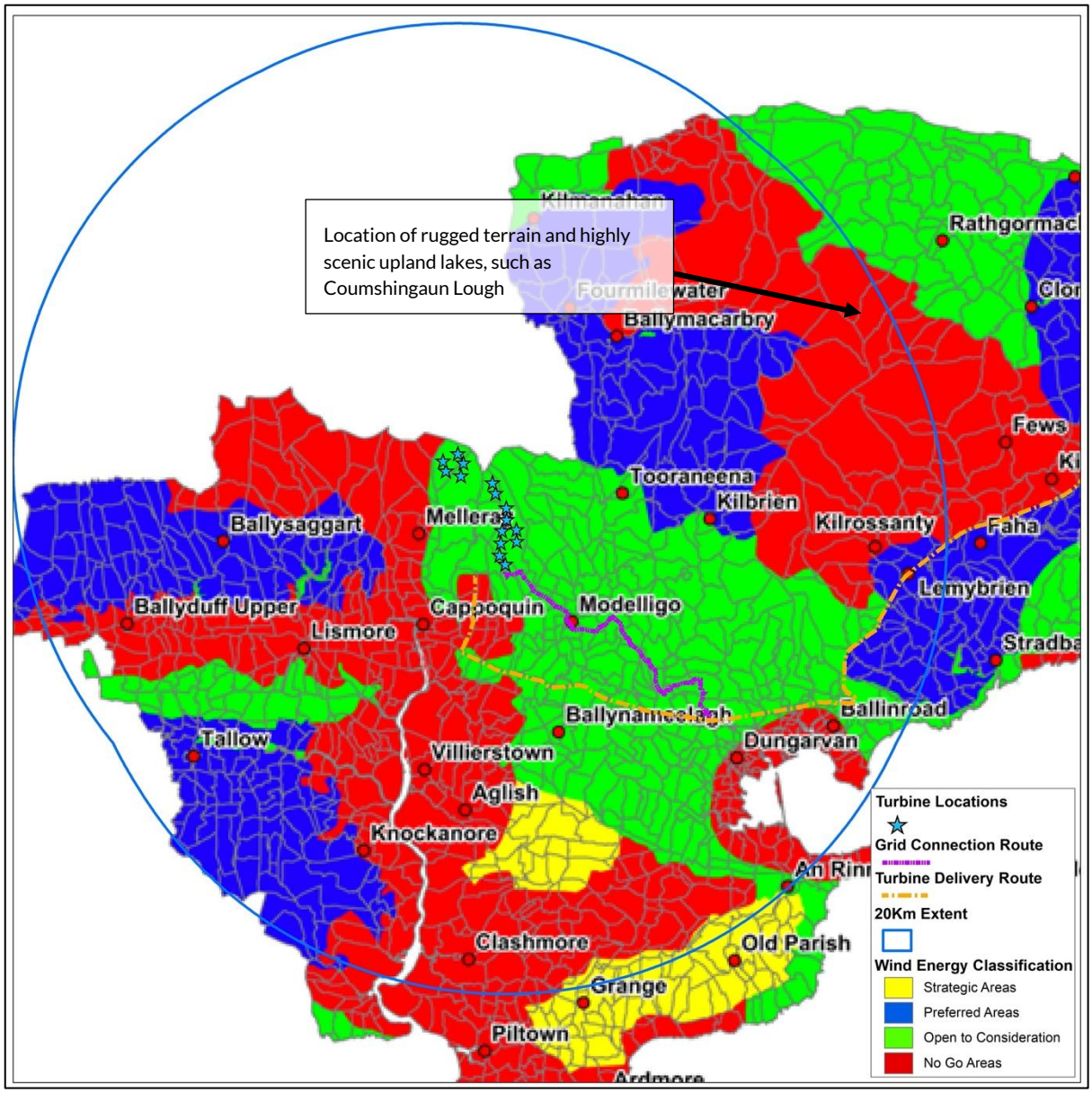


Figure 12.2 Waterford County Development Plan 2011-2017 – Wind Energy Strategy Map in relation to the proposed Project

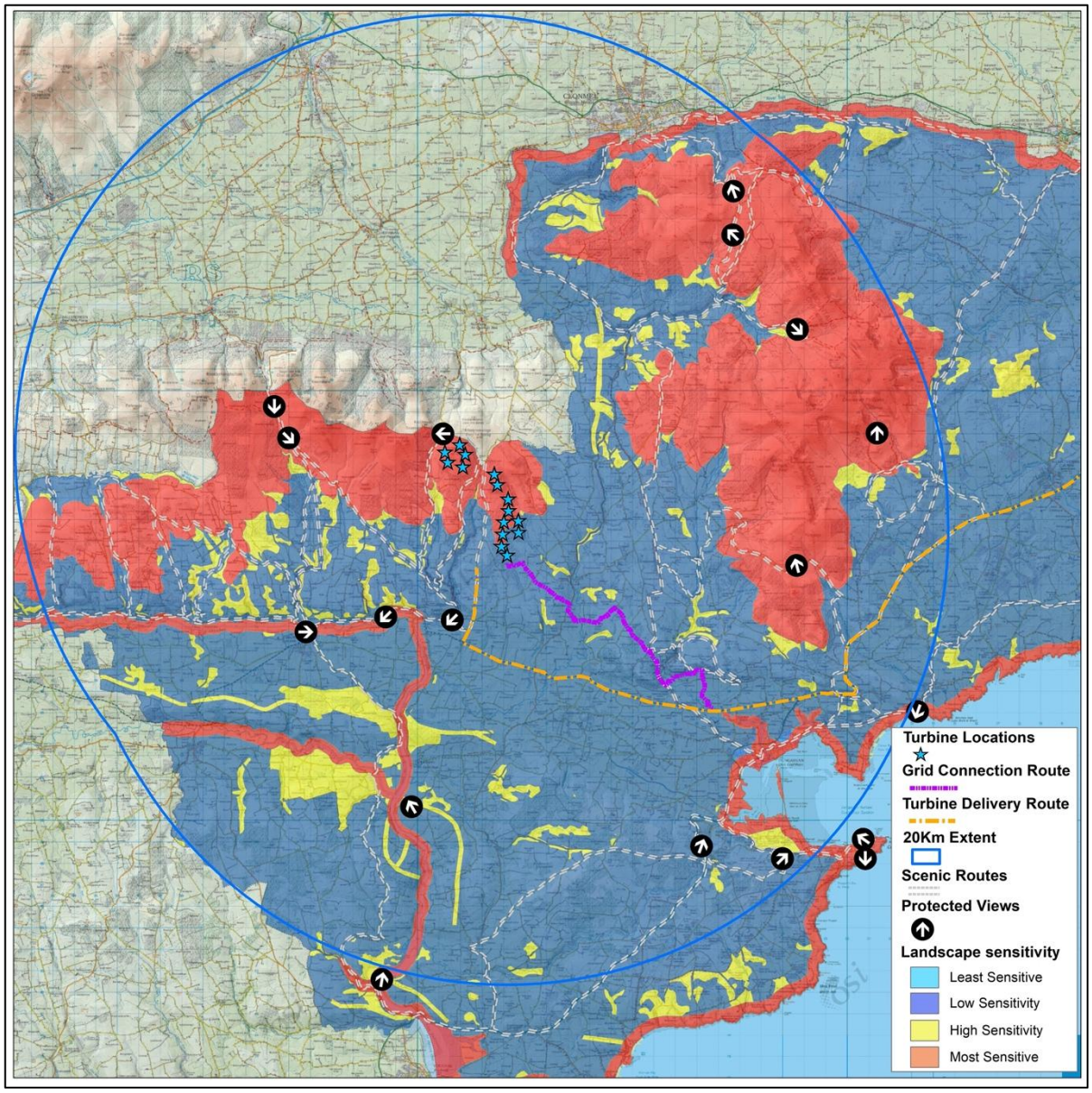


Figure 12-3 Excerpt from the Current Waterford City and County Development Plan 2022-2028 map viewer showing landscape sensitivity classifications in relation to the proposed project

Whilst this designation is noted, in line with the current guidance set out in the *Guidelines for Landscape and Visual Impact Assessment* 2013 (GLVIA3), the submitted LVIA also undertakes its own assessment of landscape sensitivity in subsection 13.6.1 of the submitted report.

Within this, it is noted that:

> *"Much of the central study (areas <5km from the site) area is heavily influenced by the foothill landscape in the surrounds of the Knockmealdown Mountains in County Waterford. The landscape of the central study area principally comprises rolling hills and winding river valleys, many of which flow down from the more upland parts of the Knockmealdown Mountains."*

Furthermore:

> *"Some parts of the central study area, principally the elevated hilltops and ridges on its western periphery, are more susceptible to change than the working transitional*

> *lands that cloak large parts of the central study area. It is not considered that it represents a 'highly sensitive' landscape setting. Instead, the central study area is heavily influenced by typical working land uses, even some of those more elevated lands in its western extent. This is a robust transitional landscape where typical productive rural landscape values outweigh scenic and naturalistic values that might be deemed more rare and vulnerable."*

Owing to the above reasons, it was deemed that the sensitivity of the central study area was **Medium**, with some localised areas of higher sensitivity. In contrast, the wider study area (areas from 5–20km from the site):

> *"Is richly varied, comprising an array of susceptible landscape areas and features. Nonetheless, the predominance of the wider study area is that of a robust settled rural landscape that is cloaked in a 'low' landscape sensitivity classification. On balance of the reasons outlined above, it is considered that the study area has an overriding Medium landscape sensitivity, although areas of 'High' and even 'Very High' landscape sensitivity are also situated within the study area and relate to the most elevated uplands, the coastline and enclosed river valleys."*

Overall, the assessment of landscape sensitivity undertaken within the submitted LVIA contrasts with some of the sensitivity designations within the current Waterford CDP. These principally relate to the broad-brushstroke approach of classifying both the most elevated uplands and susceptible landscape areas within the Knockmealdown Mountains, and the more robust rolling foothill landscape, within which the Proposed Project is situated, under the same 'Most Sensitive' classification.

With regard to the more sensitive parts of the surrounding study area, it is considered that these are often the more remote elevated uplands that present with a strong sense of distinctiveness. These include those to the west of the Proposed Project within the Knockmealdown Mountains, and those within the uplands in the Comeragh Mountains in the wider eastern extent of the study area. Indeed, these areas tend to be offset from the immediate surroundings of the site. The main elevated ridge of the Knockmealdown Mountains begins to rise prominently some 2–3km west of the site, with the most elevated summit situated approximately 5km west of the nearest turbines located along Knocknanask Hill. With regard to the Comeragh Mountains, these are afforded a considerable offset from the Proposed Project, situated in the wider eastern extent of the study area at distances greater than c. 10km from the proposed turbine array.

In this regard, the submitted LVIA designates a **Moderate significance** of operational landscape effect on the landscape in the immediate surrounds of the Proposed Project. Thereafter, and at increasing distances, the operational phase landscape effect will **reduce considerably,** as the Proposed Project becomes only a small component of the wider surrounding landscape context.

Overall, the Proposed Project will contribute to some degradation of the character of the surrounding landscape, which is accounted for in the submitted LVIA. However, with regard to the most susceptible parts of the surrounding landscape, such as the more remote upland areas to the west and in the wider eastern extent of the study area, the Proposed Project will have a more limited effect. This is principally as the proposed Project is contextually separated from those areas, being situated instead within the more robust transitional foothill landscape. It is these foothill landscapes that can accommodate a more notable degree of change than the more highly susceptible, distinct and remote upland areas, which is evidenced by the fact that the

existing Barranafaddock turbines are contained within an almost identical such landscape context, in the south-western foothills of the Knockmealedown Mountains in the wider western extent of the study area (see Figure 12-4 below).

Figure 12-4 Existing Barranafaddock turbines located along the south-western transitional foothills of the Knockmealedown Mountains

With regard to designated scenic amenity, several observations note that the proposed development will impact scenic designations within the study area, most notably those in the immediate surroundings of the site and within the context of the Knockmealdown Mountains. As per the submitted LVIA, Table 13.5 sets out all the scenic designations within the study area in both Waterford and Tipperary, and identifies their relevance to the Proposed Project. It should be noted that their relevance to the Proposed Project is determined by whether the scenic designations are located within the Zone of Theoretical Visibility (ZTV) pattern or if the orientation of the scenic amenity faces towards the Proposed Project. In this regard, 12 of the scenic designations were deemed relevant to the proposed development, while 16 of the 37 assessed viewshed reference points (VP1, VP2, VP4, VP8, VP11, VP13, VP14, VP18, VP20, VP23, VP24, VP26, VP28, VP29, VP36, VP37) were selected to represent scenic views and routes within the study area in both counties Waterford and Tipperary.

The nearest and most relevant scenic route to the proposed development is Scenic Route S2 (refer to Figure 12-3 above), which extends north from Cappoquin along the R699 and across local roads traversing the Glenshelane and Glenafallia River Valleys. Owing to its proximity and extensive coverage, multiple representative viewpoints were included to assess potential visual effects. Seven viewpoints (VP11, VP13, VP14, VP18, VP23, VP24, and VP28) were selected along Route S2 to illustrate varied visibility of the proposed development. Sections of this route also represent local community receptors, including some of the nearest residential receptors north of the Knocknasheega Hill array.

In terms of sensitivity, the extensive nature of this route encompasses varying values, with some sections more sensitive than others depending on factors such as openness, naturalness, and tranquillity. The seven representative visual receptors were assessed as ranging between Medium and High–Medium sensitivity, with the latter typically associated with more open views across the surrounding working foothill landscape and towards distinct upland areas such as the Knockmealdown Mountains.

Overall, the residual significance of visual effects at these receptors, representing both the scenic designation and local community receptors, ranged from Substantial–Moderate to Moderate–Slight. While these effects are considered Not Significant in EIA terms, they reflect a

degree of detraction from the scenic amenity afforded at this designation. Importantly, however, the proposed turbines are most often viewed in the opposite direction to the primary aspect of visual amenity along this route, which typically lies to the west across the Glenshelane River Valley towards the more remote and visually susceptible upland areas of the Knockmealdown Mountains.

In similar circumstances to Scenic Route S2, several other scenic routes deemed relevant to the Proposed Project were also represented by multiple viewpoints in the visual impact appraisal. Overall, the residual significance of visual effects at scenic route designations within the study area ranged from Substantial–Moderate to Negligible. While these residual effects are considered Not Significant in EIA terms, those at the higher end represent notable visual effects on the receiving visual receptors. Nonetheless, although the turbines will result in some detraction from scenic amenity, they are generally well assimilated in terms of scale and context within this foothill landscape, which can accommodate larger turbines due to its broad land uses and surrounding large-scale landscape features.

Another important consideration is the initial mitigation by design measures that were implemented to reduce the potential for significant visual effects at scenic designation locations. At an early stage, wireframes were generated from some of the most susceptible surrounding receptors, including scenic designation locations. These demonstrated that the initial turbine layouts had the potential to create a highly dominant visual presence along the local road traversing the saddle between Knocknanask Hill and Knocknasheega Hill, which is classified as a designated scenic route in the current Waterford County Development Plan. From this context, the perceived scale of one turbine was notably greater than that of the rest of the array. While this turbine did not block or obstruct the primary aspect of visual amenity along this section of the scenic route, its considerable perceived scale, accentuated by its elevated position above the road, had the potential to distract the viewer. Accordingly, it was recommended that turbine T6, located on the slopes of Knocknasheega Hill, be removed; a measure that was subsequently implemented.

12.2 "Effects at recreational amenity features, most notably the Knockmealdown Mountains and Comeragh Mountains"

Effects at recreational receptors within the study area are referenced throughout the observations made in respect of the Proposed Project. It should be noted that the submitted LVIA takes full account of the varied landscape values within the study area, and that, due to the notable area of uplands within the surrounding landscape, the study area encompasses distinct landscape values relating to amenity and heritage, which are strongly associated with the Knockmealdown Mountains and the Comeragh Mountains.

Indeed, subsection 13.3.3.5 of the submitted LVIA outlines tourism, recreation and heritage features within the study area and clearly identifies the notable degree of recreational amenity routes within the study area, ranging from some of the most noteworthy walking trails including; the East Munster Way, the Tipperary Heritage Way, the Blackwater Way (Avondhu Way), the Nire Valley Trails and the Knockmealdown Trails. Other more local trails such as the Glenshelane Trails are also referenced as some of the nearest recreational amenity features to the Proposed Project, albeit it is noted that "these walking routes are contained within dense

woodland located along the Glenshelane River corridor." Other amenity routes include the Sean Kelly Cycling trails, the Comeragh Mountains scenic driving route, the Waterford Greenway and hiking and walking trails within the wider Comeragh Mountains.

Subsequently, section 13.6.1 of the submitted LVIA provides a full summary of the landscape character, value and sensitivity, which is heavily influenced by the high number of recreational amenity receptors within the surrounding study area. With regard to the central study area it states;

> *"some distinct landscape values relating to amenity and heritage strongly associated with the Knockmealdown Mountains. A collection of local looped trails and a section of the East Munster National Waymarked Trail are located in the northwest quadrant of the central study area along the north-facing slopes of the Knockmealdown Mountains, whilst a looped woodland walking trail is located along the Glenshelane River Valley in the southwest aspect of the central study area. In terms of heritage, the most prominent heritage receptor in the central study area relates to Mount Mellerary Abbey, which is a striking building that dates back to the early 1800s and is perched on elevated lands on the southern flank of the Knockmealdown Mountain foothills. Broad panoramic views are afforded across the southern extents of County Waterford from the front of the Abbey, whilst a section of St. Declans Way Pilgrim Path passes through Mount Mellary and across the Knockmealdown Mountains to the north."*

Whilst with reference to the wider study area, which has much stronger associations with recreational amenity, it is noted that;

> *"The upland parts of the study area also present with distinct recreation and amenity values and encompass numerous walking trails, cycling routes and scenic drives. Both the River Suir and River Blackwater also encompass some notable scenic and recreational landscape values but at a more localised scale than the broad elevated uplands. A section of Waterford's coastline also punctuates the southeast quadrant of the study area and is similarly littered with scenic routes, scenic views and amenity and heritage features, one of the most notable of which is the popular Waterford Greenway"*

As with scenic designations, all tourism amenity and heritage receptors deemed relevant to the proposed development include viewpoints for assessment within the submitted LVIA. In fact, ten representative viewpoints were selected to represent tourism amenity and heritage receptors within the study area.

It should be noted that the Glenshelane Trails were referenced in several observations made with respect to the Proposed Project. The Glenshelane Trails are the nearest amenity feature to the proposed turbines and follow the corridors of both the Glenshelane River and the Glenafallia River (refer to Figure 12-5). Whilst the ZTV identifies the potential for comprehensive visibility in the valley surrounding the Glenshelane River, the immediate corridor of the river, which the trails follow, encompasses a much more limited degree of visibility, ranging from no turbine visibility to theoretical visibility of between one and six of the proposed turbines. As noted in the submitted LVIA, the ZTV mapping is based on a bare-ground scenario and does not account for screening in the form of existing vegetation and surrounding built development. With regard to the aforementioned trails, these are contained within an area

cloaked in dense woodland, which truncates any sense of openness or views of the wider landscape. In this regard, a viewpoint for assessment from these trails was scoped out due to the limited visibility here. Overall, it is not considered that the proposed turbines will result in any notable visual effects at the amenity receptor. Indeed, the turbines will likely be fully screened aside from some brief residual glimpses through gaps in the surrounding dense vegetation.

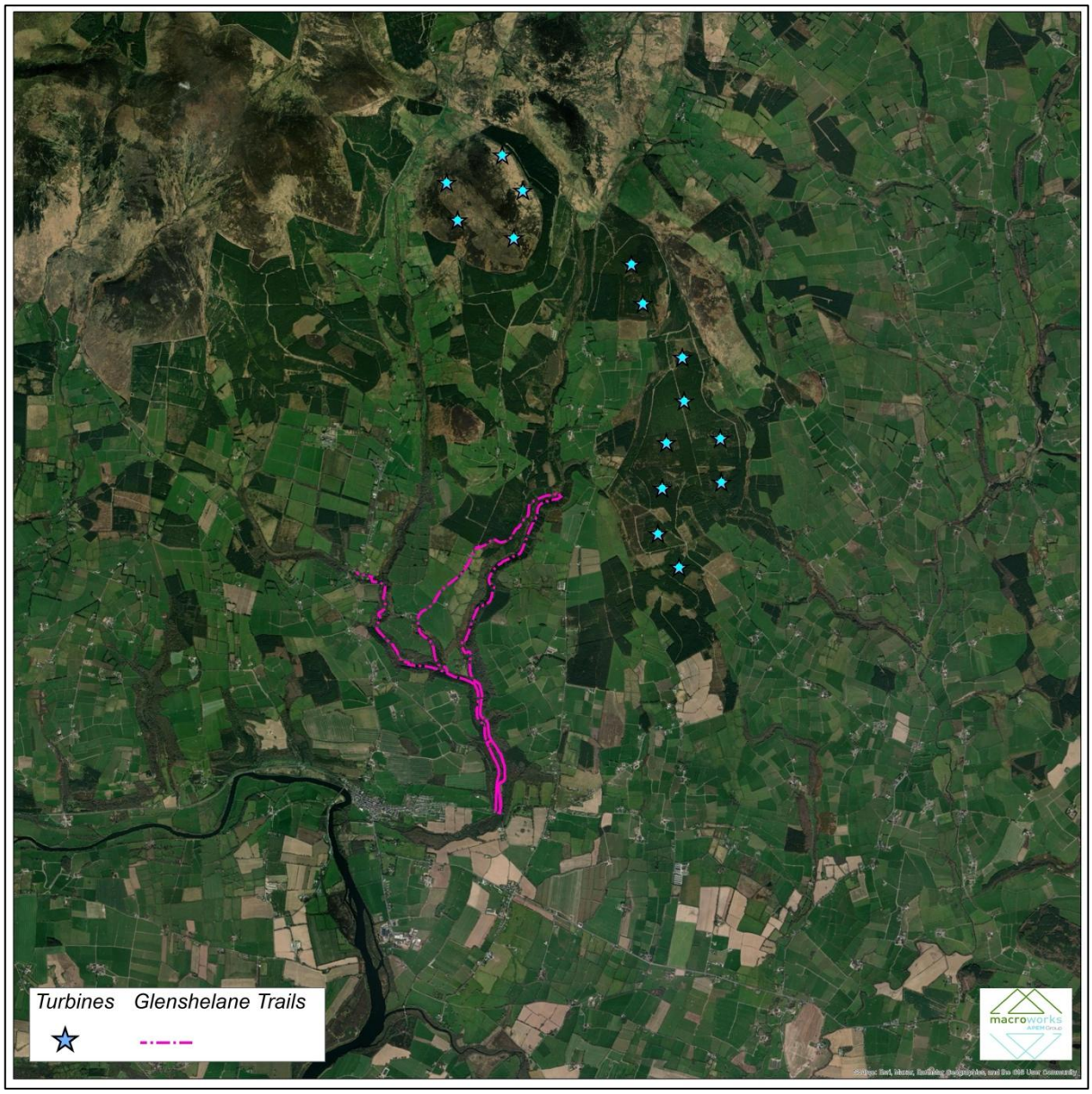


Figure 12-5 Image showing the location of the proposed turbines in relation to the Glenshelane Trails

Other prominent amenity features within the study area include the Knockmealdown Mountains and associated trails such as St Declan's Way, the East Munster Way, and the Liam Lynch loop walks, among others. Whilst views of the development have the potential to be afforded from these routes, many of the nearest sections of these routes to the site pass through areas of dense conifer woodland in the surrounds of the site, whilst much of the wider parts of the Knockmealdown Mountains, especially those along the north-facing hillsides, will have limited potential to afford visibility of the proposed turbines – aside from some of the most elevated lands, such as the summit of Knockmealdown. A representative viewpoint is included

from the summit of Knockmealdown Mountain (refer to VP10). Whilst a clear view of the turbines is afforded from this panoramic vantage point, they present as well offset from this viewing context and are seen in the setting of a sweeping 360-degree panorama. Although they will result in an increase in the intensity of built development, they do not notably detract from the scenic amenity afforded here and appear well assimilated in terms of their scale and function along the eastern foothills of the Knockmealdown Mountains. Overall, the residual significance of effect is classified as Moderate–Slight.

In similar circumstances to the Knockmealdown Mountains, the Comeragh Mountains encompass several recreational amenity features, including scenic driving routes, cycling routes, and walking and hiking trails. Four viewpoints (refer to VP4, VP5, VP7 and VP26) were included to represent the wider Comeragh Mountains, with the residual significance of visual effect ranging between Moderate–Slight and Slight–Imperceptible. These moderate to low effects are strongly associated with the considerable distance of the development from the wider Comeragh Mountains, which are situated at distances greater than approximately 10 km from the proposed turbine array

As with receptors representative of scenic amenity designations, the proposed turbines will result in some detraction from the degree of scenic amenity afforded to tourism and recreation receptors within the study area. However, as with scenic designations, it is assessed that the Proposed Development will generate residual visual effects that are deemed Not Significant at tourism and amenity receptors within the study area. Indeed, the majority of relevant amenity receptors are situated well offset from the Proposed Project, which notably diminishes its potential to generate any notable visual effects or effects on the character of these features.

12.3 "Cumulative Effect of the development – current cumulative scenario and potential future cumulative scenario"

Multiple observations have raised issues with the assessment of cumulative impacts, most notably in relation to the Dyrick Hill Wind Farm (ACP ref: 317265), which has subsequently been refused by ACP on 03/10/2024. The observations most frequently cite a 'failure to conduct a comprehensive cumulative impact assessment'.

With regard to the submitted application, an assessment of cumulative landscape and visual effects is contained in subsection 13.10 and follows the guidance set out in the NatureScot document *Assessing the Cumulative Landscape and Visual Impact of Onshore Wind Energy Developments* (2021). This part of the assessment also complies with the assessment of cumulative effects as set out in GLVIA3 and the 2006 WEDGs / 2019 Draft Revised WEDGs.

It should also be noted that Table 13.9 of the submitted EIAR sets out all existing, consented, and proposed (in-planning) developments. At the time of submission of the Scart Mountain Wind Farm application, the Dyrick Hill development had been refused by ACP. However, the submitted LVIA notes:

> *"As there is still a potential for judicial review at the time of writing this EIAR chapter (November 2024), it has been decided to include the project in the cumulative impact assessments. In the event that the refusal of the Dyrick Hill Wind Farm application is confirmed prior to the determination of the current application, then*

any discussions around cumulative impacts for this project in this EIAR can be ignored by An Bord Pleanála."

The latest information available to the applicant is that there may be a legal challenge underway for Dyrick Hill Wind Farm. On that basis, the above text from the EIAR remains appropriate (albeit that a legal challenge is underway). The project is still considered in the assessment, and in the event that a legal challenge fails, then any discussions around cumulative impacts for this project in the EIAR can be ignored by ACP.

As the study area comprises both existing and permitted developments, in addition to in-planning and recently refused developments, the cumulative assessment was divided into the 'current cumulative scenario', which accounts for all existing and consented developments, and the 'potential future cumulative scenario', which accounts for existing, consented, proposed (in-planning) developments, as well as recent refusals. In this regard, the cumulative assessment provides coverage of all potential cumulative scenarios that may arise within the study area.

In line with current guidance and best practice, the cumulative assessment is supported by cumulative wirelines and ZTVs. The cumulative wireline montages are included in Volume 4 of the submitted application, while the ZTVs for both the existing and potential future cumulative scenarios are presented in Appendix 13-2 of the EIAR (LVIA mapping).

With regard to the existing cumulative scenario, it is assessed that the proposed development will contribute to a magnitude of cumulative effect of Low, as the proposed Scart Mountain development will most often be viewed in isolation, being well offset from all other existing and permitted development. Indeed, where visible in combination, the proposed turbines will appear distinctly separate from any other consented or existing development within the study area.

With regard to the potential future cumulative scenario, as noted in the submitted LVIA, the principal cumulative landscape and visual effects relate to Dyrick Hill Wind Farm, which is included in both the wireframes (refer to the photomontage booklet in Volume 4) and the potential future cumulative ZTV map (refer to Appendix 13-2 of the EIAR). The cumulative effects of the proposed Project and Dyrick Hill Wind Farm are comprehensively discussed within subsection 13.10.1.1, as set out below:

"The principal cumulative visual impacts in this instance will occur in the immediate surrounds of the proposed project site, where both the proposed Scart Mountain and Dyrick Hill Wind Farms will be perceived as one large wind energy development. Indeed, the combined developments will see 28 wind turbines up to a height of 185m occupy this rolling foothill landscape. Thus, the wind energy development will become one of the principal land uses and landscape features in this local landscape context and has the potential to present in a highly prominent manner at some of the nearest surrounding receptors. When assessing the cumulative visual effect of the proposed project in combination with an adjacent development (in this instance, the proposed Dyrick Hill Wind Farm), the principal consideration is for those receptors who have been classified with the highest ranging impacts from the operational phase of the proposed project. In this instance, this relates to some of the nearest local community and scenic route receptors that were classified with a 'Substantial-moderate' significance of visual effect (VP11, VP13, VP14, VP18, VP21, VP24 and VP27). Whilst Viewpoints VP11, VP13, VP14 and VP18 are located within the immediate context of the proposed project and are situated to the west of the

Knocknasheega array, they will have very limited potential to afford clear visibility of the proposed Dyrick Hill turbines. Indeed, in some of these views, Knocknasheega and Knocknanask Hills will almost entirely screen the proposed Dyrick Hill turbines, resulting in very limited cumulative visual impacts. In contrast to this, viewpoints VP21, VP24 and VP27 will all afford clear views of the proposed Scart Mountain and Dyrick Hill turbines in combination. The combined developments will result in a considerable increase in the scale and intensity of development in this local landscape context and will result in wind farm development becoming one of the principal land uses in this foothill context. Furthermore, the combined array will generate a much more notable sense of visual clutter as the turbines in both developments are often viewed stacked with a large numbering of rotating blade sets overlapping. It is considered that the combined development will result in some localized significant visual effects in the local surrounds of these three representative viewpoints. To the east of both the proposed Scart Mountain and Dyrick Hill turbines, the combined developments will also generate some localized significant visual effects. However, the proposed Dyrick Hill turbines make a much stronger contribution to these visual effects than the proposed Scart Mountain turbines, as the proposed Scart Mountain turbines are afforded a more notable offset from these local receptors. It is also important to note that in terms of visual aesthetics, the proposed Scart Mountain turbines present as a linear array along a ridgetop and respond very well to their underlying terrain. Indeed, it is this linear layout that results in a very limited degree of visual stacking and visual clutter and allows a strong sense of visual permeability through the proposed development, especially when viewing it from receptors to the east and west."

Furthermore, this section also encompasses the assessment of other proposed (in-planning) developments in combination with the proposed project, such as Coumnagappul Wind Farm, located in the wider eastern extent of the study area. Overall, the submitted cumulative assessment classifies the magnitude of the cumulative effect of the proposed Project in the potential future cumulative scenario as High, and fully recognises that:

The combined landscape and visual impact of both (Scart Mountain Wind Farm and Dyrick Hill Wind Farm) developments will significantly contribute to a sense of wind farm proliferation in the local foothill landscape context and will generate some notable adverse visual effects at surrounding local community receptors and scenic view designations. Overall, the combined developments will become one of the defining built features in this local landscape context

In summary, the LVIA provides a comprehensive and robust assessment of the cumulative effects associated with the Proposed Project. The assessment has been undertaken in accordance with current best practice and up-to-date guidance, including the NatureScot document *Assessing the Cumulative Landscape and Visual Impact of Onshore Wind Energy Developments* (2021). It also incorporates the principles of GLVIA3 and the 2006 WEDGs / 2019 Draft Revised WEDGs. By addressing both the current and potential future cumulative scenarios, and by considering all relevant existing, consented, proposed (in-planning) and recently refused developments, the LVIA ensures that all potential cumulative effects relating to landscape and visual within the study area are fully and transparently assessed.

12.4 "ACCURACY OF THE PHOTOMONTAGES"

In terms of the accuracy, Macro Works produce photomontages in accordance with the current Nature Scot Guidelines and guidance set by the British Landscape Institute 2011 – Advice Note

01/11. Viewpoints are selected and high-quality photography in RAW format is captured using a digital Single-Lens Reflex (SLR) camera with a fixed 50mm lens on a Monfrotto panoramic head and leveller. Viewpoint locations are then spatially captured using a survey grade Global Positioning System (GPS) unit to within 10cm of accuracy. High resolution 360-degree panoramas are generated from the captured photography. The scheme is then modelled using a Digital Terrain Model (created with a combination of LiDAR and OS Terrain Data) and real world reference points. It is rendered in Autodesk 3DS Max 2023 with identical image characteristics to that of the camera used for the baseline photography allowing the render and the photography to be merged with a high degree of accuracy.

In terms of the selection of the viewpoint locations for assessment, this is in accordance with the GLVIA3 (Guidelines for Landscape and Visual Impact Assessment Third Addition). The viewpoint selection is undertaken utilising the ZTV (Zone of Theoretical Visibility) mapping, which provides the basis for selection of key viewpoints from which to study the visual and landscape impact of the proposed project in detail. It is not practical to include every single location that provides a view of the Proposed Development as this would result in an unwieldy report and make it difficult to draw out the key impacts arising. Instead, the assessors endeavoured to select a variety of location types that would provide views of the Proposed Development from different distances, different angles and different contexts. The locations selected are significant because they comprise, for example, centres of population and important transport routes whether due to traffic volume or their scenic value. An initial broad set of potential views was generated from a desk study using the ZTV map. Each potential VP is colour coded to identify which of the following receptor types it represents;

- Key Views - from features of international or national importance;
- Amenity Views - from important heritage or amenity locations;
- Designated Scenic Routes and Views;
- Local Community Views;
- Centres of Population;
- and Major Routes.

It is important to note that some VPs may be applicable to several receptor categories, in which case, they will be assessed under the group that best reflects that location's particular sensitivities. Whilst every effort is made to select viewpoints with the clearest and most unimpeded view of the Proposed Development, in some instances, only a partial view of the Proposed Development will be visible from the nearest publicly accessible location that was selected to represent the visual receptor. In instances where the Proposed Development is heavily screened from a specific receptor, a photomontage has been included to highlight the degree of intervening screening afforded between the visual receptor and the proposed turbines. In circumstances where a branch or cluster of vegetation partially screens a turbine or section of the development, the wireframe view is utilised to understand the potential visual impacts and perceived scale of the development from that receptor.

Finally, it is important to note that Macro Works always attempts to use the most open views relative to the receptor being represented, whether these are views from a town or a designated scenic route. It serves no purpose to assess visual impacts from a location, which can be readily

proven not to be representative of worst-case visual exposure from a particular receptor, as this only undermines the assessment. In terms of the timing of baseline photography, this was captured during the spring/summer months of 2022 and 2023, whilst the application was submitted in Winter 2024.

With regard to the scale of the proposed turbines, several observations noted that the photomontages do not depict the 'sheer scale' of the proposed turbines. In this regard, it is important to note that the proposed turbines have been accurately modelled to the exact proposed dimensions. Indeed, the full submitted photomontage set was modelled with the turbine specification of 110.5 Hub Height, 149m Rotor Diameter and 149m Tip Height. It should also be noted that as the developer is applying for a range of turbine dimensions, Macro Works included comparative photomontages from several viewpoints within the immediate vicinity of the development showing three alternative scenarios with the dimensions of these outline below:

- Base-case Scenario – 110.5m Hub Height, 149m Rotor Diameter, 185m Tip Height (used and assessed in the LVIA)
- Alternative Scenario 1 – 103.5m Hub Height, 163m Rotor Diameter, 185m Tip Height
- Alternative Scenario 2 – 107.5m Hub Height, 155m Rotor Diameter, 185m Tip Height
- Alternative Scenario 3 – 105m Hub Height, 149m Rotor Diameter, 179.5m Tip Height

Overall, it was assessed that the submitted LVIA comfortably covers the range of potential turbine dimension options proposed and, thus, it is not considered necessary to prepare separate photomontages / assessments at all viewpoints for all possible turbine dimensions highlighted above.

13. ARCHAEOLOGY & CULTURAL HERITAGE

Any of the observations that had comments or raised issues relating to Archaeology and Cultural Heritage are addressed here. The comments have been dealt with under a number of headings or themes below which cover the topics raised in the observations. The EIAR chapter and this response were prepared by IAC.

The submission from the Department of Housing, Local Government and Heritage does not include any queries regarding the content of Chapter 15 of the submitted EIAR (Archaeology and Cultural Heritage) and notes all mitigation measures in the chapter should be carried out, including pre-development test trenching. This is noted and accepted by the applicant. A similar condition has been noted within the submission from Waterford City and County Council, should ACP decide to grant planning permission.

13.1 ENCLOSURES

One observation notes that a possible enclosure is present, c. 445m northeast of the closest turbine (Turbine 3) and 273m northeast of the proposed compound. The potential site presents as a sub-rectangular feature in the landscape measuring c. 22m north-south by 15m east-west. The site appears to enclosure an area of improved pasture, flanked by a number of streams. The topography of the feature is consistent with a post medieval pen or animal enclosure, which were often established in upland areas in order to gather stock when grazing the lands during the summer. The enclosure was not apparent in the aerial and satellite imagery used during the course of the assessment, but does represent a potential cultural heritage site. The site is located outside of the proposed development site (and the proposed project site – see Figure 13-1 below) and as such the area was not subject to a field inspection; however, the site will not be directly impacted by the development. Indirect negative effects may occur at operation stage, but given the low sensitivity of the site, the medium magnitude of impact; the effect would be slightly negative.

Figure 13-1 Location of possible enclosure

A further 'enclosure' is noted in one submission between 550m and 600m from proposed Turbines 2 and 3. This site was discounted as being of archaeological significance at the time of the EIAR baseline analysis, as it is small and square in plan and likely to represent a more recent animal pen. A similar feature, also discounted as possessing archaeological significance, is located 210m to the east. Neither site will be directly affected by the proposed project.

13.2 SURVEYS

Several pages of one submission note the lack of drone surveys, LiDAR analysis or geophysical survey in the assessment methodology. It should be noted that the use of drones as a survey technique at pre-planning stage is limited, unless they are used in specific conditions, such as drought where archaeological sites can be identified due to changes in the crop or pasture. The marginal and overgrown nature of the landscape containing the proposed project would mean that drones would not be useful as a means of identifying previously unrecorded archaeological remains. Similarly, LiDAR, whilst often a useful tool for the identification of archaeological remains, has limited use in this upland context, due to existing trees and overgrowth. The baseline analysis of the site precluded further investigation with LiDAR as no significant upland archaeological sites are recorded within the development area. In addition, there is no publicly available LiDAR coverage of the area containing the proposed project. The resource cited in the submission does not contain LiDAR coverage of the proposed project – the following link provides access to that cited resource:

https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=b7c4b0e763964070ad69bf8c1572c9f5

It should also be noted that the marginal nature of the terrain containing the development means that it is not suitable for geophysical survey. The level of overgrowth, trees and existing disturbance from forestry activity, twinned with the challenging topography, means that it would be physically impossible to carry out geophysical surveys.

On several pages of one submission, notes are given regarding the veracity of the field inspection. IAC Archaeology can confirm that all accessible parts of the site were accessed on foot by archaeologists. The field inspection portion of the baseline provides the relevant information. There is no obligation by any environmental specialist to provide 'evidence' that areas were accessed beyond what is described in their relevant chapters. In addition, it should be noted that whilst the submission calls for 'vegetation clearance' for the development in order to allow for better access, given the size of the development and the baseline results, this is not something that could be carried out as part of the planning application stage.

13.3 Possible Battle Site

Three submissions note the possible battle site – recorded in the SMR as 'WA021-030 Battlefield'. The precise location of the battle field is unknown and this is reflected in the SMR file due to the inclusion of the following townlands 'Affane Hunter, Crinnaghtaun West, Sluggara, Sunlawn'. Given the location of the battle remains unknown, it does not receive statutory protection under the National Monuments Act and is listed in the SMR only. The site is included in Chapter 15 of the EIAR as AH86 and mitigation includes for the archaeological testing of this area, prior to the commencement of construction. It is not possible to avoid this area as part of the proposed TDR due to the constraints at the existing crossroads at this location.

13.4 Archaeological Potential

One submission questions the determination in Chapter 15, in this instance, that the proposed wind farm occupies a marginal upland of low archaeological potential. This conclusion has been reached based on the analysis for this particular site and landscape. The submission cites Bronze Age activity at the Monavullagh Mountains and we acknowledge that some upland areas are significant in terms of prehistoric settlement and ritual activity. However, each portion of the landscape requires analysis on its own merits. In addition, the level of disturbance that has occurred due to commercial forestry cannot be ignored, given it forms part of the receiving environment under assessment.

The submission goes on to note that previously unrecorded archaeological remains may survive within areas that have been subject to commercial planting and areas where hand-cut peat extraction has taken place. This is acknowledged and accepted in Chapter 15 of the EIAR and mitigation is included that will ensure the identification and preservation of any previously unrecorded archaeological remains during the construction phase.

13.5 Potentially Omitted Features/Considerations

One submission states that intangible heritage is not considered in the assessment. As per the definition of 'cultural heritage' given on page 15-1 of chapter 15, consideration was given to tangible and 'less tangible' aspects of Cultural Heritage within the study area of the proposed

project. This resulted in the identification of 65 Cultural Heritage sites. The results presented in Chapter 15 are the results of the analysis of the cultural heritage resource.

One submission notes the omission of the site of a mass rock, although no map is provided as to the location of the feature and the information in the submission is contradictory in terms of where it is located. According to the submission the site is located 2-3km from the proposed turbines, suggesting it is outside of the 2km study area defined in Table 15-1 of Chapter 15, for previously unrecorded sites of cultural heritage merit. Given there is no information available regarding the site, it is not possible to state definitively if the site is within the 2km study area.

One submission notes that St Declan's Way is not included in Chapter 15. As noted in the submission the modern footpath is addressed in Chapter 5, Population and Human Health. This is the appropriate place for the footpath to be considered, which is not a cultural heritage site in its own right given its modern nature. It is noted in the submission that the path is considered as 'following' a pilgrimage path, but that path has not been archaeologically determined and for the most part the route is formed by the existing road network and forestry tracks. Not with standing that it is acknowledged that the existing road network in Ireland, especially rural roads, are likely to possess more ancient origins, although given their continuous use, it is difficult to date them. The submission provides details on the route of a possible former road through the landscape. It is likely that this represents a former route way, although there is no way of determining this was an early medieval route way. The track was marked on the first edition OS map and is one of many route ways through an upland environment where people generally travelled the path of least resistance in terms of topography. The submission goes on to describe additional potential paths through the landscape, including Knocknanask. Multiple footpaths are visible across Knocknanask, and were likely used over time for localised turf cutting and taking animals to graze in the summer. It is simply not possible to determine whether every single footpath in the landscape is 'archaeological' or as a result of more recent footfall. As all ground works at Knocknanask will be subject to archaeological monitoring, this will ensure the identification of any previously unrecorded sites of archaeological significance.

The submission goes on to state that Chapter 15 of the EIAR tries to 'minimise' peat cutting that has taken place on site. This is not the case, the current and previous land uses are presented for context. Mitigation for ground works in elevated peaty areas include for archaeological monitoring, which will result in the preservation in situ or by record of any archaeological remains that may be present.

13.6 Place Names

One submission notes the lack of reference to 'Sliabh gCua'. This is a place name applied to the general area of the Knockmealdown Mountains. As noted, it was once an Irish speaking area (which can be applied to many areas of rural Ireland in the 19th century) but is not a designated Gaeltacht today. The proposed project will not affect the manner in which the landscape is named. The construction and operation of the proposed wind farm will not remove 'Sliabh gCua' nor diminish the manner in which members of the population utilise the landscape name in day-to-day life.

The submission states that the placename analysis is incomplete and unsatisfactory. This is disputed, as on page 15-45 of Chapter 15 of the EIAR, it is noted that 'the main references used

for the place name analysis is Irish Local Names Explained by P.W Joyce (1870) and logainm.ie'. These are both recognised resources and provide suitable illustration of the evolution of placenames.

13.7 Mitigation

One submission states that the mitigation proposed is insufficient. A programme of test trenching prior to construction has been detailed in Chapter 15, as well as a programme of archaeological monitoring of all ground disturbances. This mitigation is appropriate for the development proposed and the impacts identified. These mitigation measures form part of all large-scale developments in the country, including other wind farm developments and the developer has committed to the mitigation. These are not recommendations. Please also note that the submission from the Department of Housing, Local Government and Heritage agrees with the mitigation laid out in Chapter 15.

In terms of carrying out mitigation, archaeologists will monitor at multiple locations during the course of construction, if groundworks are being carried out at multiple locations. The mitigation is for monitoring and if works in different areas are occurring at the same time, this clearly means more than one archaeologist being on site. As part of the licence application for the works, the site will be visited again by the appointed archaeologist. This is a standard part of the licence application process. Where archaeological testing cannot be carried out in advance, the archaeologist will monitor the removal of soils until natural subsoil or formation level is identified. All works will be carried out under licence to the National Monuments Service of the Department of Housing, Local Government and Heritage and subject to their approval.

13.8 Grid Connection and Turbine Delivery Route

Three submissions query the impact assessment in relation to where the proposed Grid Connection passes through the zone of notification for three monuments – AH1, 2 and 3. Monitoring mitigation is detailed in Chapter 15, as whilst the sites themselves will not be directly affected, there may be direct effects on archaeological features that extend beyond their known limits. The impact assessment does not accept the recorded sites will be damaged; it allows for the identification and preservation (by record or in-situ) of any features that may be exposed during the excavation of the trench.

13.9 Other Points Raised

In one submission, AH14 is cited as 'The Earl's Stone'. This record has been reclassified as a redundant record by the National Monuments Service of the DoHLGH. The SMR record states the following:

> *This record was formerly classed as 'Miscellaneous' in the SMR (1988). It refers to a stone on a W-facing slope in a coniferous forest. Described as a large boulder upon which the Earl of Desmond rested after the Battle of 'Bohernavogheragh crossroad' (WA021-030----) (O'C. Redmond 1895, 124). Not visible at ground level. The evidence is not sufficient to warrant its acceptance as an archaeological monument.*

The location of the stone is marked within the historic OS maps at this location, but as noted in the National Monuments Record is not extant today. The submission notes the presence of a

stone within the road verge located 90m north of AH14. The stone cited in the submission is actually located over 800m to the south of its plotted location at AH14. Here there is a rough hewn stone located on the eastern side of the road. However, there is no direct evidence to indicate the provenance of the stone, especially as it is not at the location as marked within the historic maps. It is highly unlikely that the OS surveyors incorrectly plotted the location of the monument 800m from its location. If the stone has been moved 800m in the past then it has lost its original context and is no longer in-situ. Equally the stone may be more recent in date. Whist the stone is located adjacent to the proposed Turbine Delivery Route, it is not subject to statutory protection. The stone is located 28m to the north of the closest proposed passing point and will not be directly affected by the proposed Turbine Delivery Route. During the delivery of the turbines, the stone will be hoarded off in order to prevent any accidental effects.

One submission states that the results of indirect effects on sites within the relevant study areas of the development are 'inappropriately concealed within a separate appendix'. We strongly refute this accusation, given the correct refences to the appendix are given in Chapter 15. The assessment of operational effects deals with a large amount of information and that information is presented in full in the appendix and summarised in Chapter 15. We also clearly state the following on page 15-60 'Each site has been assessed in conjunction with the Theoretical Zone of Visibility mapping (Tip Heights) and photomontages produced by the Landscape and Visual specialists in Chapter 13.' Assessment of indirect effects is based on the sensitivity of the receptor against the magnitude of effect, which in turn leads to the definition of the Significance of Effect, as defined within the EPA Guidance. The significance of effect, where it occurs due to visibility of turbines being indicated within the Theoretical Zone of Visibility mapping, is detailed for every site identified within the baseline information.

One submission questions the assessment of effects on the Coumaraglin Mountains. The effects have been assessed as presented at the beginning of the Table in Appendix 15-3 of the EIAR, based on the fact that the sites within this complex within 10km of the proposed turbines are of national significance, being protected by Preservation Orders and the presence of the proposed turbines in the landscape will not result in any significant effects on these monuments. When the development is considered cumulatively with the adjacent Dyrick Hill Wind Farm, the effects will be no greater than those identified as part of either project. The submission asserts a profound cumulative impact and very significant/ profounds impacts, but when the definition of very significant and profound significance of effect is examined, this is not accurate and no reasons have been included as to how this conclusion has been reached within the submission. It should also be noted that the assessment of effects on this complex has not been queried within the submission by the Department of Housing, Local Government and Heritage.

It should be noted that throughout one submission regarding Cultural Heritage, numerous complaints are made about the extensive lists of recorded archaeological sites and structures presented in Chapter 15, despite the fact that the purpose of the assessment is to assess effects on recorded monuments and structures, as well as identify any previously unrecorded sites of merit. However, the submission also contradicts itself by also stating that the 'area of study is under-reported for archaeological heritage'.

Three submissions note the presence of two protected structures in relation to the TDR. Both are included in Chapter 15 as BH9 and BH15. BH15 is located over 70m from the TDR and will not be affected at construction stage. BH9 is located c. 8m east of the TDR and will not be

affected. The remaining sites listed are located outside of the study area for the TDR with the exception of the site of a burial ground (AH26), which is located to the west of the existing road and will not be affected by the TDR and AH14, which is a redundant record (addressed earlier in this response).

One submission suggests an equivalency between the proposed project and other developments where impacts were predicted in terms of peatland landscapes. The comparison is not relevant to the assessment given in Chapter 15, as any of the other projects cited were assessed on their own particular landscape and baseline conditions.

One submission notes 'inaccuracies' relating to the Mesolithic period, Palaeolithic period and cites a number of locations that are not included in Chapter 15. None of these sites are located within the study areas, as defined in the methodology presented in Table 15-1.

14. TRAFFIC AND TRANSPORTATION

Any of the observations that had comments or raised issues relating to Traffic & Transportation are addressed here. The comments have been dealt with under a number of headings below which responde to the topics raised in the observations. The EIAR chapter and this response were prepared by TOBIN.

14.1 ACCESS

Three observations raised concerns regarding site access for the proposed project, specifically focusing on the number of junctions proposed and the potential for increased traffic on local roads, including compliance with Transport Infrastructure Ireland (TII) guidelines. The proposed wind farm site will be accessed via the L5055 local road using a single main access point (see Figure 2-4 of EIAR), which will serve as the sole site access and egress for the construction phase.

Within the site, there are three locations where internal access roads cross public roads, which will be constructed using two site entrances positioned opposite each other to form controlled crossing points, located on the L5054, L5055, and L1026. Construction traffic will not enter or exit the site via these internal crossings, with all vehicles using the main wind farm entrance, as detailed in Chapter 16 (Traffic & Transportation). These arrangements minimise new junctions on the local road network, reduce potential impacts on surrounding roads, and ensure safe and efficient traffic management throughout the construction phase. Access management will be guided by the Traffic Management Plan (Appendix 2-4 of the EIAR) and coordinated with Waterford County Council to ensure safe and efficient entry and exit during construction and operation.

14.2 CARRYING CAPACITY

Five observations, including from Waterford County Council, raised concerns regarding the carrying capacity of local roads around the proposed project. The Traffic and Transportation Assessment demonstrates that the N72/L1027 crossroads can accommodate current and forecast 2027 traffic, including all construction-phase HGV and LGV movements under a worst-case scenario, with RFC values within acceptable limits and no significant increase in queues or delays. To further ensure safe and efficient vehicle passage during the construction phase, nine passing bays are proposed along the L5055, allowing vehicles to pass. The Traffic Management Plan (Appendix 2-4 of the EIAR) incorporates robust mitigation measures, including temporary road closures, new passing bays and close coordination with the Local Authority, to prevent overloading the existing road network. Given these comprehensive assessments and proactive mitigation measures, the carrying capacity of the local roads is considered adequate to accommodate the project without adverse impacts.

14.3 DAMAGE TO THE ROAD NETWORK

It was raised by TII in their observation that any damage to the national road (N72) by the turning movements of abnormal loads at Boheravagera Cross (also known as Affane Cross) would need to be rectified. Waterford County Council also raised a concern relating to this on the local roads around the proposed project. As outlined in the EIAR Traffic and Transportation Chapter the applicant commits to carrying out pre- and post-construction condition surveys of all affected roads. Where the surveys conclude that damage on the roadway is attributable to the Construction Phase of the proposed project, the Applicant will fund the appropriate

reinstatement works to bring the road back to pre-construction condition, details for which will be agreed with the Roads Authorities. Reinstatement will comply with the Department of Transport Guidelines for Managing Openings in Public Roads (2017) and, where applicable, TII Pavement Standards for national roads.

14.4 Grid Connection

Two observations raised the potential for the proposed grid connection works to impact on the public road network. The grid connection works will be managed in close consultation with Waterford County Council to address local road capacity concerns. Mitigation measures include traffic routing, scheduling of construction vehicles outside peak traffic hours where possible, and use of temporary road closures to minimise disruption. The grid connection works are temporary in duration, and their transient nature will ensure that work does not last long at any one location, further limiting potential impacts.

Engagement with local communities (e.g. Modeligo parish) and the Council will continue throughout planning and construction to ensure safe and coordinated grid connection installation.

14.5 Road Safety

Three observations including TII referenced road safety as a key consideration for the project. The applicant has conducted a Road Safety Audit (RSA), included in Appendix 16-4 of the EIAR. The RSA covered the N72 and other haul routes, and the recommendations have been incorporated into the design. The RSA recommended that adequate temporary signage and traffic management should be provided to inform road users at all locations where existing signs have been temporarily removed, and traffic management should be in place where Bnormal Indivisible Loads (AILs) tyre paths occupy the opposing lane of the road, preventing traffic from undertaking the AILs. All works will comply with TII Publications (formerly NRA DMRB) to maintain the safety and strategic function of both the national and local road networks during all project stages. All 120 no. Abnormal Indivisible Load (AILs) will be transported to the site with the assistance of an Garda Síochána and a number of other support vehicles during the night to minimise any safety risks to road users.

14.6 Technical Load Assessment

Transport Infrastructure Ireland highlighted in their observation that a technical load assessment would be needed for the proposed haul routes to ensure that the structures are suitable. As outlined in the Traffic Management Plan (Appendix 2-4 of the EIAR) a total of 120 no. Abnormal Indivisible Loads will be transported to the proposed wind farm site along the proposed TDR.

The appointed contractor shall ensure that the haulage of these AILs is done in conjunction with an Garda Síochána, TII and the Local Authorities. The appointed contractor is responsible for coordinating these movements with An Garda Síochána, TII, and the local authorities, and for obtaining all necessary permissions and licences. Where necessary, structural assessments of bridges or culverts will be undertaken in line with TII Publication AM-STR-06048 to verify suitability for abnormal and exceptional load vehicles.

14.7 Temporary Works

The observation from TII included some comments relating to the proposed temporary works at the N72/L1027 junction known as Boheravaghera Cross. TII noted that the proposed works at the N72/L1027 junction at Boheravaghera Cross are intended to be temporary in nature to facilitate turbine component delivery during construction and emphasised that all temporary access arrangements and associated works should be removed upon completion of the construction phase, with the lands fully reinstated, in the interests of road safety and in accordance with official transport policy. The proposed temporary works at the N72/L1027 junction are required solely to facilitate turbine component deliveries during the construction phase. These works are temporary in nature and will be removed in full following completion of turbine deliveries, with all lands reinstated to their original condition in accordance with TII guidance and in the interests of road safety. The temporary road will be blocked when not in use to ensure that general road users do not drive on it.

Although a Road Safety Audit (RSA) is only required as for permanent works, the works at the N72/L1027 junction were included in the Road Safety Audit. Temporary arrangements will be managed under the approved Traffic Management Plan to ensure safe operation during their limited use. These measures ensure that the temporary works are safely implemented, time-bound, and compliant with TII policy and the commitments outlined in the EIAR Traffic and Transportation Chapter.

14.8 Traffic

It is acknowledged that local residents have raised concerns regarding the capacity, safety, and character of the local road network, particularly in relation to the anticipated increase in Heavy Goods Vehicles (HGVs) and construction-related traffic associated with the proposed project.

A comprehensive Traffic and Transportation Assessment (Appendix 16-1 of the EIAR) has been undertaken as part of the EIAR to identify, assess, and mitigate potential impacts on the local, regional, and national road networks. The assessment covers both construction and operational phases, and includes consideration of HGV movements, staff vehicles, and internal material transfer within the site.

Key measures and clarifications are set out under the headings below:

Construction Traffic Volumes

Estimated traffic generation, including the movement of materials and turbine components, has been assessed within the submitted EIAR. It finds that construction traffic volumes associated with the proposed project will give rise to temporary increases in traffic on the surrounding road network, with the most pronounced effects occurring during the peak construction period. During this peak phase, traffic particularly HGV movements will result in a moderate negative effect of short duration, while average construction traffic over the wider construction period will result in a slight negative effect. These impacts are temporary and confined to the construction phase, with no significant capacity issues identified, and will be mitigated through

traffic management measures, including controlled delivery scheduling and escort arrangements for abnormal loads. Prior to construction, the appointed contractor will update the live Traffic Management Plan (Appendix 2-4 of the EIAR), to be agreed with Waterford County Council, providing specific delivery schedules, traffic volumes, and haul routes for all vehicles, including internal transfers.

Safety for Local Residents, Pedestrians, and Schools

The applicant recognises community concerns regarding pedestrian and cyclist safety, particularly near residential areas and schools.

Mitigation measures will include:

- Construction traffic scheduling to avoid school drop-off and collection times;
- Speed controls and the use of escort (including an Garda Siochána) or pilot vehicles for turbine deliveries;
- Clear temporary signage and advance warning notices for residents; and
- Implementation of temporary traffic management to maintain safe passage for all road users.

Cumulative Impacts

As stated in the submitted EIAR Traffic and Transportation Chapter (Chapter 16) cumulative effects from other known or permitted developments in the region have been considered. The overall additional traffic from the proposed project is expected to result in only a temporary and short-term increase in daily traffic volumes during the construction phase, with no long-term impact on road capacity or function. Ongoing consultation with Waterford County Council and Transport Infrastructure Ireland (TII) will ensure that delivery scheduling and routing avoid conflicts with other large-scale projects where possible.

Community Liaison

A Community Liaison Officer will be appointed prior to the commencement of construction to provide residents with advance notice of deliveries, respond to concerns, and coordinate with local schools and emergency services where required.
This will ensure clear communication channels and minimise disruption to local residents throughout the construction period.

14.9 Turbine Delivery Route

One observation raised a number of concerns relating to the proposed turbine delivery route which are addressed in this section. Any comments relating to the TDR assessment and plans for the refused Dyrick Hill Wind Farm are not addressed where they are not relevant. A reasonable worst-case scenario (163 m rotor diameter) has been used in the assessment to ensure that all mitigation and route designs can accommodate the entire range of turbine component dimensions.

Delivery routes were evaluated for geometry, clearance, and turning movements, and temporary route improvements have been identified where required. Engagement with TII, Public Private Partnership (PPP) operators, and local authorities will continue to confirm delivery schedules and ensure minimum disruption and safe navigation of turbine components. It is confirmed that the routes will be reassessed again in advance of works to account for any changes that may have occurred in the meantime.

The observation raised a concern that alternatives to Bellview port were not included in the TDR assessment. As detailed in Chapter 3 of the EIAR, the selection of Belview Port as the preferred port of entry for turbine deliveries has been fully assessed, with reasonable alternatives, including Dublin, Cork, and Foynes, considered. Dublin Port was found to be less favourable due to the significant works required at the M50/M7 interchange and the resulting potential for major traffic disruption. Similarly, the Ports of Cork and Foynes were less suitable because of limited connectivity to the N72, which would necessitate additional roadworks and increase potential traffic impacts. In comparison, Belview Port provides the shortest and most direct route to the site, with the fewest pinch points along the national road network, thereby minimizing traffic and air quality impacts and representing the most practical and environmentally responsible option.

14.10 Mitigation Measures

One observation suggested that the mitigation measures provided in the EIAR could not be relied upon. Mitigation is embedded within the project's Traffic and Transportation Chapter and detailed in Appendix 2-4 of the EIAR (Traffic Management Plan), and listed in Chapter 19 (Schedule of Mitigation Measures) of the submitted EIAR and must be implemented fully as part of the proposed project. These lists of mitigations measures will be updated as required with any conditions that are attached to a grant of permission for the proposed project.

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Appendix A AECOM TECHNICAL REPORT

Scart Mountain RFI – Technical Note: Annex I habitats and related Biodiversity Management Plan measures

1. Summary

FuturEnergy Scart Mountain Designated Activity Company (DAC) will provide biodiversity improvements to 243.77 ha of lands to offset the residual effects of the development, which include the loss of 3.12 ha of Annex I heathland habitats. These compensatory measures include restoration and long-term management of 118.1 ha of open peatland/moorland on Knocknanask Mountain (consisting of Annex I dry heath, Annex I wet heath and Annex I blanket bog habitats), restoration of 37.24ha of conifer plantation to Annex I dry heath on Knocknasheega and land management of a further 79.43 ha of agricultural lands for hen harrier conservation.

Improvements to the Conservation Status of Annex I dry heath, wet heath and blanket bog will be achieved primarily through a reduction of grazing pressure and prevention of burning which constitute key threats to the habitats, alongside detailed assessment and remediation of hydrological regimes from historical damage if needed. Additionally, 37.24 ha of conifer plantation will be restored to Annex I Dry heath at Knocknasheega.

These measures constitute an overall net benefit for Annex I habitats following the development, with a net gain in Annex I heathland habitats of 34.12 ha through restoring conifer plantation to dry heath at Knocknasheega, and additional restoration measures on a further 118.1 ha of dry heath, wet heath and blanket bog at Knocknanask.

FuturEnergy Scart Mountain DAC commits to all the above biodiversity management for the full duration of the wind farm of 35-40 yrs.

2. Background

This technical note addresses observations made by The Development Applications Unit of the National Parks and Wildlife Service (NPWS), Knockmealdown Protection Group, Waterford City and County Council, Cllr Liam Brazil, Daniel Bray, Nicola Winsor Smith, Julia Gorodecky and others on aspects of the proposal relating to the Annex I habitats on-site, proposed restoration of those habitats and the Biodiversity Management Plan (BMP)[1].

This report was produced by AECOM and should be read in conjunction with the specialist habitat survey (EIAR Appendix-6-2), habitat maps (EIAR Appendix 6-4) and Biodiversity Management Plan (EIAR Appendix 2-1) submitted by FuturEnergy Scart Mountain DAC to An Bord Pleanála in December 2024 (Case Number – ABP-315601-24) as Appendices to the Environmental Impact Assessment Report (EIAR) (https://scartmountainplanning.ie/environmental/).

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3. Clarification of Annex I terminology

The terms 'Priority Annex I habitats' and 'non-priority Annex I habitats' are used in the original sense detailed in the Habitats Directive (*Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild flora and fauna* https://eur-lex.europa.eu/eli/dir/1992/43/oj/eng). This legislation provides the main legislative instrument for the conservation of wild animal and plant species in Europe. Annex I of the Habitats Directive provides a list of 233 naturally occurring habitat types, of which 71 are termed 'Priority', which means 'habitat types in danger of disappearance for which the European Community has particular responsibility in view of the proportion of their natural range which falls

[1] A query was also made regarding the effectiveness of frog measures, which is not connected to the habitat issues that this technical note otherwise addresses. The Construction Environment Management Plan sets out measures for common frog under 'MM7', including for licensed translocation of frogs and spawn where present in ponds, ditches etc. that will be impacted by construction. These measures are standard practice – they are not intended to avoid all impact on common frog, but to reduce the degree of impact.

within its territory'. 16 of these 'Priority Annex 1' habitats are recorded in Ireland. The term 'non-priority' is a technical term used to distinguish all other habitats on Annex I of the Habitats Directive from those identified as 'priority'. As noted by respondents, 'non-priority' Annex 1 habitats are still important natural habitats of European Community Interest, which may be 'a) in danger of disappearance in their natural range, b) have a small natural range, or c) present outstanding examples' (92/43/EEC, as ammended).

The term 'Priority Annex I' is used in herein to distinguish 'Active blanket bog' (H7130*) from 'Inactive blanket bog' (H7130), both of which are 'Annex I' habitats in the more general sense. 'Active blanket bog' is distinguished by the presence of significant areas of peat building vegetation such as sphagnum spp. and cotton grasses (*Eriophorum* spp.) (NPWS, 2019), and has improved ecological functioning in terms of carbon storage and flood prevention. 'Inactive blanket bog' can be restored to 'Active blanket bog' in situations where the peat layer remains intact and hydrology is suitable. Note, however, that there will be no loss of any blanket bog to the development, either 'Active blanket bog' (H7130*) or 'Inactive blanket bog (H7130).

The importance of natural habitats in terms of ecosystem functioning (e.g. carbon sequestration, flood prevention etc) and as dwelling places for animals is related to their condition and 'Conservation Status'. The term 'Conservation Status' in this document follows the definitions used by Ireland for its reporting under the Habitats Directive (NPWS, 2019), and considers the range, area, structure and function, and future prospects of habitats.

Detailed condition assessments of all Annex I habitats on-site were carried out by an experienced independent ecologist in 2023 (EIAR Appendix-6-2) to assess the baseline habitat 'condition' and 'Conservation Status'. These assessments followed the '*Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland*' (Perrin, 2024). The terminology is that used for Annex I habitats across the European Union (EU) as a whole, with the terms Favourable, Unfavourable Inadequate and Unfavourable Bad reflecting the current 'Conservation status' of each habitat.

4. Impact on Annex I habitats

Note that all lands covered by the BMP were subject to survey (including hen harrier management areas, regarding which see Section 6), by the EIA team, AECOM and/or FuturEnergy Ireland ecologist. Knocknanask and other areas were also inspected by the agri-environmental adviser.

Measures given in the BMP are additional to measures in the Knockmealdown Mountains ACRES Local Area Plan. Note also that legal landowner agreements are in place for the implementation of the BMP. Landowners may participate in agreements under both ACRES and the BMP, and compliance is required by the agreements – non-compliance would result in non-payment. With regard to Coillte schemes for conversion of plantation to heath (or bog), there are no immediate plans for Coillte to undertake this work, and BMP heathland restoration measures would considerably exceed any work in the Coillte Bioclass 3 zone, and would complement Coillte intentions.

4.1 Summary of affected areas

The proposed wind farm site is 981.4 hectares (ha) in size, with a total infrastructure footprint of 31 ha. A map showing the Annex I habitats in the Scart Mountain Wind Farm site superimposed with the proposed infrastructure footprint is provided in Figure 1 in Appendix 1. The only parts of the proposed infrastructure that impact upon Annex I habitats are (from north to south):

- proposed turbines T1 to T5 and the associated access in tracks at Knocknanask (situated on Annex I habitats comprising H4010 wet heath and a small amount of H4030 dry heath); and,
- the connecting access track between turbines T6 and T7 at Knocknasheega (which crosses a short section of dry heath H4030 within the conifer plantation).

None of the remaining footprint of the proposed wind farm impacts Annex I habitats – it is predominantly located within coniferous forestry plantation, with small areas of other non-Annex I habitats including grasslands, scrub, hedgerows, tree lines and mixed woodlands.

It will be noted that no blanket bog will be lost, and consequently there will be no loss of irreplaceable habitat[2].

[2] The term 'irreplaceable' is typically applied to blanket bog and ancient semi-natural woodland. Heathland can be relatively easily reinstated and is not considered irreplaceable in biodiversity metric systems.

4.1.1 Knocknanask

At Knocknanask both dry heath and wet heath habitats are in poor condition with a conservation status of Unfavourable Bad (AECOM, 2023). The future prospects of these areas were rated as Unfavourable Bad due to evidence of regular burning at Knocknanask in the recent past, and the likelihood of its recurrence. Grazing levels were also noted as a pressure on these habitats.

The infrastructure footprint on the western and south-western slopes of Knocknanask is through an area of wet heath which is particularly degraded by recent burning and with some impact likely from grazing as well, and has also been subject, at least in some places, to historic peat extraction. In this zone, deergrass is typically abundant (to an unfavourable degree), and heather species are typically very short and mainly comprise heather *Calluna vulgaris* and bell heather *Erica cinerea*, with cross-leaved heath *Erica tetralix* very rare. The moss flora is poor with little to no sphagnum and in places no pleurocarpous moss either – where present, pleurocarpous moss is generally represented by *Hypnum jutlandicum* only, and *Campylopus introflexus* (a coloniser of bare peat as was likely caused by the recent burning) can often be found.

On the eastern slopes the infrastructure footprint is through wet heath mostly dominated by purple moor-grass *Molinia caerulea* (often overwhelmingly so), although there are areas with co-dominant heather. Cross-leaved heath is occasional and never abundant, and there is often a little bilberry *Vaccinium myrtillus* and/or bell heather, the latter occasionally abundant. The moss layer is generally poor and again commonly comprises only *Hypnum jutlandicum*, although *Sphagnum capillifolium* is occasional at low to moderate cover. Clear signs of recent burning are very localised in this area, however the rather poor flora and occasional presence of *Campylopus introflexus* suggest that there has been more extensive burning in the past.

The proposed access roads also pass through two very small patches of dry heath in the south and east of the route. In the north, the relevant dry heath is dominated by very dense mature ling heather, with occasional bell heather and bilberry, sometimes with sparse purple moorgrass. In the south, the species composition is similar but the vegetation is shorter, in common with adjacent more extensive wet heath in which deergrass is abundant.

4.1.2 Knocknasheega

The access track crosses a short section of dry heath to the east of the conifer forestry plantation. Throughout the plantation dry heath vegetation dominates the clearings. Within these, heather and bilberry tend to dominate, with frequent bell heather. The heather is mostly mature. Acid grasses are generally scattered thinly, but in places form a micro-mosaic of acid grassland within otherwise ericoid-dominated vegetation, in particular where there appears to be locally-concentrated deer grazing. In some clearings, stands of dense bracken occur in mosaic with the dry heath. Moss cover amongst the heather is generally high with several species common throughout, including *Rhytidiadelphus loreus, Hylocomium splendens* and *Pleurozium schreberi* (this in in contrast to Knocknanask, where the moss flora was poor and often only comprised *Hypnum jutlandicum*, probably a reflection of past burning). Scattered pines *Pinus* sp. occur within the dry heath patches, and pine colonisation has probably led (and appears to be continuing to lead) to an increase in pine woodland at the expense of dry heath.

4.1.3 Importance of impacted habitats

The areas and proportions of affected Annex I habitats, and totals within the red line boundary of the proposed project, are shown in **Error! Reference source not found.** below. The affected areas have been derived from an intersection of the GIS habitat data (as used for the maps shown in Appendix 1) with the infrastructure footprint.

Table 1. Areas and proportions of Annex I habitats within infrastructure footprint and red line boundary

Annex I habitat	Area in footprint of proposed infrastructure (ha)	Area in red line boundary (ha)	Proportion inside footprint	Proportion outside footprint	Conservation Status of habitats inside footprint
H4030 (Dry heath)	0.33	41.2	0.8 %	99.2 %	Unfavourable Bad
H4010 (Wet heath)	2.79	114.91	2.4 %	97.6 %	Unfavourable Bad

Note: The Annex I habitats Active blanket bog (H7130), Inactive blanket bog (H7130) and Alkaline fen (H7230) are also present on-site but not within the infrastructure footprint, with no resulting loss to these habitats, and also no likely residual impacts upon them.

Although the quantities of dry heath and wet heath that will be lost are very small in the context of the site (0.8% and 2.4%) of the dry heath and wet heath on-site respectively (i.e. 99.2% of wet heath and 97.6% of dry heath will be retained) they are considered to be of greater than local importance because they are Annex I habitats. However, they do not constitute nationally important examples of these habitats owing to their poor condition and lack of distinctiveness. The small extent of the affected area is also relevant: the area of dry heath and wet heath in Ireland is estimated at 123,001 ha and 159,851 ha respectively, hence the losses of each from the proposed project constitute only 0.00027% and 0.002% of these amounts (and, to reiterate, there is no loss of blanket bog at all). Both dry heath and wet heath are more common in upland areas and the western region. County level importance is therefore considered appropriate in the context of County Waterford where the development is proposed. Given the County level importance of these residual impacts, a comprehensive evidence-based Biodiversity Management Plan has been proposed to bring net benefits in terms of both the condition (through proposed improvements) and extent (through increased heathland via removal of plantation with existing heathy ground flora around turbines) of Annex I habitats at the site. This will deliver overall benefits for peatland/moorland habitats from the proposed project.

In regard to cumulative impact with Dyrick Hill Wind Farm, note that that consent for that development has been refused, and that the grounds for this included its situation within a wind farm exclusion zone and a sensitive landscape area, and a “lack of interrogation into the implications on hen harrier and golden plover”. In the event that Dyrick Hill Wind Farm was later consented, and presuming the same stated loss of 3.5 ha of dry heath, that loss would be small in comparison to extents of retained heath habitat in the wider locality, such that cumulative impact with the proposed project would not increase the category of impact significance for heathland habitat.

Note that listing of habitat within Annex I of the Habitats Directive does not equate to protection – protection arises from designation of Annex I habitat as qualifying features of Special Areas of Conservation, which the habitats within the site are not; neither would they be likely to be designated as such since they are not outstanding examples in the relevant Atlantic biogeographic zone. As such, there is no contravention of the Habitats Directive. Further, as discussed above, the losses to these habitats, which are not in good condition, are minor compared to the retained extents to which improvement in condition can reasonably be expected with the measures in the BMP (see Section 5).

5. Proposed improvements to Annex I habitats

The Scart Mountain Wind Farm Biodiversity Management Plan (BMP) will enact three main strands of activities to compensate for residual adverse impacts. FuturEnergy has taken this opportunity not only to provide compensation for lost habitat area, but to provide further large-scale enhancements to biodiversity and habitats in the local area. These enhancement measures will be supported for the lifespan of the windfarm (35-40 years). The core aims of the biodiversity plan are:

- management of lands to improve suitability for foraging hen harrier;
- restoration of peatland/moorland habitats; and,
- restoration of conifer plantation to dry heath.

Implementation of this management plan will result in improvements to the Conservation Status of 118 ha of open peatland/moorland, comprising Annex I dry heath, Annex I wet heath and Annex I blanket bog at Knocknanask. Additionally, 37.24 ha of conifer plantation will be restored to Annex I dry heath at Knocknasheega, providing both offset for the loss of 3.12 ha of Annex I heathland habitats at Knocknanask and (given the substantially larger area gained) additional enhancement. These measures constitute an overall net benefit for Annex I habitats on-site, with a gain in heathland habitats of 34.12 ha (accounting for restoration to dry heath of 37.24 ha, and 3.12 ha of heathland habitats lost to the infrastructure footprint), and with additional restoration measures on a further 118.1 ha of dry heath, wet heath and blanket bog at Knocknanask.

In addition to this, a further 79 ha of agricultural land will be managed for hen harrier conservation. To this end, land-owner agreements have already been signed with the relevant parties to ensure that the planned management and conservation measures will take place across the lifespan of the wind farm. These landowner agreements ensure that conservation measures are enforceable by the proposed project.
Furthermore, the implementation of the Biodiversity Management Plan can be put as a condition of any permission. This could provide additional certainty to the implementation of the Biodiversity Management Plan and the ongoing land management measures therein.

Monitoring is an integral part of the BMP (as set in Sections 5.1 and 5.2 of the BMP). Monitoring will be carried out by a team of ecologists led by a senior experienced ecologist (Environmental Specialist Advisor (ESA)) who will assume overall responsibility for the role including liaison with the FuturEnergy's Owner Engineer, the Developer, the contractors' environmental team (including the Ecological Clerk of Works), statutory bodies and landowners. A Steering Group will be formed comprising the ESA, the farm plan team, and where required the landowners. This steering group will review the results from the monitoring programme, and on the basis of this evidence adapt if and as necessary the management measures over the life-time of the project. This will ensure delivery of the best habitat restoration and hen harrier breeding success outcomes, according to the latest science and national guidelines over the 35-40 year lifespan of the development. The specific actions in the BMP are evidence-based and follow national guidance (these can be read in full in the BMP itself (https://scartmountainplanning.ie/wp-content/uploads/2024/12/Appendix-2-1-Biodiversity-Management-Plan.pdf)).

Note that the ecological adviser and steering group may advise over the course of the BMP that management be adjusted – this would accordingly be implemented and the BMP updated. This allows for the BMP to be responsive to national guidance and scientific best practice over the longer-term.

The remainder of this section addresses specific queries raised by respondents regarding aims 2 and 3 of the Biodiversity Management Plan: restoration of peatland/moorland habitats, and restoration of conifer plantation to dry heath. Specific queries related to hen harrier habitat are addressed in section 6.

5.1 Restoration of peatland/moorland habitats at Knocknanask

The condition of dry and wet heath at Knocknanask is currently Poor, and the majority of blanket bog habitat is inactive and in Very Poor condition with the exception of one very small isolated area of Good condition active blanket bog on the south-eastern slope of Knocknanask. The future prospects assessment of all of these habitats identified burning as a major threat, resulting in Unfavourable Bad conservation status for the dry heath, wet heath and inactive blanket bog. The isolated patch of Good condition active blanket bog was assessed as Unfavourable Inadequate, because, despite its current Good condition, future prospects could not be guaranteed as favourable given that burning at Knocknanask appears to be a fairly regular occurrence and could adversely affect this vegetation patch over the time period for this criterion (twelve years) (AECOM, 2023). Grazing was also identified as a factor affecting the status and potential for recovery of wet heaths and inactive blanket bog.

Detailed habitat assessment of the site by AECOM suggested that with cessation of burning, the threat of further degradation by burning at Knocknanask would be immediately removed and, if an appropriate grazing regime is also implemented, condition of a substantial area of wet heath particularly on the western and south-western slopes of Knocknanask would be expected to gradually improve. Note that Knocknanask is already subject to human intervention through grazing (most semi-natural habitats are impacted by humans), whereas the BMP proposes reduction grazing and cessation of burning and thus do not increase reliance on human management.

The BMP addresses the specific threats of burning and grazing, through an immediate cessation of the burning at the site[3] and a detailed grazing management plan which will reduce grazing pressure across the site and introduce seasonal grazing by cattle to reduce the dominance of purple moor-grass and improve the diversity and condition of wet heath habitats[4]. The use of cattle for this purpose was independently verified by the agricultural consultants. In addition to ameliorating the immediate threats of burning and inappropriate grazing to this site, a detailed hydrological investigation will be carried out and recommended measures put in place to repair any hydrological issues which would hinder the recovery of Annex I habitats. This approach addresses the need outlined in the Habitats Directive for the immediate and functional protection of Annex I species and habitats and recognises the importance of ecological restoration of degraded Annex I habitats following the EU Biodiversity Strategy. Whilst Annex I habitats onsite can provide important refuges for rare and specifically adapted species even in their current to degraded condition, and the suitability for these species and frequency of their occurrence will be increased by restoration measures, and over a much larger area than that negatively impacted by the development.

The capacity of heathland and blanket bog sequester carbon is dependent on the condition of these habitats, and habitats in poor condition (e.g. those with frequent areas of bare ground, regular burning and/or erosion) are often a net source of carbon releases. Conversely, Good condition active blanket bog, is most effective habitat type in terms of

[3] Burning is prohibited under the Wildlife Act during the period 15 April to 31 August, however the intention is for burning to cease year-round, thus ban of burning covers all seasons under the landowner legal agreements.
[4] Note that sheep grazing is not being removed, but reduced, so there is not a whole-sale change to cattle grazing. The cattle grazing will be seasonal also, and not in winter. The site is dominated by wet heath and largely sloping, and the retained degraded bog is demonstrably of a drier type given the scarcity of sphagnum, thus the site is not unsuitable for cattle in terms of wetness; wetness of the site was also not raised as an issue by the agricultural consultant). With regard to cattle fencing, current fencing will be retained/adjusted and stock-proofed for cattle as needed. Further details of cattle management will be determined post-consent.

carbon sequestration. This process is highly dependent on presence of active peat building species such as *Sphagnum* mosses and hare's tail cotton grass *Eriophorum vaginatum*. Presently at Knocknanask, sphagnum moss species are very scarce in the large area of degraded blanket bog at the summit of the mountain. The most frequently encountered species is *Sphagnum capillifolium* which is normally common in functioning blanket bog ecosystems, but even this species is rare overall. *Sphagnum papillosum*, which is often common in intact bog, was only observed once during the habitat survey. Hare's tail cotton grass was also scarce. A cessation of burning and a more appropriate grazing regime is expected to reduce areas of bare ground and increase in cover of *Sphagnum* mosses improving the carbon sequestration and water retention of the blanket bog habitat at Knocknanask.

5.2 Restoration of dry heath following tree removal at Knocknasheega

The pine plantation at Knocknasheega is largely planted on former Annex I dry heath, and there is an established heather ground layer under much of the pine plantation. Hence, the removal of pine plantation would likely lead to the natural re-establishment of dry heath. Evidence of this likely outcome is illustrated by the block of dead pine plantation where dry heath is already beginning to re-establish at Knocknasheega, with no external aid. This process will be assisted by the removal of as much brash as possible to allow light to ground level, and the removal of existing pine trees by cutting as close as possible to ground level, rather than attempting to remove the root structures. Note that the removal of plantation and continued maintenance of tree absence is required in the wide turbine clearance zones both for operation and to reduce bat collision risk. It is unlikely that heather will need to be cut in the heath restoration zone, however it is included in the BMP in the unlikely event that it would be required.

The BMP has considered the unlikely possibility that dry heath will not naturally re-establish in the areas felled at Knocknasheega – for this reason the recolonisation of dry heath will be monitored by an ecological specialist advisor, and if the desired outcome is not achieved the Steering Group will put in place further actions. Possible actions include re-seeding with seeds sourced from adjacent areas, and/or directly plug-planting suitable plants to overcome any issues with lack of seedbank that might be present (although this is unlikely to be necessary given the aforementioned self-restoring heathland in the dead pine area). Monitoring of the heathland restoration areas includes monitoring and removal by hand-pulling of any conifers and/or broad-leaved trees that might establish in these areas. It is unlikely that invasive species will establish in these newly-felled areas as no invasive species were detected in this woodland during site surveys. However, if invasive plant species (such as rhododendron *Rhododendron* spp.) were to establish in these areas, they would be noted during monitoring and removed at the same time as the removal of any establishing conifers (which, as previously mentioned, is required in the turbine clearance areas for operation and reduction of bat collision risk).

There will be some time-lag between establishment of dry heath within the restoration areas and the point at which they could be considered to have reached Favourable condition. However this time-lag is not likely to be long owing to the established heathy ground layer already present beneath the conifer plantation. Furthermore, any such time period must be considered against the provision of a much greater area of heathland than that lost – as noted above, 37.24 ha of conifer plantation will be restored to Annex I dry heath at Knocknasheega, whereas losses of to the development footprint amount to only 3.12 ha of Annex I heathland habitats at Knocknanask.

6. Conclusion

In conclusion, the limited losses to Annex I habitat are more than compensated by the proposed beneficial habitat management over a much larger extent of Annex I habitats, whilst also increasing the overall extent of Annex I heathland.

Annex I H7130 blanket bog, H4030 dry heath and H4010 wet heath at Knocknanask show evidence of damage from recent burning and grazing leading to Poor condition. Burning would be prevented across the Knocknanask site and grazing appropriately managed for vegetation recovery under the scheme, leading to gradual recovery of these Annex I habitats at Knocknanask. Furthermore, the proposal to restore areas of conifer woodland to dry heath at Knocknasheega will increase the overall area of Annex I heathlands across the site by 34 ha. Additionally, a further 79 ha of agricultural land will be managed for hen harrier conservation. There will be no losses to Annex I blanket bog (priority or non-priority), and the losses to Annex I H4030 dry heath and Annex I H4010 wet heath compared to the overall area of these habitats on-site (0.33 ha/0.8% and 2.79ha/2.4%) are minor compared to the retained proportions (99.2% and 97.6% respectively) which will be subject to beneficial habitat measures, with net increases in overall extent of heathland as a result of the restoration of plantation to heathland at Knocknasheega.

7. References

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Appendix B EIRE ECOLOGY CURTAILMENT EXAMPLE

CURTAILMENT CASE STUDY

The subject site consisted of an existing windfarm in upland blanket bog and conifer plantation. A monitoring program was initiated in the summer of 2020 prior to curtailment and continued into 2021. The monitoring program consisted of two parts; placement of static bat detectors at turbine bases for 10 nights following Appendix 4 of SNH 2019. In addition to the placement of statics, dog lead collision monitoring was conducted at each of the turbine bases where statics were placed (again for ten days in a row). Weather data was also recorded from the onsite met mast. In this way fatalities could be linked with bat activity and weather conditions. Searcher efficiency and predation removal trials were also conducted.

Surveys were conducted at 46% of the turbines during the summer and autumn of 2020 with three bat fatalities found (prior to the implementation of curtailment). Curtailment commenced in September 2020 which stopped the operation of turbines when temperatures rose above 11 degrees Celsius and wind speed below 5 m/s between dusk and dawn each night (74% of total bat activity). No further bat fatalities occurred during the Autumn 2020 period despite levels of bat activity across the site higher than in summer.

In order to assess the effectiveness of the curtailment, surveys were repeated in 2021. The turbines were again monitored for ten nights in a row for the spring, summer and autumn periods of 2021. In total 120 days of carcase searches were conducted in 2021 (in addition to the 80 conducted in 2020). No bat fatalities were found in 2021.

Evidence of Absence V2 was used to estimate a maximum predicted overall number of fatalities from 2020 and 2021. The software predicted an overall fatality rate of no more than 0.44 bat fatalities per turbine (0.52 bat fatalities/MW/year) in 2020 (90% confidence) reducing to no more than 0.18 bat fatalities per turbine (0.22 bat fatalities/MW/year) in 2021 (90% confidence); a 58% decrease in upper limits of estimated fatalities.

The windfarm in question was installed before buffer zones were used as a mitigation. An analysis of distances from landscape features shows many of the turbines were located close to landscape features (73% of turbines had landscape features located within the recommended 50m buffer from wing tip to landscape feature); see table below. This appears to indicate that curtailment can work an alternative to buffer zones in some cases.

% of turbines	Distance to landscape feature
28	20m
38	21-40m
7	41-60m
4	60-95m
23	96m+

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