Response to Observations

Knockshanvo Wind Farm Co. Clare

An Coimisiún Pleanála Ref No: 320705-24

DOCUMENT DETAILS

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Planning and Environmental Consultants

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EXECUTIVE SUMMARY

MKO have been instructed by FuturEnergy Knockshanvo Designated Activity Company to prepare this Response to Observations, having been invited to respond to same by An Coimisiún Pleanála on the 17th September 2025. The request was made in relation to the Strategic Infrastructure Development (SID) planning application under Section 37E of the Planning and Development Act 2000, as amended before the Commission for consideration (Case reference: ABP-320705-24), concerning the proposed wind farm development which will comprise of 9 no. wind turbines and associated infrastructure in the townlands of Knockshanvo and adjacent townlands Co. Clare and Co. Limerick.

As set out in Section 1, this response to submissions document first comments on observations from Third Parties which have been categorised into themes, followed by commentary on observations from Statutory Bodies and finally deals with observations made by the relevant local authorities, Clare County Council and Limerick City & County Council.

As discussed in Section 2, in relation to the Climate Action and Low Carbon Development Act 2015 (as amended), Consenting Authorities must meaningfully engage with national climate objectives when exercising their functions, including decision-making and must also demonstrate how those functions have been carried out in a manner consistent with, in so far as practicable, national climate objectives. Taking these legal duties into account, the Commission is required to attribute significant weight to national climate policy and the delivery of renewable energy infrastructure, such as the Proposed Wind Farm. Having regard to these matters, it is considered that the Commission can exercise its planning judgement to determine the application in a manner which is consistent with the achievement of national and EU policy goals, in accordance with its statutory duty under Section 15 of the Climate Act.

As discussed in Section 3 of this Response to Observations, there were 120 no. submissions received on the application from Third Party Observers. Table 2 outlines the common themes identified within the Third-Party submissions and the relevant areas of expertise within the project team assigned to address each theme. Each theme is addressed in full in Section 3.

Section 4 of this Report deals directly with observations by Statutory Consultees, namely AirNav Ireland and Shannon Airport, the DAU, Fáilte Ireland, HSE and Transport Infrastructure Ireland. Each Statutory Body is dealt with under a separate heading, and all relevant items are addressed in full, with appendices referenced where appropriate.

Section 5 of this report deals directly with observations by the local authorities in which the Proposed Development is located, Clare County Council and Limerick City and County Council. Both Local Authorities are dealt with under separate heading, and all relevant items are addressed in full, with appendices referenced where appropriate.

As set out in the summary section in Section 6, the information contained in this Response to Observations constitutes a full and robust response to all matters raised and the information provided here will directly assist the An Coimisiún Pleanála in their ongoing consideration of the planning application.The Wind Farm Site will contribute towards the national wind energy target of 9GW by 2030 and is strongly supported by a comprehensive suite of European, national, regional, and local policy.

To combat the effects of climate change, Ireland must decarbonise its economy by 2050. There is no “silver bullet” to do so. It will take several individual renewable energy projects to decarbonise the Irish economy. The scale of the challenge we face to decarbonise the Irish economy is enormous, but the climate change implications of not doing so are even greater. There is no other way to decarbonise a modern society except through renewable energy projects such as the Proposed Development.

Having regard to the key points set out in this Response to Observations, it is respectfully requested that the Commission consider the relevant international, national and regional planning context that applies to the Wind Farm Site, and grants permission for the application as proposed.

1. INTRODUCTION

MKO have been instructed by FuturEnergy Knockshanvo Designated Activity Company (the Applicant), to prepare this Response to Observations, having been invited to respond to same by An Coimisiún Pleanála (the Commission) on the 17th September 2025. The request was made in relation to the Strategic Infrastructure Development (SID) planning application under Section 37E of the Planning and Development Act 2000, as amended (the Act) before the Commission for consideration (Case reference: ABP-320705-24), concerning the proposed wind farm development which will comprise of 9 no. wind turbines and associated infrastructure in the townlands of Knockshanvo and adjacent townlands Co. Clare and Co. Limerick. The letter from the Commission states that the deadline for submission is the 15th October 2025 by 5.30pm. An extension was requested and subsequently granted with a new deadline for submission set as 19th April 2026 by 5.30pm.

At the outset, it is reiterated that that the Knockshanvo Wind Farm development is one integrated project comprising of two distinct components:

- The wind farm and its associated infrastructure, which is the subject of the current application under Section 37E of the Act.
- The electrical grid connection works to connect the wind farm to the national grid, which is the subject of a separate application under Section 182A of the Act.

For ease of reference, the following terminology is used throughout this document:

- Where the **'Wind Farm Site'** is referred to, this relates to all components within the Wind Farm Application under Section 37E of the Act.
- Where the **'Proposed Development'** is referred to, this relates to all the project components i.e. the Wind Farm Site and Grid Connection.
- Where **'Grid Connection'** is referred to, this relates to all components within the Grid Connection Application under Section 182A of the Act.

Both the Environmental Impact Assessment Report (EIAR) and the Natura Impact Statement (NIS) consider the combined impacts of these individual elements of the Proposed Development. A separate response to submissions relating to the Grid Connection planning application (Case Reference – VA.03.320727), was submitted to the Commission on the 18th of August 2025.

1.1 Response Structure

This Response to Observations comments firstly on observations from Third Parties which have been categorised into themes, followed by commentary on observations from Statutory Bodies and finally deals with observations made by the relevant local authorities, Clare County Council (CCC) and Limerick City & County Council.

This response is structured as follows:

- **Section 1 –** Introduces the document and its structure,
- **Section 2 -** Provide an overview of S.15 of the Climate Act, in the context of the recent Coolglass Judgement,
- **Section 3 –** Addresses Third-Party observations in accordance with the Commission's request,
- **Section 4 –** Addresses Statutory Consultees' Observations in accordance with the Commission's request,
- **Section 5 –** Addresses the Local Authority Observations in accordance with the Commission's request,
- **Section 6 –**Concluding remarks.

2. CLIMATE ACTION AND LOW CARBON DEVELOPMENT ACT 2015 (AS AMENDED)

The Climate Action and Low Carbon Development Act 2015 (as amended) ('the Climate Act') establishes a legislative precedent to reduce Ireland's carbon emissions. The Climate Act legally binds Ireland to achieve net-zero emissions no later than 2050, and to a 51% reduction in emissions by the end of this decade.

The Climate Act also incorporates the following key provisions:

- Embeds the process of setting binding and ambitious emissions-reductions targets in law;
- Provides for a national climate objective, which commits to pursue and achieve no later than 2050, the transition to a climate resilient, biodiversity-rich, environmentally sustainable and climate-neutral economy;
- Provides that the first two five-year carbon budgets proposed by the Climate Change Advisory Council should equate to a total reduction of 51% over the period to 2030, relative to a baseline of 2018;
- The role of the Climate Change Advisory Council has been strengthened;
- The government must adopt carbon budgets that are consistent with the Paris agreement and other international obligations;
- Actions for each sector will be detailed in the Climate Action Plan which must be updated annually; and
- Local Authorities must prepare individual Climate Action Plans which will include both mitigation and adaptation measures and will be updated every five years.

Section 15(1) below places an obligation on public bodies to perform their functions in a manner which favours climate action, unless it is objectively impracticable to do so.

"A relevant body shall, in so far as practicable, perform its functions in a manner consistent with:

a) the most recent approved climate action plan,
b) the most recent approved national long term climate action strategy,
c) the most recent approved national adaptation framework and approved sectoral adaptation plans,
d) the furtherance of the national climate objective, and
e) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State."

Having regard to these functions, **Table 1** below demonstrates how, in determining the applications for the Proposed Project, the Commission would be performing its functions in a manner consistent with Section 15(1) of the Climate Act.

Table 1 Compliance with Section15(1) of the Climate Act.

Section 15(1) Requirement	Proposed Wind Farm Compliance	Conclusion
a) Most recent approved climate action plan	The Wind Farm Site will contribute directly towards the CAP25 goals of 9GW of wind energy by 2030 and renewable electricity share of 80% by 2030. Onshore wind is identified as being critical in the decarbonisation of the electricity and as such the Proposed Wind Farm should be considered in that regard.	A grant of permission would constitute the performance of the Commission's functions in a manner consistent with CAP 25, insofar as is practicable.
b) Most recent approved national long term climate action strategy,	The Wind Farm Site will support the national long term climate action strategy as the development represents critical renewable energy infrastructure that will make a meaningful contribution to achieving the State's reduced emissions targets and the transition towards a climate resilient society	A grant of permission would constitute the performance of the Commission's functions in a manner consistent with the most recent approved national long term climate action strategy, insofar as is practicable.
c) Most recent approved national adaptation framework and approved sectoral adaptation plans	The Wind Farm Site will aid Ireland in adhering to, or limiting the exceedance of, the country's carbon budgets. Currently, the electricity sector is rapidly approaching the designated sectoral ceiling of 20 Mt CO_2 eq for the first carbon budget period from 2020 to 2025. The national renewable energy targets and the carbon budgets are integral to the government's response to the climate crisis.	A grant of permission would constitute the performance of the Commission's functions in a manner consistent with the most recent approved national adaptation framework and approved sectoral adaptation plans, insofar as is practicable.
d) the furtherance of the national climate objective	The Wind Farm Site consisting of 9 no. wind turbines and associated infrastructure aligns with national climate policy objectives. The Proposed Wind Farm will make a significant contribution to achieving the CAP 25 target of 9GW of onshore wind energy by the year 2030.	A grant of permission would constitute the performance of the Commission's functions in a manner consistent with the furtherance of the national climate objective insofar as is practicable.
e) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State	The Wind Farm Site will support the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State through the generation of wind energy and displacing electricity that would otherwise be produced from fossil fuel sources.	A grant of permission would constitute the performance of the Commission's functions in a manner consistent with the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State.

3. RESPONSE TO THIRD PARTY OBSERVATIONS

3.1 Introduction

There were 120 no. submissions received on the application from Third Party Observers. **Table 2** below outlines the common themes identified within the Third-Party submissions and the relevant areas of expertise within the project team assigned to address each theme.

Table 2 Common themes identified within Third-Party submissions

Theme	Lead Expert for Response
Duplicate Planning Applications	MKO Planning
Cumulative Impact Assessment	MKO Planning
Planning Policy Compliance	MKO Planning
Procedural and Regulatory Matters	MKO Planning
Traffic and Road Safety Assessment	Alan Lipscombe Traffic and Transport Consultants – Traffic Consultants
Biodiversity	MKO Ecology
Ornithology	MKO Ornithology
Air Pollution	MKO Environment
Public Consultation and Engagement	MKO Planning
Hydrology	Hydro Environmental Consultant (HES) - Water and Environmental Management Consultants.
Peat Stability	HES
Noise and Vibration	AWN – Acoustics Consultants
Landscape and Visual Impact	MKO Landscape
Landowner Consent	MKO Planning
Property Devaluation	MKO Planning
Impact on Cultural/Spiritual Sites	MKO Environment
Human Health	MKO Environment
Shadow Flicker	MKO Environment
Employment	MKO Environment
Equine	MKO Environment

3.1.1 Duplicate Planning Applications

Several observations raised concerns that identical applications were submitted to the Commission for the Wind Farm Site and Grid Connection.

Two separate applications were required under planning legislation.

The Wind Farm Site components were submitted to the Commission under the provisions of Section 37A of the Act, as it exceeds the threshold of 50MW as set out in the Seventh Schedule of the Act with an overall capacity of 51.3-64.8MW, and also satisfies one or more criteria under Section 37A(2) of the Act. In this regard, the Commission issued SID determinations on two occasions under references 315797-23 and 319215-24 (the requirement for a second determination was required in respect of opening a Section 37CC(1) Consultation under the Design Flexibility Process).

The Grid Connection, comprising of a 110kV electricity transmission cable was required to be progressed under Section 182 of the Act, as the legislation clearly mandates that high voltage lines at 110kV or more must be considered under this section of the act, as outlined below:

> *"**182A**.—(1) F1027[Subject to subsection (1B) and section 182AA, where] a person (hereafter referred to in this section as the "undertaker") intends to carry out development comprising or for the purposes of electricity transmission, (hereafter referred to in this section and section 182B as "proposed development"), the undertaker shall prepare, or cause to be prepared, an application for approval of the development under section 182B and shall apply to the Board for such approval accordingly"*

Section 182A(9) further states;

> *In this section "transmission", in relation to electricity, shall be construed in accordance with section 2(1) of the Electricity Regulation Act 1999 but, for the purposes of this section, the foregoing expression, in relation to electricity, shall also be construed as meaning the transport of electricity by means of—*
>
> *a) a high voltage line where the voltage would be 110 kilovolts or more, or*
> *b) an interconnector, whether ownership of the interconnector will be vested in the undertaker or not.]*

This position was confirmed by the Commission to the Applicant in correspondence dated the 18th January 2024 following pre-application consultations with the Commission under reference 317763-23.

Whilst two separate applications were required procedurally, both the EIAR and the NIS consider the combined impacts of both these individual elements of the Proposed Development.

In summary, the submission of two separate planning applications was a procedural requirement under current planning legislation and does not represent a duplication of proposals.

3.1.2 Cumulative Impact Assessment

Several observations raise concerns regarding the inadequacy of the cumulative impact assessment undertaken for the Wind Farm Site, particularly regarding nearby wind farm projects including the proposed Oatfield (ACP Ref. PA03.318782) and proposed Ballycar Wind farm (ACP Ref. PA03.318943) developments. However, these concerns are not substantiated with evidence.

For clarity, a full Cumulative Impact Assessment was undertaken for the entire Proposed Development, including the Wind Farm Site and Grid Connection and the cumulative assessment methodology and the approach adheres to best-practise guidelines. This assessment specifically addressed the cumulative impact of the Wind Farm with Oatfield (ACP Ref. PA03.318782) and Ballycar (ACP Ref. PA03.318943) wind farms and all relevant wind farms in the surrounding area, as identified in Table 2-9, Chapter 2 of the EIAR, ensuring that the combined effects were fully evaluated.

The purpose of the Cumulative Impact Assessment, was to identify the likely significant effects of the Wind Farm Site on the surrounding environment when considered collectively with approved and existing projects and projects pending a decision from the planning authority and land-uses in the defined cumulative assessment study areas. The assessment specifically assessed the impacts arising from the Wind Farm in combination with other projects in the area inclusive of impacts on biodiversity, air and climate, noise, landscape, and material assets confirming that the predicted effects remain within acceptable thresholds.

Assessment material for the cumulative impact assessment was compiled on the relevant projects (see Appendix 2-2 of the EIAR) within the vicinity of the Wind Farm Site. The material was gathered through a search of relevant online Planning Registers and EIA portal, reviews of relevant EIAR (or historical

EIS) documents, planning application details and planning drawings, and served to identify past and future projects, their activities, and their environmental impacts. This included a detailed review of Oatfield (ACP Ref. PA03.318782) and Ballycar (ACP Ref. PA03.318943) wind farm developments, to ensure that cumulative impacts were assessed accurately.

To gather a comprehensive view of cumulative impacts within the cumulative study area and to inform the EIA process being undertaken by the consenting authority, each relevant chapter within the EIAR addresses the potential for cumulative effects where appropriate and within the context of their identified cumulative study area.

A long list of projects considered (i.e. the largest cumulative study boundary of 25 km list) across all disciplines in their cumulative impact assessment is included in Appendix 2-2 of the EIAR.

In conclusion, the cumulative impact of the Wind Farm Site and any potential interaction with Oatfield and Ballycar Wind farms, has been robustly assessed using a clear and detailed methodology. The findings confirm that, with the proposed mitigation in place, there will be no significant adverse cumulative effects on the receiving environment.

For a full breakdown of the Cumulative Impact Assessment methodology, please refer to Section 2.7 of Chapter 2 of the application submitted with the EIAR.

3.1.3 Planning Policy Compliance

An observation states that the application for the Wind Farm Site contravenes a number of policies in the Clare County Development Plan 2023-2029 (CCDP), namely the following CCDP Objectives:

- CDP 2.1 (Climate Action)
- CDP 8.4 (Agriculture)
- CDP 10.11 (Recreational Routes)
- CDP 14.3 (Western Corridor Working Landscape)
- CDP 11.47 [e] (Renewable Energy)
- CDP 14.2 (Settled Landscapes)
- CDP 15.12 (Biodiversity and Habitat Protection)
- Strategic Aims 15.1 (Biodiversity, Natural Heritage and Green Infrastructure)
- Strategic Aims 16.1. (Architectural and Cultural Heritage)

The planning application was supported by a robust and comprehensive planning report which clearly outlines the strong policy support that is in place at International, National and Regional level, particularly in the context of achieving the transition to a low carbon and climate resilient economy, increasing renewable energy generation, and enhancing energy security.

Furthermore, Table 5-2 of the Planning Report contains a detailed compliance statement, demonstrating the Wind Farm Site's consistency with all relevant policies of the CCDP.

For completeness, **Table 3** below address the observations raised in relation to alleged contraventions of these policy objectives and further demonstrates compliance of the Wind Farm Site with relevant policy objectives of the CCDP.

In conclusion, the Wind Farm Site, is fully consistent with the CCDP, which acknowledges the significance of climate change and the need for continued support and investment within renewable energy generation. The Wind Farm Site will support the Council in achieving its objective to ensure the security of energy supply by accommodating the development of wind energy resources, including the proposed Knockshanvo Wind Farm.

Table 3: Proposed Development's Compliance with the CCDP

Policy Theme	Policy/ Objective	Observation Made	Compliance
Climate Action	**CDP 2.1 (Climate Action)** **It is an objective of Clare County Council:** **a) To support the implementation of the National Climate Action Plan 2023 and the National Climate Change Adaptation Framework (and any subsequent versions thereof), and to work with the Regional Climate Action Offices to enable County Clare to transition to a low carbon and climate resilient county;** **b) To adopt sustainable planning strategies through integrating land use and transportation and by facilitating mixed use developments as a means of supporting national targets of climate policy mitigation and adaptation objectives, and reducing our carbon footprint and greenhouse gas emissions; and** **c) To raise awareness and understanding of the impacts of climate change on both the local economy and communities in the county, and the ways communities can increase their response and grow their resilience to these impacts.**	An Observation states that the planning application is in contravention of this policy objective.	The Wind Farm Site is in compliance with CDP2.1 Climate Action as it supports the implementation of the Climate Action Plan and will generate clean, renewable electricity, which can be integrated into the grid to meet the increasing demand for electricity across various sectors. By supplying sustainable renewable energy, the Wind Farm Site will reduce the need for non-renewable sources like coal and oil, helping to transition toward cleaner energy usage in the county. Accordingly, it is considered that the Wind Farm Site does not give rise to any contravention of this policy

Policy Theme	Policy/ Objective	Observation Made	Compliance
Renewable Energy	**CDP 11.47 (e) Renewable Energy** **To strike an appropriate balance between facilitating renewable and wind energy-related development and protecting the residential amenities of neighbouring properties;**	Observations raised regarding the scale and height of the turbines and their impact on residential amenities of a number of residential properties and potential property devaluation, contrary to this policy objective.	The design and layout of the Wind Farm Site follows the recommendations and guidelines set out in the Wind Energy Development Guidelines 2006 (WEGs) and the Draft Wind Energy Guidelines 2019 (DWEGs) as well as relevant best practice guidance as outlined in Chapter 5 of the EIAR. As outlined in Section 5.6 of the EIAR, based on the available international literature, it is a reasonable prediction that the Wind Farm Site will not impact on the property values in the Population Study Area. it is submitted that the Proposed Wind Farm is appropriately designed and strikes an appropriate balance between facilitating renewable and wind energy-related development and protecting the residential amenities of neighbouring properties, in line with CDP 11.47 (e). Accordingly, it is considered that the Wind Farm Site does not give rise to any contravention of this policy
Biodiversity & Habitat Protection	**Strategic Aim 15.1** **"To promote sustainable development, in harmony with local biodiversity and, if possible, take steps to enhance the natural environment;"**	Observations raised that the choice of *'very large-scale turbines'* is contrary to this strategic aim.	The EIAR takes into consideration the importance of the local biodiversity to make sure it is retained during the construction, operation and decommissioning phases of the Wind Farm Site. The Biodiversity Management and enhancement measures outlined in the Biodiversity Management Plan included at Appendix 6-5 of the EIAR will ensure that there will be

Policy Theme	Policy/ Objective	Observation Made	Compliance
			no residual net loss of habitats as a result of the Wind Farm Site, in line with Strategic Aim 15-1. Accordingly, it is considered that the Wind Farm Site does not give rise to any contravention of this policy
	CDP 15.12 **It is an objective of Clare County Council:** **a) To protect and promote the sustainable management of the natural heritage, flora and fauna of the County both within protected areas and in the general landscape through the promotion of biodiversity, the conservation of natural habitats, the enhancement of new and existing habitats, and through the integration of Green Infrastructure (GI), Blue Infrastructure and ecosystem services including landscape, heritage, biodiversity and management of invasive and alien species into the Development Plan;** **b) To promote the conservation of biodiversity through the protection of sites of biodiversity importance and wildlife corridors, both within and between the designated sites and the wider Plan area;**	Observations raised that protection of sites of biodiversity importance and wildlife corridors cannot be guaranteed when the Wind Farm Site is considered in conjunction with other wind farm developments in the area, contrary to this policy objective.	Having regard to Chapter 6 of the EIAR, the Wind Farm Site is considered to be in accordance with the objectives of the CCDP in relation to biodiversity, including the protection of sites of biodiversity importance and wildlife corridors. The EIAR includes a comprehensive assessment of both the individual and cumulative ecological effects of the Wind Farm Site. This assessment concludes that, provided the Wind Farm Site is constructed and operated in accordance with the design, best practice and mitigation that is described within the EIAR, significant individual or cumulative effects on ecology are not anticipated at the international, national, county or local scales. The Wind Farm Site has been designed with regards to the protection and sustainable management of natural heritage and has integrated all relevant biodiversity considerations throughout the construction, operational and decommissioning phases, throughout the EIAR. Accordingly, it is considered that the Wind Farm Site does not give rise to any contravention of this policy.

Policy Theme	Policy/ Objective	Observation Made	Compliance
Architectural Heritage	**CDP16.1 Architectural Heritage** **It is an objective of Clare County Council:** **a) To ensure the protection of the architectural heritage of County Clare through the identification of Protected Structures, the designation of Architectural Conservation Areas, the safeguarding of historic gardens, and the recognition of structures and elements that contribute positively to the vernacular and industrial heritage of the county; and** **b) To ensure that the archaeological and architectural heritage of the county is not damaged either through direct destruction or by unsympathetic developments. c) To support and promote architectural vernacular skills training and facilities in the county**	Observations raised that the scale of the Wind Farm Site is unsympathetic to the archaeological and architectural heritage of the area, contrary to this policy objective.	A robust archaeological assessment is provided in Chapter 13 of the EIAR. The Wind Farm Site has been designed with regards to the archaeological and architectural heritage of the surrounding area. Where potential effects have been identified appropriate mitigation measures have been proposed in order to minimise any such effects. A full assessment of the direct and indirect effects of the Wind Farm Site on the archaeological and architectural heritage within the study area is also provided. Where potential impacts have been identified, such as to potential sub-surface archaeology, appropriate mitigation measures have been proposed in order to minimise any such impacts, which will ensure the protection of architectural heritage in proximity of the Wind Farm Site, in line with CDP16.1. Accordingly, it is considered that the Wind Farm Site does not give rise to any contravention of this policy.
Agriculture	**CDP8.4 Agriculture** **It is an objective of Clare County Council:** **a) To facilitate proposals for sustainable and economically efficient agricultural and horticultural development whilst maintaining**	Observations raised that the planning application is in contravention of this policy within the CCDP.	While not an agricultural development, the Wind Farm Site has been carefully designed to integrate within a rural working landscape without causing adverse impacts on existing agricultural activities. Furthermore, it has the potential to bring significant positive benefit to the local community through a local Community benefit Fund which will be put in place to

Policy Theme	Policy/ Objective	Observation Made	Compliance
	and protecting the environment, the natural landscape and built heritage; b) To encourage the linking of agricultural production with added value enterprise and the diversification of rural enterprises; c) To support the development of rural/farmers markets and the development of food-based enterprises and tourism activities; and d) To support the on-going growth and development of the artisan food sector in the County.		provide direct funding to those areas surrounding the project during construction and operation of the Wind Farm Site. In this context, the Wind Farm Site supports this objective by contributing to the economic vitality and diversification of rural areas by complementing this rural agricultural area and enhancing Socio-economic resilience in the surrounding area. Accordingly, it is considered that the Wind Farm Site does not give rise to any contravention of this policy.
Recreation	CDP 10.11 Recreational Routes It is an objective of Clare County Council: a) To support the maintenance of existing off-road walking and cycling trails and support investment in the sustainable development of walking and cycling facilities, greenway and blueway corridors within the County and region extending into and between our County's settlements; b) To support and facilitate the development of a network of interlinked greenways and necessary supporting infrastructure along the former route of the West Clare Railway subject to project level environmental assessments	Observation raised that the planning application is in contravention of this policy within the CCDP.	The Wind Farm Site supports this objective by providing approximately 1.4km of a dedicated amenity trail in the form of a new track within and connecting to the 12 O'Clock Hills Trailhead. This amenity trail will allow walkers to relocate from the existing trail on the public road, into the forest environment, thus increasing the appeal and safety of the existing trail. In addition, two new viewing areas and one upgrade to an existing viewing area will be provided by the Wind Farm Site. The new viewing area will be placed along the northern end of the existing 12 O'Clock Hills' Fairy Trail, while upgrades will be made to the existing viewing area at the Lower Summit of Knockanuarha. Seating, signage and fixed binoculars are proposed for these two viewing areas, where there will be long-

Policy Theme	Policy/ Objective	Observation Made	Compliance
	(Refer to Volume 2 for the indicative route of the West Clare Railway Greenway); c) To promote the development of regional-scale off-road cycling trails and associated facilities in the Cratloe Woods area; d) To ensure that any proposed development for off-road walking and cycling are based on rigorous site/route selection studies, take into consideration the safe and adequate provision of access, set-down and parking areas, and where appropriate that natural borders/buffers are included as an integral component of the design; e) To complete heritage audits and improve heritage interpretation along walking and cycling routes in the County; f) To encourage and support the development of ancillary businesses such as bike hire and repair, outdoor clothing sales, drying rooms for walkers, surfers and others as well as businesses offering walking and cycling tours subject to normal planning considerations; g) To ensure that the development of any off-road walking and cycling routes, blueways and peatways is informed by an appropriate level of environmental assessment, including all		ranging views available. The proposed amenity trail and viewing areas are illustrated in Figure 4-15 of the EIAR. In summary, the Wind Farm Site strengthens and will complement the existing recreational offering of the surrounding area, particularly the 12 O' Clock Hills network in line with CDP 10.11. Accordingly, it is considered that the Wind Farm Site does not give rise to any contravention of this policy.

Policy Theme	Policy/ Objective	Observation Made	Compliance
	necessary reports to assess the potential impact on designated European sites and any impacts that may arise from increased visitor pressures; and h) To ensure that all cycle routes adhere to the principles contained within the national policy document Smarter Travel: A Sustainable Transport Future, and the National Cycle Policy Framework or any updated/amended guidance document and that integration between routes is achieved where appropriate. i) To have regard to the Code of Best Practice for National & Regional Greenways in the development of greenway corridors within the county.		
Landscape	CDP 14.2 Settled Landscapes It is an objective of Clare County Council: To permit development in areas designated as 'settled landscapes' to sustain and enhance quality of life and residential amenity and promote economic activity subject to: I. Conformity with all other relevant provisions of the Plan and the availability and protection of resources;	Observations raised that the choice of 'very large-scale turbines' is contrary to this objective.	The Wind Farm Site has been designed in accordance with the objectives of CDP 14.2 with regards to the siting and layout of the Wind Farm Site, which has followed a constraints-led approach as detailed in Section 3.6.1 of Chapter 3 of the EIAR. Furthermore, the Wind Farm Site has been designed to minimise visual intrusion on the surrounding area which has been fully assessed in Chapter 13 - Landscape and Visual of the EIAR and supported by the comprehensive suite of photomontages included in the Photowire Visualisation Booklet provided at Appendix 14-5 of the EIAR.

Policy Theme	Policy/ Objective	Observation Made	Compliance
	II. II. Selection of appropriate sites in the first instance within this landscape, together with consideration of the details of siting and design which are directed towards minimising visual impacts; III. III. Regard being had to the need to avoid intrusion on scenic routes and on ridges or shorelines. Developments in these areas will be required to demonstrate:- a) That the site has been selected to avoid visual prominence b) That the site layouts avail of existing topography and vegetation to reduce visibility from scenic routes, walking trails, water bodies, public amenities and roads. c) That design of buildings and structures reduces visual impact through careful choice of forms, finishes and colours, and that any site works seek to reduce visual impact.		In summary, the Wind Farm Site supports this policy objective by balancing sustainable development with the protection of residential amenity and visual integrity of this landscape. Accordingly, it is considered that the Wind Farm Site does not give rise to any contravention of this policy.
	CDP 14.7 Scenic Routes	Observations raised that the large-scale nature of the proposed turbines will have a negative impact	Having regard to Chapter 14 of the EIAR, the Wind Farm Site takes into consideration the effects on views

Policy Theme	Policy/ Objective	Observation Made	Compliance
	It is an objective of Clare County Council: **a) To protect sensitive areas from inappropriate development while providing for development and change that will benefit the rural community;** **b) To ensure that proposed developments take into consideration their effects on views from the public road towards scenic features or areas and are designed and located to minimise their impact; and** **c) To ensure that appropriate standards of location, siting, design, finishing and landscaping are achieved.**	on scenic routes in the vicinity (Bridgetown to Broadford; O'Callaghans Mills to Broadford and Tulla to Kilkishen).	from public roads and identifies Scenic Routes in proximity of the Wind Farm Site. A detailed Landscape and Visual Impact Assessment has been undertaken, which considers the potential effect of the Wind Farm Site on these routes. The assessment, which is supported by detailed photomontages included in Volume 2 of the EIAR, demonstrates that while the Wind Farm Site will be visible from certain views, it will not result in any significant adverse effects on any scenic views. The proposed turbine layout has been designed following a constraints-led approach, resulting in a coherent arrangement of turbines, viewed as contiguous and connected to each other visually and with consistent spacing in line with the siting and design guidance for wind farms, ensuring that visual impacts are minimised, in line with CDP 14.7. Accordingly, it is considered that the Wind Farm Site does not give rise to any contravention of this policy.
	CDP 14.3 Western Corridor Working Landscape **It is an objective of Clare County Council:** **a) To permit development in these areas that will sustain economic activity, and enhance social well-being and quality of life - subject to**	Observations raised that the planning application is in contravention of this policy within the CCDP.	The Wind Farm Site is located in the Western Corridor Working Landscape, which is described as areas that contain pockets of concentrated development or a unique natural resource. In relation to Scenic Routes, the CDP notes that there is a need to protect and conserve views adjoining public roads throughout the county where views are of high

Policy Theme	Policy/ Objective	Observation Made	Compliance
	conformity with all other relevant provisions of the Plan and the availability and protection of resources; **b) To ensure that selection of appropriate sites in the first instance within this landscape, together with consideration of the details of siting and design, are directed towards minimising visual impact;** **c) To ensure that particular regard should be had to avoiding intrusions on scenic routes and on ridges or shorelines. Developments in these areas will be required to demonstrate: i. i. That the site has been selected to avoid visual prominence ii. That site layouts avail of existing topography and vegetation to reduce visibility from scenic routes, walking trails, public amenities and roads iii. That design of buildings and structures reduces visual impact through careful choice of form, finishes and colours and that any site works seek to reduce the visual impact of the development.**		amenity value, however it is not proposed that this should give rise to the prohibition of development along these routes but that development, where permitted, should not seriously hinder or obstruct these views and should be designed to minimise visual impact. In this regard, the Wind Farm Site has been designed following a constraints-led approach with careful consideration of existing topography and vegetation to reduce visibility from scenic routes, walking trails, public amenities and roads in order to minimise potential impact on scenic routes and other sensitive receptors and ensure that visual impacts are minimised. A detailed Landscape and Visual Impact Assessment has been undertaken as part of the EIAR which concludes that the Wind Farm Site will not result in any significant adverse effects on any sensitivities or key characteristics of the surrounding landscape. Accordingly, it is considered that the Wind Farm Site does not give rise to any contravention of this policy.

3.1.4 Procedural and Regulatory Matters

3.1.4.1 Adherence to EIA Directive

Observations state that the Proposed Development, and by extension, the Wind Farm Site, does not adhere to the regulations of the EU EIA Directive 2011/92/EU as amended by 2014/52/EU under Article 3(1). However, the observations do not identify any particular shortcoming in the methodology, datasets, or conclusions of the assessment

The consolidated European Union Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, is transposed into Irish planning legislation by the Act and the Planning and Development Regulations 2001 (as amended) (the 'Planning Regulations'). Directive 2011/92/EU was amended by Directive 2014/52/EU (the 'EIA Directive') which has been transposed into Irish law with the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018).

Article 5 of the EIA Directive provides where an EIA is required, the developer shall prepare and submit an EIAR. The information to be provided by the developer shall include at least:

a) *a description of the project comprising information on the site, design, size and other relevant features of the project;*

b) *a description of the likely significant effects of the project on the environment;*

c) *a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;*

d) *a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;*

e) *a non-technical summary of the information referred to in points (a) to (d); and*

f) *any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.*

The EIAR provides information on the receiving environment and assesses the likely significant effects of the Wind Farm Site on it and proposes mitigation measures to avoid or reduce these effects. The EIAR also includes a Non-Technical Summary and provides a description of the reasonable alternatives considered. In addition, Article 94 of the Planning Regulations sets out the information to be contained in an EIAR, with which the EIAR complies.

In conclusion, the observation does not specify how the EIA Directive has been breached and the EIAR is demonstrably compliant with the EIA Directive in terms of the structure and content of the information required including the assessment of cumulative impacts.

3.1.4.2 Strategic Infrastructure Development

An observation states that the Wind Farm Site should not have been classified as Strategic Infrastructure Development (SID) by the Commission and that CCC have been deprived of their ability to exercise their planning powers.

The requirement for the Wind Farm Site to be progressed as SID was a procedural requirement under current planning legislation as discussed in Section 3.1.1 of this Response to Observations.

Furthermore, the Applicant respectfully disputes the assertion that CCC have been deprived of their ability to exercise their planning powers. Prior to submission of the application, detailed Pre-Applications took place with CCC which included:

- An initial meeting with CCC in November 2022 to discuss the Community Engagement and provide a high-level introduction to the Proposed Development.
- A Pre-Application meeting with CCC under Section 247 of the Act in April 2023.
- A Second Pre-Application meeting with CCC under Section 247 of the Act in December 2023.

CCC were also kept informed of any updates to the Wind Farm Site throughout the Pre-Application process.

Furthermore, it is noted that CCC have critical statutory functions within the SID process under S.37E of the Act which includes the requirement to prepare a Chief Executive Report. It is also noted that CCC were a prescribed body and were issued with a full copy of all the application documentation at the time of submission and were invited to make any observations as deemed necessary as part of their assessment of the application, which it subsequently did.

3.1.4.3 Project Splitting

Observations contend that the separate development of Knockshanvo Wind farm and Oatfield Wind farm constitutes project splitting.

For clarity, the Oatfield Wind farm is an entirely separate project, which is being progressed independently by a different developer, under separate landowner agreements. Other than its geographical proximity, it bears no relation to the Knockshanvo Wind Farm.

Furthermore, the proposed Oatfield Windfarm has been fully assessed as part of the Wind Farm Site application. As detailed in Section 2.1.2 of this report, a comprehensive and robust cumulative impact assessment has been carried out, which confirms that no significant adverse cumulative effects are anticipated.

Therefore, the Oatfield Wind farm is not functionally integral to the Wind Farm Site and its progression separately does not constitute project splitting.

3.1.5 Traffic and Road Safety Assessment

The response to this section has been prepared by Alan Lipscombe Traffic and Transport Consultants. Observations are highlighted and responded to individually.

Issue 1:

Observations reference omission of data in relation to the traffic counts included in Appendix 15-1 of the EIAR with specific reference to Site 03 for the Corbally Road/Athlunkard Street/Pa Healy's Road junction, which renders the 'Traffic Management Plan' deficient.

Comment:

It is acknowledged that the original Appendix 15-1 excluded the raw data for this junction which was used in the assessment. This excluded data has now been provided; no other changes have been made to Appendix 15-1. Appendix 15-1 has been updated to include this data and is included as **Appendix 1**.

Issue 2:

An observation states that the site entrance at R465 has bends on both sides which is highly dangerous.

Comment:

The proposed junction design is discussed in section 15.1.8 of the EIAR and illustrated in Figure 15-6 and Drawing No 200513 – 54 of the application drawings., with visibility splays shown in Figure 15-7. The junction design and visibility splays are in accordance with guidelines set by TII and by Clare County Council in the Development Plan 2023 – 8. The visibility splays available are 160m as appropriate for the 80 km/h design speed.

The proposed junction on the R465, and all other proposed junctions between the wind farm access roads and the existing local road network, were the subject of an independent Road Safety Audit, which is included as Appendix 15-5, and summarised in Section 15.1.9 of the EIAR. It is noted that there are no safety issues relating to any of the proposed junctions.

Issue 3:

Observations raise general safety and capacity concerns on the local road network during the construction of the Proposed Development.

Comment

In addition to all junctions being designed in accordance with TII guidelines and being the subject of a Road Safety Audit, appropriate traffic management measures will be implemented by the Contractor during the construction of the Proposed Development, to ensure a safe environment is maintained at all times. These measures are summarised in Section 15.1.11.6 of the EIAR and will be further developed in detail by the Contractor, in consultation with the relevant local authorities and An Garda Síochána.

3.1.6 Biodiversity

Several Observations raise biodiversity related issues which included the following topics:

- Impacts on Habitats (peatlands, woodland, flora).
- Impacts on bats (including noise, blasting, barotrauma and the requirement for derogation).
- Impacts on Marsh Fritillary.
- Impacts on Otter and Aquatic Fauna.
- Impacts on Other Protected Fauna (including hedgehog).
- The Natura Impact Statement (NIS).
- Impacts on Special Protection Areas (SPAs).
- Impacts on Gortacullin Bog NHA.
- Cumulative Impact Assessment.

Each of these topics are addressed separately below.

3.1.6.1 Impacts on Habitats (peatlands, woodland, flora)

3.1.6.1.1 *Peatlands*

Wet Heath Habitat Loss

An observation states that that the statement within the EIAR that there will be a loss of 0.9ha of wet heath – this value of loss is severely underestimated as there was failure to assess areas of wet heath on the grid connection route and also a failure to assess the areas of wet heath between gaps in the forestry. It is also considered that there was a failure to assess the cumulative impact of the Wind Farm Site and the Proposed Oatfield Wind farm in relation to wet heath habitat loss.

Comment:

The Wind Farm Site will result in the loss of 0.9ha of wet heath. There is no wet heath located within the vicinity of the Proposed Grid Connection.

There will be no loss of any areas of intact wet heath associated with the Proposed Development. Wet heath associated with gaps in forestry, where forestry has been less productive and scattered, has been mapped and assessed, particularly in the vicinity of Turbines 8 and 9. The loss of 0.9ha of wet heath is entirely associated with the area of wet heath interspersed between forestry, which as such is degraded and encroached by conifers.

The potential for cumulative impact on wet heath as a result of Knockshanvo Wind Farm in-combination with Oatfield Wind Farm was specifically assessed in EIAR Chapter 6, Section 6.5.2.1.1. There is no potential for significant cumulative effect on wet heath as a result of the Proposed Development when considered in-combination with the proposed Oatfield Wind Farm. The Biodiversity Management Plan for the Knockshanvo Wind Farm will result in a net increase of wet heath/peatland habitat within the project area.

Bog Habitat Assessment

An observation states that the EIAR fails to analyse the amount of blanket bog, cut-over bog and dry heath that will ultimately be lost due to this development.

Comment:

These habitats have been fully assessed as part of the EIAR, as clearly set out in Section 6.4.2.1 of the Biodiversity Chapter. Table 6-11 outlines the following calculated losses:

- Wet heath/upland blanket bog – 0.9ha
- Dry siliceous heath – Negligible/less than $10m^2$
- Cutover bog – there will be no loss of cutover bog associated with the Proposed Development.

The loss of these habitats is then fully assessed in Table 6-13 (Wet heath and upland blanket bog) and Table 6-14 (Dry siliceous heath) of the EIAR. With the prescribed mitigation and Biodiversity Management Plan in place, there is no potential for residual significant effect, and there will be a net gain in peatland habitat available.

Habitat Mapping

An Observation states that there is sphagnum moss growing throughout the site that has not been declared as wet heath in any of the reports and that Wet Heath has been severely under reported in the EIAR assessments.

Comment:

Wet heath has been accurately mapped and assessed within the EIAR. The EIAR correctly states that the NPWS Article 17 mapping dataset maps areas of **Dry Heath** within the Study Area Boundary (Section 6.3.1.2.1 of the EIAR). This dataset is shown in Figure 6-5 of the EIAR.

MKO then carried out detailed botanical surveys and habitat mapping of the Study Area. Some of the areas mapped under Article 17 as Dry Heath were identified as actually conforming to **Wet Heath.**

Section 6.3.2.1.4 of the EIAR states,

> *'Some areas within the EIAR Site Boundary which have been mapped under NPWS Article 17 Reporting as Annex I Dry Heath habitat, have been identified during surveys as actually corresponding to Wet Heath (HH3)/Upland Blanket Bog (PB2) mosaic and Cutover Bog (PB4).'*

An accurate habitat map of the Study Area, based on the detailed habitat surveys undertaken, is provided in Figure 3-2, Appendix 6-1 of the EIAR as submitted. This habitat map accurately depicts the areas of wet heath within the Study Area Boundary. Wet heath has been accurately mapped, reported and assessed within the submitted EIAR.

Wet-Heath at Turbines 8 and 9

Observations state that Turbine 8 is situated within conifer forestry (WD4) on degraded wet heath (HH3), and Turbine 9 is located within fragmented plots of conifer forestry (WD4) on wet heath (HH3). It is also suggested that the habitat corresponds to the Annex I habitat 'northern Atlantic wet heaths with Erica tetralix', which is already under threat and should be considered a SAC.

Comment:

There will be no loss of any areas of intact wet heath associated with the Wind farm Site. Wet heath associated with gaps in forestry, where forestry has been less productive and scattered, has been mapped and assessed, particularly in the vicinity of Turbines 8 and 9.

The loss of 0.9ha of wet heath is entirely associated with the area of wet heath interspersed between forestry and as such is degraded and encroached by conifer species.

The Biodiversity Management Plan for the Wind Farm Site will result in a net increase of wet heath/peatland habitat within the project area.

3.1.6.1.2 *Woodlands*

An observation on file states that:

> '*The Knockshanvo site has numerous examples of upland woodland including old oak, beech, horse chestnut, Mountain Ash – these form part of the Atlantic temperate rainforest. This temperate rain forest supports a large and diverse assemblage of lichens, ferns and rare bryophytes – all of which are present on the Knockshanvo site.*

At higher elevations the growing season is much shorter, with colder temperatures and exposure to the elements. Habitat regeneration of trees, shrubs, mosses and lichens at this open, exposed site at a higher elevation is much slower, therefore 'replacement planting' as a mitigation measure should take growing conditions into consideration.'

As described in the EIAR Chapter 6 and appendices, the Proposed Development site is dominated by commercial coniferous forestry, which supports limited ground flora. Planting of hedgerow, trees and woodland, prescribed in Section 6.4.2.1 of the EIAR and detailed in the Biodiversity Management Plan (Appendix 6-5), will comprise species common to the local area and conditions. In addition, a Monitoring Plan has been prescribed (Appendix 6-5, Section 4), which sets out a monitoring plan for the establishment of the proposed habitat creation. Monitoring of proposed new replanting areas will be monitored to ensure successful establishment. Monitoring will be carried out at the end of the growing season during years 1,2,3,5 and 10 after initial planting by a qualified ecologist. This will ensure that the measures are successful and will ensure that management will be adapted as needed.

It is also states within this observation that,

'*Development of the Knockshanvo site will require widening of the forestry roads for turbine delivery resulting in the removal of the majority of these remaining broadleaf trees. The permanent loss of approx. 0.45ha of oak-ash-hazel woodland located on the periphery of conifer forestry is considered to be a significant effect at the local level.*

One particular stretch of road on the delivery and grid connection route is home to a significant corridor of ancient beech trees that grew as a result of the hedge coppicing generations ago – these will all be removed. Even if replaced it will take generations before this habitat is restored...this will be completely destroyed for turbine delivery.'

Other third-party submissions outline that the Proposed Development will lead to the removal of ash, oak, and hazel woodlands, impacting local wildlife. The loss of 0.45ha of oak-ash-hazel woodland has been assessed in Section 6.4.2.1.4 of the EIAR (Table 6-15). In the absence of mitigation, this was assessed as being significant at the local scale. The Biodiversity Management Plan (BMP) provides for replanting of 0.9ha of the same woodland community type along the proposed access road to the site. This is fully described in Section 3.2 of the BMP (Appendix 6-5). With the proposed mitigation in place, there is no potential for residual significant effect on this habitat and there is potential for a net gain in this habitat type.

All vegetation removal required for the Turbine Delivery Route and Grid Connection Route has been assessed in the EIAR. It is not proposed to remove the above-mentioned corridor of beech trees for the Proposed Development.

Planting of hedgerow, trees and woodland, prescribed in Section 6.4.2.1 of the EIAR and detailed in the Biodiversity Management Plan (Appendix 6-5), will comprise species common to the local area and conditions. In addition, a Monitoring Plan has been prescribed (Appendix 6-5, Section 4), which sets out a monitoring plan for the establishment of the proposed habitat creation. This will ensure that the measures are successful and will ensure that management will be adapted as needed.

3.1.6.1.3 *Lichens, ferns and rare bryophytes*

An observation on file states that

'*A comprehensive analysis was not completed by MKO for rare and protected plants, lichens and mosses on Knochshanvo nor was a cumulative assessment completed. MKO relied on the NPWS database for their information. Reindeer Moss is a lichen that occurs in Ireland and are protected under*

Annex V of the EU Habitats Directive (92/43/EEC). Reindeer Moss is present in abundance in Knockshanvo.'

MKO undertook dedicated botanical surveys for the Proposed Development Study Area, as documented in Appendix 6-1 of the EIAR (Baseline Habitats Report). Reindeer moss (*Cladonia portentosa)* was recorded during the surveys, given it is a typical component of peatland habitats.

The submission also states,

'Austin's Bog Moss is present in abundance in Knockshanvo. This is a moss of undisturbed raised and blanket bogs and its remains form peat. Disturbance of soil will eradicate this moss and ultimately will prevent the creation of peat in Knockshanvo. There was failure to include mitigations in the EIAR for the protection of or prevention of loss of Austin's Bog Moss in Knockshanvo.'

Sphagnum austinii was not recorded within the footprint of the Proposed Development during dedicated surveys undertaken, although there is potential for it to occur in good condition peatland habitats in the wider area outside of the development footprint. The photo provided by the author, inset within the submission report, is not likely to contain *Sphagnum austinii,* particularly given the reported location of the image taken along a forestry road, considering that it is a moss of undisturbed raised and blanket bog (British Bryological Society[1]).

Areas of intact peatland habitats have been completely avoided by the development footprint. Furthermore, potential for impact on these habitats, including cumulative impacts, have been assessed in the EIAR, Mitigation for protection of adjacent peatland habitat is provided in the EIAR Section 6.4.2.1.

3.1.6.2 Impacts on Bats

3.1.6.2.1 *Noise Impacts on Lesser Horseshoe Bat*

An observation on file claim that the EIAR fails to acknowledge the potential impacts of noise and blasting on lesser horseshoe bat.

The potential for noise and vibration impacts on wildlife, including bats, was considered during the EIAR and Appropriate Assessment processes. Section 6.4.2.2 of the EIAR considers disturbance impacts to fauna, while the potential for blasting to occur and disturbance impacts on QI fauna was considered in the NIS (Sections 3.2.7.2 and 6.2.2). However, significant effects due to noise or blasting impacts are not predicted based on the following scientifically and ecologically justified reasons:

1. **Distance from SAC Roosts and Attenuation of Vibration**

The nearest Special Area of Conservation (SAC) roosts for lesser horseshoe bats are located over 1.3km away from wind farm infrastructure. Scientific literature and industry standards (e.g. BS7385-2:1993 and BS6472-2:2008) indicate that ground borne vibration and air overpressure from controlled blasting attenuate rapidly with distance. At distances beyond 1–2 km, vibration levels typically fall well below thresholds known to cause disturbance to sensitive receptors, including bat roosts. Existing habitats, including trees and forestry plantations, which exist in between proposed infrastructure and lesser horseshoe bat roosts, would further serve to screen the works and absorb any associated noise.

The Chartered Institute of Ecology and Environmental Management's (CIEEM) UK Bat Mitigation Guidelines (Version 1.1, 2023 and updated Version 1.2, 2025) provide a comprehensive framework for assessing impacts on

[1] *https://www.britishbryologicalsociety.org.uk/wp-content/uploads/2020/12/Sphagnum-austinii.pdf*

bats from development activities. These guidelines do not identify blasting as a primary impact pathway unless works are directly adjacent to sensitive roosts or occur during critical periods such as maternity or hibernation seasons. The NatureScot (2021) guidance, which underpins the assessment methodology, focuses on five key risks to bats from wind farms: collision, barotrauma, habitat loss, roost loss, and displacement/disturbance. Blasting is not identified as a significant risk unless directly adjacent to roosts.

Case Study 40, referenced in the CIEEM guidelines, specifically addresses the issue of construction-related disturbance near roosts. It concludes that short-duration, controlled blasting activities conducted outside sensitive periods and at sufficient distance from roosts are unlikely to result in significant disturbance. This is particularly relevant for lesser horseshoe bats, which are highly roost-loyal and sensitive to direct roost disturbance, but less affected by transient noise events when buffered by distance and habitat. It was noted during monitoring that LHB were recorded within 4m of drilling works and did not wake.

2. **Lack of Roosting Habitat Within the Zone of Influence**

Surveys conducted in accordance with best practice guidance (e.g. NatureScot 2021; Collins, 2023) confirmed that the Wind Farm Site does not support significant roosting habitat for LHB. No roosts were identified within the Wind Farm Site during the surveys, and the site design retains key linear features such as treelines and hedgerows to maintain landscape connectivity for commuting and foraging bats.

3. **Industry Best Practice and Timing Controls**

Blasting, if required, will be undertaken during daylight hours and outside of key bat activity periods (i.e. dusk and dawn), further reducing the potential for disturbance. In line with best practice, any blasting will be subject to strict controls on timing, intensity, and frequency, and will be managed to comply with relevant environmental and health and safety standards. Furthermore, the EIAR sets out the following control measures in relation to both rock breaking and blasting, should it be required (Section 12.5.4.1 of the EIAR):

Mitigation for rock breaking:

- Fit suitably designed muffler or sound reduction equipment to the rock breaking tool to reduce noise without impairing machine efficiency.
- Ensure all leaks in air lines are sealed.
- Use a dampened bit to eliminate ringing.
- Erect acoustic screen between compressor or generator and noise sensitive area. When possible, line of sight between top of machine and reception point needs to be obscured.
- Enclose breaker or rock drill in portable or fixed acoustic enclosure with suitable ventilation

The methods used to minimise noise from blasting, if required, will consist of the following:

- Restriction of hours within which blasting can be conducted (e.g. 09:00 – 18:00hrs).
- The firing of blasts at similar times to reduce the ‘startle’ effect.
- The implementation of an onsite documented complaints procedure.
- The use of independent monitoring by external bodies for verification of results.

- Trial blasts in less sensitive areas to assist in blast designs and identify potential zones of influence.

Based on the CIEEM UK Bat Mitigation Guidelines, relevant case studies, site-specific ecological data, best practice controls, timing controls, the distance to SAC roosts and existing natural buffers, it can be concluded there is no potential for likely significant effect to lesser horseshoe bat as a result of noise impacts from the Wind Farm Site.

3.1.6.2.2 *Derogation Licence*

An observation was made which refers to MKO bat derogation licence and compliance with European Communities (Birds and Natural Habitats) regulations 2011 (S.I. No 477 of 2011).

As stated in Appendix 6-2 of the EIAR, Section 2.3, this annual licence applied for by MKO and issued by NPWS is intended for professionals carrying out surveys with the potential to disturb roosting bats (i.e. roost inspections). The licence is acquired for bat survey work only and is in line with relevant guidance. It is not associated with works as part of the Wind Farm Site.

The site predominantly consists of plantation conifer forestry which is largely unsuitable for roosting and any identified potential roost features (PRFs) are being retained and avoided. Therefore, no requirement for a derogation licence in support of the planning application has been identified.

3.1.6.2.3 *Barotrauma Impacts*

An observation was made that barotrauma from turbines risks bat mortality.

As described in the dedicated Bat Report submitted as Appendix 6-2 to the EIAR, the bat survey methodology and assessment followed the most recent recognised industry best practice i.e. Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation (NatureScot 2021). Therefore the risk to bats was fully assessed in accordance with best practice guidance.

As detailed in Section 6.4.3.2.2 of EIAR Chapter 6, an adaptive mitigation and monitoring plan, including bat buffers, blade feathering, curtailment during peak periods of bat activity, pre-construction surveys, habitat enhancement areas and 3 years post-construction monitoring, has been devised for the Proposed Development including the Wind Farm Site in line with NatureScot guidance to safeguard bats. This adaptive operational monitoring plan to assess potential changes in bat activity post-construction can be adjusted as deemed necessary to ensure bats are safeguarded accordingly.

Provided the Wind Farm Site is constructed and operated in line with the proposed mitigation and monitoring plan, no residual significant effects on bats is anticipated as a result of the Wind Farm Site.

3.1.6.3 Impacts on Marsh Fritillary

3.1.6.3.1 *Suitable marsh fritillary habitat*

An observation states that The National Biodiversity Data Centre has a record of a sighting of a Marsh Fritillary Butterfly within R57 which is contrary to the MKO report that states there was no records of the butterfly in R56 & R57.

The EIAR correctly identifies that marsh fritillary records exist within the wider area (Section 6.3.1.3.2 and 6.3.1.3.3 of the EIAR).

The EIAR noted at conclusion of the desktop study, the purpose of which was to inform field surveys, that there is potential for suitable habitat for marsh fritillary (Section 6.3.1.4 of the EIAR). Consequently, during the field surveys, it was found that the Proposed Development footprint is outside of any areas of suitable habitat for the species.

The observation also described areas of devils bit scabious along forestry tracks and in adjacent peatlands that are present in the vicinity of the Proposed Development, these areas were recorded during the ecological surveys as described in Section 6.3.2.3.7 of the EIAR. Therefore, these areas will not be impacted by the Wind Farm Site.

3.1.6.3.2 *Drainage of marsh fritillary habitat*

An observation on file states that wind farm site drainage will damage marsh fritillary habitat, particularly on the site adjacent to Turbines T8 and T9.

The peatland to the southwest of Turbines 8 and 9 referenced above will not be impacted by the Proposed Development. Potential drainage of adjacent peatland habitats has been assessed in Section 6.4.2.1.2 of the EIAR. Given the distance between site infrastructure and peatland habitats as well as the presence of existing commercial forestry and drains along the perimeter of peatland habitats within the site, there is no potential for significant effect to peatland habitats as a result of drainage due to permanent proposed infrastructure.

There will be no significant loss of suitable marsh fritillary habitat, including corridors throughout the Study Area boundary, therefore no mitigation is necessary.

As discussed in Section 6.3.2.3.7 of the EIAR,

> *'Devil's bit scabious (Succisa pratensis) is present within grassy verges along some forestry tracks within the Study Area, however these areas are too small and fragmented to provide significant habitat for the species. Devil's bit scabious is present within the peatland area within the Study Area to the north, adjacent to Gortacullin Bog NHA. The habitats throughout the remainder of the Study Area, including areas of wet heath (HH3), do not contain a sufficient amount of Devil's bit scabious (Succisa pratensis) to support the species.'*

There will be no loss of significant supporting habitat for Marsh Fritillary within the footprint of the Wind Farm Site. There is no potential for significant effect to Marsh Fritillary.

3.1.6.4 Impacts on Otter and Aquatic Fauna

3.1.6.4.1 *Aquatic Faunal Species*

An observation raises concerns regarding the desktop study results and the results of the dedicated aquatic surveys reported within the EIAR. It goes on to highlight that water quality and aquatic habitat must be protected.

The potential for impact to aquatic habitats and species as a result of the Proposed Development has been fully assessed in Chapter 6 of the EIAR (Section 6.4.2.1.1 and Section 6.4.3.1.1) as well as Chapter 9 'Hydrology and Hydrogeology'. With the prescribed mitigation in place, there is no potential for residual significant effect on aquatic habitats and species.

The potential for adverse effect to European Sites via hydrological links has been fully assessed in the submitted NIS. In the context of aquatic Qualifying Interest (QI) habitats and species, with the prescribed mitigation in place, there is no potential for residual adverse effect on European Sites.

3.1.6.4.2 *Otter*

An observation also outlines that an adequate impact assessment on otter has not been carried out. However, the potential for impact on local otter populations around the Proposed Development site has been fully assessed in Section 6.4.2.2.1 of the EIAR.

No otter breeding holts were identified in the vicinity of the Proposed Development during dedicated surveys undertaken. Mitigations have been provided to prevent impact to otter as a result of water quality deterioration and as a result of disturbance.

The potential for adverse effect to the Qualifying Interest otter population of Lower River Shannon SAC has also been provided in the submitted NIS. With the prescribed mitigation in place, there is no potential for residual adverse effect on the QI otter population of the Lower River Shannon SAC.

3.1.6.5 Impacts on Other Protected Fauna (including hedgehog)

An observation states that the Wind Farm Site is close to the 'Hogsprickle' and that the site is part of the wider release area and habitat of hedgehogs. It states that there is risk to their environment and habitat during construction and operational phases of the Knockshanvo and Oatfield windfarms, which will be detrimental to their existence.

The conifer plantation habitats within the Wind Farm Site provide limited food and shelter opportunity for hedgehogs, which prefer more diverse hedgerow, grassland and woodland habitats. No evidence of hedgehog activity was found during site surveys. There will be no loss of significant suitable habitat for hedgehog as a result of the Wind Farm Site. The proposed measures as part of the Biodiversity Management Plan (Appendix 6-5) will create additional suitable habitat for hedgehog in the form of native hedgerow planting and enhancement.

Other observations state that the Proposed Development will result in significant disturbance and habitat loss for fox, badger, grouse, hares, red squirrel and rabbits. It is also stated that the Proposed Development would be in contravention of the CCDP, Objective 15.12, relating to the conservation of biodiversity and the protection of wildlife corridors.

The Proposed Development footprint is predominantly located within existing Coillte forestry plantation plots which have limited potential to support the native species listed above. While it is acknowledged that the habitat does have some potential to support species such as red squirrel, this has been fully assessed in the EIAR. Based on the dedicated faunal surveys that were undertaken throughout the EIAR study area, no significant populations of the above species have been recorded.

Given the small area of the footprint of the Wind Farm Site relative to the availability of conifer forestry habitat in the wider area, there is no potential for significant loss of faunal habitat. Nevertheless, a suite of precautionary mitigation measures, including for pre-commencement surveys for protected fauna, is set out in the EIAR. In addition, the Biodiversity Management and Enhancement Plan set out measures for creation of enhanced habitat for fauna as part of the Proposed Development.

The potential for disturbance and habitat loss impacts to the above listed species has been fully assessed in the EIAR Biodiversity Chapter as submitted. It has been concluded that there is no potential for residual significant effect on these species. As such, the Proposed Development is compliant with Objective 15.12 of the CCDP.

3.1.6.6 Natura Impact Statement

Proposed Mitigation Measures

An observation states that Section 6.2.2.2 of the NIS suggests that mitigation measures will only come into effect after water quality deterioration is detected.

Section 6.2.2.2 of the NIS sets out a suite of pre-emptive and proactive, rather than reactive, preventative mitigation measures to ensure that water quality is protected. These include mitigation by avoidance and mitigation by design. The measures cover off mitigation against the release of suspended solids, hydrocarbons, and cementitious materials. The mitigations also include dewatering works controls, prevention of contamination from wastewater disposal, directional drilling controls associated with the grid connection route, mitigations associated with Turbine Delivery Route works and transition compound, and clear felling of coniferous plantation mitigations. In addition, mitigation is provided for the installation of new watercourse crossings for internal access roads. These detailed, proactive mitigations are also set out and detailed in Chapter 9 of the EIAR.

Rock Blasting

It is also stated in an observation that the NIS doesn't adequately assess the effects of rock blasting.

The potential for noise and vibration impacts on wildlife, including bats, was considered during the EIAR and Appropriate Assessment processes. The potential for blasting to occur and disturbance impacts on QI fauna was considered in the NIS (Sections 3.2.7.2 and 6.2.2). However, as discussed in Section 3.1.7.1 of this response document, significant effects due to noise or blasting impacts are not predicted based on the scientifically and ecologically justified reasons outlined in this section. No potential for residual adverse effect on any European site as a result of rock blasting was identified.

Based on the CIEEM UK Bat Mitigation Guidelines, relevant case studies, site-specific ecological data, best practice controls, timing controls, the distance to SAC roosts and existing natural buffers, it can be concluded there is no potential for likely significant effect to lesser horseshoe bat as a result of noise impacts from the Proposed Development.

Scope of the NIS

An observation states that the NIS fails to adequately consider the impact of the Proposed Development on hen harriers, white-tailed eagle, and other species which it is claimed are relevant to the Lower Shannon SAC.

The remit of the assessment contained within the NIS is restricted to assessment of fauna that have been designated as Qualifying Interest (QI) species of the Lower River Shannon SAC, or as Special Conservation Interest (SCI) species of the River Shannon and River Fergus Estuaries SPA.

As such, there is no assessment of hen harrier or white-tailed eagle within the NIS. These bird species are not SCI species of any European Site in the vicinity of the Proposed Development. The NIS assesses the potential for adverse effect on the designated SCI bird species of the SPA and associated waterbirds. It also assesses the potential for adverse effect on lamprey species, salmon, bottlenose dolphin and otter, which are designated species of the SAC, and have potential to occur downstream of the Proposed Development.

The NIS has concluded that there is no potential for residual adverse effect on any fauna listed as QI or SCI species of any European designated site.

As such, a full and robust assessment is contained within the NIS as submitted.

3.1.6.7 Impacts on Special Protection Areas (SPAs)

An observation states that,

> *'The MKO report states that there will be no direct effects of the project on the SPA as the project footprint is located entirely outside the designated site – MKO have failed to fully understand the SPA in question as there are TWO direct hydrological links…between the development site and the Shannon Estuary (SPA).'*

There is a distinction between 'direct effects' and 'indirect effects'. Within the NIS submitted as part of the application, it is correctly assessed that there is no potential for direct effect on the River Shannon and River Fergus Estuaries SPA. Given that the Proposed Development is located completely outside of the SPA, there is no potential for direct effects to the Special Conservation Interest (SCI) habitat of the SPA. Based on the results of the bird surveys carried out at the Proposed Development site, it was also concluded that there is no potential for ex-situ direct effects on SCI bird species as a result of collision risk. Similarly, there is no potential for direct effects on Lough Derg SPA.

However, it was ascertained that there is a potential for indirect effect on River Shannon and River Fergus Estuaries SPA due to the hydrological connectivity between the Proposed Development site and the SPA. This could result in an indirect effect to the SPA as a result in deterioration of water quality. This has been fully assessed within the submitted NIS.

No potential for residual adverse effect on River Shannon and River Fergus Estuaries SPA was identified as a result of the Proposed Development once mitigation is applied. With regard to Lough Derg SPA, further discussion is provided below in relation to updated conservation objectives for the SPA.

Updated Site-specific Conservation Objectives – Lough Derg (Shannon) SPA

Since the original submission of the planning application and the associated NIS, the conservation objectives for Lough Derg (Shannon) SPA have been updated with Site-specific Conservation Objectives (SSCO, Version 1, August 2024[2]). These updated conservation objectives have been reviewed in light of the Proposed Development.

The designated Special Conservation Interests (SCIs) remain the same as assessed as part of the original planning application and as listed below, and have been fully assessed in the AA screening assessment submitted. Previously, the conservation objectives were 'first-order' conservation objectives and were as follows,

> '*To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA',* and,
>
> *'To maintain or restore the favourable conservation condition of the wetland habitat at Lough Derg (Shannon) SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.'*

According to the updated, detailed Site-specific Conservation Objectives, the prescribed objectives per SCI are as follows:

[2] *NPWS (2024) Conservation Objectives: Lough Derg (Shannon) SPA 004058. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage. Accessed at <https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004058.pdf >*

- A017 Cormorant *Phalacrocorax carbo* – The conservation objective for this species is to *'To restore the Favourable conservation condition of Cormorant in Lough Derg (Shannon) SPA.'*
- A061 Tufted Duck *Aythya fuligula* – The conservation objective for this species is *'To maintain the Favourable conservation condition of Tufted Duck at Lough Derg (Shannon) SPA.'*
- A067 Goldeneye *Bucephala clangula* – The conservation objective for this species is '*To maintain the Favourable conservation condition of Goldeneye at Lough Derg (Shannon) SPA.'*
- A193 Common Tern *Sterna hirundo* - The conservation objective for this species is '*To restore the Favourable conservation condition of Common Tern in Lough Derg (Shannon) SPA.'*
- A999 Wetlands – The conservation objective for this habitat is '*To maintain the Favourable conservation condition of Wetland habitats in Lough Derg (Shannon) SPA as a resource for the regularly-occurring migratory waterbirds that utilise these areas.'*

The SPA is located upgradient of the Proposed Development. There is no downstream hydrological connectivity from the Proposed Development to the SPA. Therefore, there is no source-pathway-receptor chain for Likely Significant Effect via hydrological pathways.

During ornithological surveys undertaken at the Proposed Development site over five and a half years (as detailed in the EIAR and NIS submitted with the planning application), no records of Tufted Duck, Golden eye or Common Tern were observed. Cormorant were observed on only four occasions during vantage point surveys between April 2018 and September 2023. All observations were of individuals commuting. Given that cormorant were only observed commuting through the site on four occasions, despite undertaking a comprehensive suite of surveys over five and a half years, it is concluded that the Proposed Development site is of no ecological importance to this species given how infrequently the species was observed. Therefore, there is no potential for Likely Significant Effect to any of the SCI species.

On review of the specific and detailed conservation objectives provided for each SCI, no potential for Likely Significant Effect on the Lough Derg (Shannon) SPA, in light of detailed conservation objectives and in-combination with other plans or projects, has been identified as a result of the Proposed Development.

Therefore, the conclusion of the Appropriate Assessment Screening assessment submitted for the Proposed Development still stands.

3.1.6.8 Impacts on Gortacullin Bog NHA

Observations state that Gortacullin Bog NHA is located approx. 1.1km from the Proposed Development, and that the minimum distance between the NHA and infrastructure should be 10 times the blade diameter.

The potential for impacts to the NHA has been fully assessed within the Biodiversity Chapter of the EIAR as submitted. The potential pathways for impact on this NHA include hydrological impacts as a result of excavations, and impacts as a result of forestry felling works. However, these pathways have been fully assessed, and mitigated where required, in Section 6.4.5.1.2 of the submitted EIAR. It has been found that there is no potential for residual significant effect on Gortacullin Bog NHA.

3.1.6.9 Cumulative Impact Assessment

An observation states that,

> '*There are incorrect and misleading references to the Oatfield development throughout the documents, referring to the development being of 10 turbines when the Oatfield proposal is for 11 turbines (see for example the Natura Impact Assessment (NIS) page 21 (8.1.1.3)'*

The above refers to a typographical error contained in one place within the NIS. The true figure of 11 no. turbines was assessed within the NIS as reflected in the listed wind farms within the NIS in Appendix 1 (Section 1.2.2) of the NIS.

It is further stated that,

> *'FuturEnergy cite the wrong ABP case reference for the Oatfield development – they give the preplanning consultation reference (315239) rather than the Oatfield planning application case reference (318782).'*

This refers to a minor typographical error within the report, while in Chapter 2 'Background', the correct reference is provided.

Furthermore, it is stated that**,**

> **'***Crucially, FuturEnergy's application fails properly to address the cumulative effect of all six windfarms in its EIAR... Potential direct and indirect adverse cumulative effects on local European Sites, in particular the Glenmora Wood SAC (001013), the Lower River Shannon SAC (002165), the Loch Derg SPA (004058) and the River Shannon and River Fergus Estuaries SPA (004077).'*

The assessment of the potential for cumulative effects on European Sites is contained within the Natura Impact Statement (NIS) provided as part of the planning application to provide the necessary information to the Competent Authority. In relation to the cumulative assessment of the specific European Sites mentioned in the submission, Glenomra Wood SAC was screened out at the AA screening stage given its large distance from any element of the Proposed Development, the terrestrial nature of the Qualifying Interest (QI) woodland habitat, and the lack of any source-pathway-receptor chain for effect. The cumulative assessment was also carried out at screening stage and it was found that there is no potential for likely significant effect on the SAC in-combination with any other plan or project. Likewise, no potential for likely significant effect, alone or in-combination with any other plan or project, was concluded for Lough Derg SPA, given a lack of downstream hydrological connectivity with the SPA and based on the bird surveys carried out for the Proposed Development, as detailed in the submitted AA Screening assessment. Of the European Sites mentioned in the submission, Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA were carried forward for full AA. As such, the potential for cumulative effects on these European Sites in-combination with other relevant plans and projects in the area was carried out within the NIS, in Section 8.1.3. It was concluded that there is no potential for the Proposed Development to contribute to any cumulative adverse effects on any European Site when considered in-combination with other plans and projects.

An observation also states that,

> *'There is also no consideration of the cumulative impact on Doon Lough which is an important NHA in East Clare as a hydraulic buffer protecting the River Shannon downstream.'*

The potential for significant effect on Doon Lough NHA is assessed in Section 6.4.5.2.1 of the EIAR, with mitigation provided to prevent hydrological impacts during all phases of the Proposed Development provided in Sections 6.4.2.1 and 6.4.3.1 of the EIAR as well as Chapter 9 'Hydrology and Hydrogeology'. A cumulative impact assessment is then provided in Section 6.5.2 of the Biodiversity Chapter. Chapter 9 notes, *the potential for this designated site to be impacted is limited due to the small scale of the works proposed in the catchment of the Broadford River - comprising solely of approximately 150m of new proposed access road.* Similarly, a hydrological cumulative impact assessment is provided in Section 9.5.7 of the EIAR which concludes that, *with the implementation of the proposed mitigation measures (both for the Proposed Development and for the other wind farms there will be no cumulative effects associated with the construction, operational or decommissioning phases of the Proposed Development and other wind farms within the cumulative study area.*

Therefore, the potential for cumulative effects on the NHA have been fully considered within the EIAR.

3.1.7 Ornithology

3.1.7.1 Adequacy of Survey Methods

Observations queried the adequacy of the methods for ornithological surveys.

As outlined in Section 7.2.4 of the EIAR, in the absence of specific national bird survey guidelines, the ornithological surveys were designed and undertaken in full accordance with the guidance document '*Recommended bird survey methods to inform impact assessment of onshore wind farms'* (NatureScot (formerly SNH), 2017). These survey methods have been specifically developed to ensure robust data is collected to inform a detailed impact assessment for this type of development. NatureScot (2017) survey guidance is widely accepted in the Irish onshore wind farm industry to provide best practice recommendations for undertaking bird surveys at a proposed Wind Farm Site.

As outlined in Section 7.2.6, a comprehensive suite of bird surveys was undertaken, in line with industry best practice (SNH, 2017), at the Wind Farm Site from April 2018 and September 2023. This included five winter and six breeding seasons of surveys, which greatly exceeded the (two-year) minimum requirements of NatureScot (SNH, 2017). The surveys undertaken provide the information necessary to allow a complete, comprehensive and robust assessment of the potential impacts of the Proposed Development on avian receptors.

3.1.7.2 Adequacy of Vantage Point Coverage

Concerns were raised as to the adequacy of the bird survey data if views of some areas of the site were obscured from view by mature forestry.

As was acknowledged in Section 7.2.6.2 of the EIAR, the selection of vantage point locations proved a challenge, given the topography and land use (commercial forestry) of the Wind Farm Site. Although there are gaps in the vantage point viewshed, as detailed in Figures 7.3 and 7.4 of the EIAR, the coverage of the site, in general, is considered adequate (the majority of the site is visible at 21m) to inform the collision risk analysis. This analysis is informed by the Band Model (2007), which presumes random movement of target species within the view shed, therefore, given sufficient coverage of the site[3], the Band Model can account for gaps in the view shed. A further consideration was the possibility that there was something unique about the flight activity in areas of the site that were least visible. To that end, an additional VP (VP6) was added when the turbine layout was finalised, to confirm whether or not the flight activity in this area (VP6's view shed) was significantly different from the rest of the Wind Farm Site. The results of surveys have confirmed that there is nothing unusual about the flight activity in this area (VP6's view shed).

In addition to the flight activity surveys (vantage point surveys), the survey scope included an array of distribution and abundance surveys that were specifically undertaken to ensure there was comprehensive coverage of the site to provide a robust data set to inform the impact assessment. In particular, the (breeding and winter) walkover surveys targeted onsite areas that were not visible to ground level from the vantage point locations. These surveys involved the surveyor walking the site and the accessible habitat within a 500m radius. Please see Section 7.2.4 of the EIAR for further information on these surveys.

In summary, the survey scope and specifically the vantage point survey approach is entirely adequate to assess collision risk at the proposed Wind Farm Site.

[3] *Sufficient coverage of the site ensures a sufficient sample of flight activity is collected to inform the collision risk analysis.*

3.1.7.3 Aviation Lighting

Concerns were raised about the impact of the aviation lighting associated with the Wind Farm Site, which was suggested could cause disturbance to birds, and in particular hen harrier, through disorientation and alteration of hunting patterns.

This premise is refuted. Hen harrier are a diurnal species that are highly unlikely to be impacted by nocturnal aviation lighting, as there would be little to no temporal overlap between hen harrier activity and nocturnal lighting. Furthermore, the lighting is located on the turbine hub, which is from 102.5m to 110.5m inclusive above the ground. Hen harrier hunt close to the ground so would not encounter the aviation lighting during the normal course of events.

3.1.7.4 Displacement

Concerns were raised that there would be significant habitat loss for birds as a result of the proposed turbines.

As outlined in Section 7.6.2 of the EIAR, a comprehensive species-specific impact assessment was undertaken that included consideration of displacement impacts (including from both visual and auditory stimuli). The key factors that were considered included the rate of occurrence of the receptor, suitability and abundance of habitat on site relative to the wider surroundings, the pathway for impacts, conservation status and population importance. As outlined in Section 7.6.2, no significant population-level effects were predicted. This includes the potential for habitat loss for species such as kestrel (concerns were specifically raised for this species via submission).

Notwithstanding this, a comprehensive suite of commencement/pre-construction and operational phase monitoring is proposed in Section 7.9 of the EIAR. The proposed monitoring programme was proposed specifically to monitor the success of hen harrier mitigation and as a best practice measure (SNH, 2009). The monitoring is comprehensive and considered entirely adequate in this regard. The monitoring results will be reported to the Planning Authority following each monitoring year and will include information on the rate of occurrence of receptors to inform consideration of displacement. This will then inform recommendations that may include additional mitigation or adaptation if required.

3.1.7.5 Snipe and Woodcock

Observations suggest that both snipe and woodcock would have been under-recorded during surveys due to their largely crepuscular nature.

The situation differs between the species, snipe are active during the day and night, whereas woodcock activity is more restricted to the low light periods. In the case of snipe, there were numerous daytime observations of the species. As outlined in Section 7.4.13 of the EIAR, snipe were observed on 30 occasions during vantage point surveys between April 2018 and September 2023.

As outlined in Section 7.2.4.2.4 of the EIAR, a species-specific survey was undertaken for woodcock. Following best practice, and to target the low light periods when the species is active, the surveys commenced one hour before sunset and continued for one hour after sunset or until it was too dark to see, as per Gilbert et al. (1998). As outlined in Section 7.4.14 of the EIAR, these surveys identified a resident breeding population.

For both species, the impact assessment included an assumption of ongoing activity at night to account for the potential for the species to have been under-recorded during the surveys. Notwithstanding this, no significant effects were identified for either species.

3.1.7.6 The Area is of National Importance to Hen Harrier

Concerns were raised as to the potential conflict between wind energy developments and hen harrier; the local area is stated in submissions to be of national importance to hen harrier.

As is acknowledged in Section 7.6.2.1 of the EIAR, in the absence of offsetting measures, there is the potential for a significant (indirect) habitat loss effect to result from the Proposed Development for hen harrier. Accordingly, a comprehensive offsetting strategy (Compensation and Enhancement Plan) is proposed. Please see below for details.

The EU Biodiversity Strategy's objective is to put EU's biodiversity on the path to recovery by 2030, and by 2050, all of the EU's ecosystems will be restored, resilient and adequately protected. It is noted that, among other things, climate change is a key underlying driver of biodiversity loss. While the Proposed Development has the potential to negatively impact hen harrier, renewable energy plays a key role in counteracting climate change. It is this dichotomy that necessitates the consideration of reasonable alternatives that limit biodiversity loss while facilitating the construction of renewable energy developments such as the Proposed Development. To that end, the offsetting plan that accompanies this application aims to ensure that the construction of the Proposed Development will not significantly reduce the availability of suitable hen harrier habitats locally. This opportunity for the wind farm industry to fund the restoration of hen harrier habitat was highlighted in the most recent National Survey of Breeding Hen Harrier (2022) report. Section 4.6.7 states:

> *"There are opportunities for the wind energy industry to increase levels of land management certainty, and regulation/management of the activities within and surrounding windfarms (e.g. recreational users, dog walkers etc) and identify opportunities for the retention and restoration of habitats suitable for breeding (and wintering) hen harrier within and surrounding renewable energy developments."*

The Hen Harrier Threat Response Plan (HHTRP) (2024-2028) identifies a need for innovation and collaboration to achieve the goals of the plan. Section 7 of the HHTRP sets out the actions that need to be taken to realise the objectives of the plan between 2024 and 2028. Collaboration with non-governmental stakeholders is identified as a key to the delivery of the plan.

In summary, following the successful implementation of compensation and enhancement measures, no significant residual impacts are predicted. This sustainable development of the proposed wind farm site ensures the continuing availability of suitable habitat for hen harrier locally.

3.1.7.7 Concerns over Success of the Enhancement and Compensation Plan

Concerns were raised that the enhancement and compensation lands wouldn't be used by hen harrier. Further concerns queried the validity of the landowner consents for the compensation and enhancement lands.

The following is provided by way of response. The compensation and enhancement lands are likely to be used by hen harrier based on the following rationale.

- The evidence of surveys is that hen harrier are present throughout the wider surroundings of the Proposed Development, including the lands proposed for enhancement and compensation measures. Please see Figure 7.4.2, 7.4.3 and 7.4.4 of EIAR Appendix 7-4 for location details.
- There are suitable habitats that run in a contiguous block between the site of impact (the proposed Wind Farm) and the compensation and enhancement lands, i.e. the forestry where the turbines are proposed abuts the open peatland habitat surroundings the EIAR Site

Boundary. Please see Figure 3-1 of EIAR Appendix 6-5 for location details. This same area likely hosts a single population with an exchange of individuals.

- A plan is in place to create optimal hen harrier foraging habitat within the compensation and enhancement lands. Please see Appendix 6-5 of the EIAR for a details description of measures. As hen harrier are present locally, it reasonably follows that the creation of suitable habitat for hen harrier is likely to attract hen harrier.
- The permanent deforestation will create habitat that will increase the amount of contiguous open habitat and link two areas of optimal (heath/bog) foraging habitat that has already been shown to be utilised by foraging hen harrier, as outlined in Appendix 7-4, Figure 7.4.2 of the EIAR.

The Applicant entered into Option to Lease agreements with all relevant landowners, to enable the full implementation of the hen harrier management plan. As outlined in Appendix 6-5 of the EIAR, this option to lease places a legal obligation on the landowner to comply with the requirements of the developer upon exercising the lease option. In other words, there is a legal document in place that allows the developer to implement land management measures to benefit biodiversity with particular emphasis on hen harrier foraging habitat.

In addition to holding Option to Lease agreements with all relevant landowners, the Applicant invites the Commission to condition the implementation of the compensation and enhancement plan as part of any grant of permission. This will ensure the implementation of the Plan and the ongoing land management measures therein are implemented.

3.1.7.8 Ornithology Conclusion

Following the clarification and explanation provided above, it is clearly demonstrated that the issues raised have been comprehensively addressed. The information before the Commission is robust and no deficiencies in information remain. Furthermore, it has been demonstrated that the Wind Farm Site will not significantly affect bird species of conservation concern individually or in combination with other developments.

3.1.8 Air Pollution

An observation highlights concern over the potential impacts of increased dust and air pollution arising from the construction phase of the Proposed Development.

Chapter 10 of the EIAR focuses on air quality and specifically assesses the likely significant effects, both direct and indirect, on air quality arising from all components of the Proposed Development, including its construction, operation, and decommissioning phases. The assessment considers not only the Wind Farm Site but also the Grid Connection and turbine delivery route.

The air quality assessment has been undertaken with reference to the Environmental Protection Agency's (EPA) 'Guidelines on the information to be contained in environmental impact assessment reports' (EPA, 2022). The Institute of Air Quality Management in the UK (IAQM) guidance document 'Guidance on the Assessment of Dust from Demolition and Construction' (2024) was considered in the dust impact assessment.

The likely significant effects on air quality of the Proposed Development both individually and in combination with other plans and projects in the vicinity of the Wind Farm Site and Grid Connection were considered as part of this assessment. The other plans and projects considered as part of this cumulative impact assessment are presented in Appendix 2-2 of the EIAR.

Individual Effects

During the construction phase of the Proposed Development, there will be exhaust emissions from construction plant and machinery and potential dust emissions associated with all construction activities. This will result in a Short-term Slight Negative effect on air quality due to vehicular and dust emissions.

Emissions of carbon dioxide (CO2), oxides of nitrogen (NOx), sulphur dioxide (SO2) or dust emissions during the operational phases of the Proposed Development will be minimal, relating to the use of operation and maintenance vehicles onsite, and therefore there will be a Long-term, Imperceptible, Negative effect on air quality.

Cumulative Effects

The Proposed Development, in combination with the other plans and projects considered as part of this cumulative impact assessment will result in the potential for cumulative impacts during the construction phase, particularly if works are undertaken concurrently. In this instance, this would result in a Short-term Slight Negative effect on air quality due to combined dust and vehicular emissions.

During the operational phase of the Proposed Development, emissions in combination with other plans or projects is expected to be minimal, resulting in a Long-term, Imperceptible, Negative effect on air quality.

In conclusion, a detailed Air Quality Assessment has been prepared for the Proposed Development. The assessment considers background air quality levels, potential emissions from construction activities, and the impact on nearby receptors and identifies the potential impacts on air quality during the construction, operation, and decommissioning phases, both individually and in combination with other plans and projects.

Based on the assessment, as detailed above, no significant effects are expected to occur. Please refer to Chapter 10 of the EIAR for further details.

3.1.9 Public Consultation and Engagement

Concerns have been raised about the lack of community consultation with local residents in relation to the Proposed Development.

A Community Consultation Report detailed the full and comprehensive community consultation effort that was undertaken for the overall Proposed Development and is included at Appendix 2-4 of the EIAR. As outlined in that document, the key elements of the Applicant's community engagement model is as follows:

- Detailed and systematic engagement with all 'near neighbours' to the project (within 2km) from a very early stage of project design.
- Wider community outreach through online platforms, local print media advertisements, distribution of an introductory newsletter and a detailed brochure, issued within a 4km radius and via public community clinics.
- A commitment to open, transparent dialogue and communications.
- Creating opportunities for discussion on key issues via Community Liaison Officer door-to-door visits.
- Ensuring that the local community has access to all relevant information, as soon as it is available, in a user-friendly format.

In relation to this specific project, a focus was put on a consistent and open engagement approach with a uniquely personal touch to ensure good coverage of the area. FuturEnergy Ireland chose to appoint two experienced Community Liaison Officer's (CLOs) to this project. Christy O'Dea and Kevin Donnellan were appointed prior

to the official project launch in September 2022. Both have knowledge of the area and are experienced in community engagement from their previous employment in Coillte CGA. They were/are available to respond to phone calls and emails within 24 hours.

The CLOs were on hand to discuss any queries raised by residents and relay those concerns to the project team. Every query submitted, whether by phone, text or email, was answered. Where a response required technical input, the CLOs acknowledged receipt and ensured it was addressed by the project manager or the relevant expert. On many occasions this led to follow-up meetings between the project team and the near neighbours as the project evolved through the design process.

The CLOs were also readily available to take calls and meet with near neighbours living outside the 2km priority zone, including with community groups and local political representatives. This was communicated at every opportunity, especially during the delivery of Newsletter 1, which was circulated to properties within a 4km radius of the site at the project launch and remained an open and ongoing invitation on all published project material and on the website.

The community consultation effort comprised of, but was not limited to the following:

- **September 2022 –** Community Liaison Officers Appointed.
- **November 2022 –** First newsletter delivered within 4km providing an overview of the Wind Farm Site and Grid Connection and project website launched.
- **February-March 2023 –** Engagement with residents regarding noise monitoring. Monitors installed at 6 locations.
- **April 2023 –** Second newsletter delivered within 2km providing an update on progress of the proposal as well as the latest draft layout.
- **June 2023** -Advertorial on the importance of Wind Energy published in the Clare Champion.
- **July 2023 –** Third newsletter delivered within 2km providing further details on the project and for any issues or concerns to be raised with the CLO's.
- **October 2023 –** A live project webinar was held presenting an overview of the project and highlighting the need for renewable energy. The webinar also provided an opportunity for participants to ask questions about the project.
- **November 2023** - A live virtual tour as well as a detailed brochure was issued and delivered to homes within 4km of the proposed turbines. A community clinic was also held in November to give stakeholders the opportunity to meet the Knockshanvo team and discuss any aspect of the Proposed Development.
- **March 2024 –** Members of the FuturEnergy Ireland community engagement team presented a one-hour talk entitled "Climate Change, Energy & Your Future" followed by a Q&A session to Transition Year students from St. Joseph's secondary school, Tulla, on 14th and 21st March 2024. More than 80 students attended.

Throughout the lengthy consultation period the CLO's have continued to liaise with any interested parties and answer any questions as promptly as possible.

In conclusion, active engagement and consultation with the local community has taken place from an early stage during the pre-application phase of the Proposed Development. The consultation process has been an extremely valuable exercise and has provided a detailed, and enhanced understanding of the key issues and concerns of the local community, which have ultimately shaped the final project proposal. The CLO's remain active and are available to the community for discussion on any matter relating to the project.

Please refer to the Community Consultation report at Appendix 2-4 of the EIAR for further details.

3.1.10 Hydrology

A response to all Hydrology related issues has been provided by HES in a separate response which is included at **Appendix 2** of this Response to Observations. The following recurring themes in relation to hydrology were raised :

- Potential effects on downstream surface water abstractions including Castle Lake Public Water Supply (PWS) and the Shannon (Lower)_060 drinking water protected area (DWPA);
- Potential effects on the Broadford Public Water Supply (PWS) Boreholes;
- Potential effects on local private groundwater wells;
- Potential effects on designated sites including Gortacullin Bog Natural Heritage Area (NHA) and Doon Lough NHA;
- An error in Water Framework Directive (WFD) Compliance Assessment;
- Inadequate Cumulative Assessment with Oatfield Wind Farm;
- Potential effects on water quality due to proposed felling operations; and,
- Potential Increase in flood risk.

In summary and in response to all observations raised:

- HES completed a robust, detailed and comprehensive impact assessment on the land, soils and geological environment which concluded that there will be no significant effects on the land, soils and geological environment as a result of the Wind Farm Site;
- HES completed a robust, detailed and comprehensive hydrological and hydrogeological impact assessment, WFD Compliance Assessment, a detailed Stage 2 Flood Risk Assessment and cumulative hydrological impact assessment for the Wind Farm Site which concluded that there will be no significant effects on the hydrological/hydrogeological environment as a result of the Wind Farm Site;
- Both assessments were underpinned by desk based data and site specific data as outlined in the EIAR;
- HES has responded to all concerns raised in third party submissions.

The response by HES reiterates the conclusions of the robust and comprehensive impact assessments presented in EIAR Chapter 8 (Land, Soils and Geology), EIAR Chapter 9 (Hydrology and Hydrogeology), the associated Flood Risk Assessment (Appendix 9-1) and WFD Compliance Assessment Report (Appendix 9-3). The impact assessments presented in the EIAR rely upon the tried and tested, best practice mitigation measures which ensure the protection of the receiving environment. Similar mitigation measures have been successfully applied during the construction of countless wind farm developments across the country and were also presented in the EIARs for several recently permitted wind farm developments. Therefore, the mitigation measures prescribed in the EIAR for the Proposed Development are suitable and will ensure that there are no significant effects on the receiving environment.

Please refer to **Appendix 2** for further details.

3.1.11 Peat Stability

Observations have raised concerns regarding peat stability during the construction period.

A Geotechnical and Peat Stability Assessment was undertaken for the Proposed Development (Appendix 8-1 of the EIAR). The findings of the Peat Stability Assessment showed that the proposed Wind Farm Site has an acceptable margin of safety, is suitable for the proposed wind farm development and is considered to be at low risk of peat failure. A number of control measures are prescribed in the peat stability assessment to manage all risks associated with peat instability. All of the detailed control measures will be implemented in full.

The handling of hydrocarbons/chemicals, as set out in Chapter 8 Lands, Soils and Geology of the EIAR will be carried out using best practice methods. Measures to prevent soil and subsoil erosion during excavation, reinstatement and long-term storage will be undertaken to prevent erosion and potential water quality impacts.

The Turbine Delivery Route extends from Foynes Port to the Wind Farm Site. Works are proposed at a total of 4 no. locations along the route. 3 no. locations involve minor roadworks whilst a temporary construction compound will be constructed along the N69 in the townland of Court (See drawings 200513 – 20, 200513 – 21, 200513 – 22, 200513 – 24 for further details).

Minor excavation of soils and subsoils will be required at these work locations. Storage and handling of hydrocarbons/chemicals will be carried out using best practice methods. Measures to prevent soil and subsoil erosion during excavation, reinstatement will be undertaken to prevent water quality impacts.

No significant effects on the land, soil and geology on the site of the Turbine Delivery Route will occur during construction, operation, or during decommissioning phases.

An assessment of the construction phase, operational phase and decommissioning phase has been completed, along with a cumulative assessment for each phase. Based on the above, and with implementation of the prescribed mitigation measures, no significant effects on peat stability are anticipated during the construction period as a result of the Proposed Development.

3.1.12 Noise and Vibration

A response to all noise related issues has been provided by AWN in a separate response which is included at **Appendix 3** of this Response to Observations. Several Observations raised concerns in relation to noise, specifically the following concerns:

- Background Noise Measurements and Analysis,
- Impacts on Sunyata Buddist Retreat Centre,
- List of Noise Sensitive Locations (NSLs),
- Low-frequency Noise and Infrasound,
- Effect of Land Contours on Noise Propagation,
- Noise levels downwind of wind turbines.

The response by AWN reiterates the conclusions of the robust and comprehensive impact assessments presented in Chater 12 Noise and Vibration of the EIAR. The submitted noise impact assessment in the EIAR is robust and has been carried out in line with current standards and best practice guidelines. The submitted EIAR Noise and Vibration assessment demonstrates that the Proposed Development can be constructed and can operate within the noise criteria derived from the relevant guidance.

The attached document by AWN has reiterated the relevant sections of the EIAR to comprehensively address the concerns and comments relating to noise and vibration within the submitted observations.

Please refer to **Appendix 3** for further details.

3.1.13 Landscape and Visual Impact

This section responds to Landscape and Visual Impact Assessment (LVIA -related submissions and includes an overview of the various attributes and characteristics of the receiving landscape that make it an eminently suitable site for wind energy development.

The Wind Farm Site is scaled and sited appropriately in a sparsely populated, working rural landscape suitable for effectively accommodating wind energy development, located in land zoned as "Strategic Area" and "Acceptable in Principle" for wind energy development in the CCDP and the Clare Wind Energy Strategy (CWES) which is Volume 6 of the CCDP. The Proposed Wind Farm does not significantly impact any landscape of county level importance or sensitivity such as Co. Clare Heritage landscape, nor does it significantly impact the key scenic sensitivities of any designated scenic routes. In this regard, it is in alignment with local planning policy by Clare County Council as well as designations in the CCDP pertaining to landscape and visual amenities, whilst balancing the requirement and binding targets to facilitate renewable wind energy development in viable areas of the country.

The LVIA topics raised third-party observers are addressed as follows:

- LVIA methodological approach,
- Visual effects on residential receptors,
- Sensitivity and alteration of the landscape,
- Cumulative impact of wind farms, including Oatfield Wind Farm, in the southwest region of Clare Co.

3.1.13.1 LVIA Methodological Approach

The comprehensive assessment of predicted landscape and visual effects of the Wind Farm Site is presented in Chapter 14 of the EIAR, comprising:

- EIAR Chapter 14 Landscape & Visual,
- *EIAR Volume 2: Photomontage Booklet*, presenting visualisations of the proposed turbines and other existing, permitted and proposed wind energy developments within 25km of the proposed turbines from 16 no. viewpoints,
- *Appendix 14-1: LVIA Methodology*,
- *Appendix 14-2: Landscape Character Area (LCA) Assessment Tables*, assessing landscape, visual and cumulative effects of designated LCAs,
- *Appendix 14-3: Photomontage Visual Impact Assessment Tables*, assessing landscape, visual and cumulative effects of the 16 no. selected photomontage viewpoints presented in the *Photomontage Booklet*,
- *Appendix 14-4: A0 LVIA Baseline Map*, showing all baseline landscape features, viewpoints, and visual receptors,
- *Appendix 14-5: Photowire Booklet Appendix*, presenting supplemental "early draft-stage" wireline visualisations known as "photowires" from an additional 26 no. selected viewpoint locations representing views of the proposed turbines.

The LVIA was conducted in 2022-2024 and was written by Jack Smith, MSc., PIEMA, a Project Environmental Scientist and LVIA Specialist at MKO and reviewed by Jack Workman MSc, TMLI who is a member of the British Landscape Institute and the Landscape & Visual Project Director at MKO. The LVIA was informed by Zone of Theoretical Visibility (ZTV) mapping, field surveys, a route screening analysis and verified

photomontages. The methods and processes followed during the conducting of the LVIA and production of the resultant chapter, appendices and visualisations included in the EIAR are in accordance with the frameworks, specifications and standards set out by benchmark best practice guidance for the LVIA of wind energy developments in Ireland, including:

- *Guidelines for Landscape and Visual Impact Assessment Third Edition* (GLVIA3) published by Landscape Institute & Institute of Environmental Management and Assessment (2013),
- *Wind Energy Development Guidelines for Planning Authorities* (WEDGs) published by Department of the Environment, Heritage, and Local Government (2006),
- *Draft Revised WEDGs* published by Department of Housing, Local Government and Heritage (2019).

The LVIA was conducted with regard to the context of landscape and visual policies in the relevant local authority policy documents: CCDP and its associated appendices including Section 14.2 Landscape Character Assessment of County Clare 2004 and Volume 6: CWES, particularly one annex and two tables in the CWES: Annex A: Best Practice and General Considerations for Wind Energy Developments in County Clare (CWES, p.47), Table 4a: Strategic Guidance on Landscape Capacity for Wind Energy Designations (CWES, p.36) and Table C1.1: LCAs in Strategic Areas (CWES, p.52).

Methodology for Photomontage and Photowire Production

16 no. verified photomontages produced for the EIAR are included in the *Volume 2: Photomontage Booklet*. Additional photowire imagery produced for the EIAR is included in the *LVIA Appendix 14-5: Photowire Booklet*. A comprehensive methodology for the production of photomontages and photowires included in the EIAR is set out in Section 1.5 of *Appendix 14-1: LVIA Methodology* of the EIAR. The methods used for viewpoint selection, field surveying, data collection, data processing, graphics production and final presentation of photomontages within the booklet follow a rigorous approach utilising best practice guidance for LVIA, photomontage production and benchmark guidance for the production of wind energy photomontages, as follows:

- *Visual Representation of Development Proposals* (Landscape Institute Technical Guidance Note 06/19, 2019) (LI TGN 06/19),
- *Visual Representation of Wind Farms, Version 2.2* (SNH, 2017) (SNH Guidance v.2.2).

In line with best practice guidance for the production of verified photomontages for wind energy development (SNH Guidance v.2.2, 2017 and LI TGN 06/19, 2019), the photomontages are printed on A1 banner sheets of paper which show the proposed turbines enlarged to fit within a 53.5-degree horizontal field of view. It is acknowledged that photomontages can be subject to a range of limitations which are set out in Section 1.5.2 of the *LVIA Appendix 14-1*. Every attempt has been made to adhere to benchmark best practice standards and specifications for photomontage production and presentation of verified photomontages for the EIAR.

3.1.13.2 Visual Effects on Residential Receptors

Submissions were made in relation to potential impacts on local residential receptors. The LVIA identified local residential receptors as being some of the receptors with the greatest potential to be impacted by the Proposed Development. The analysis and assessment in the LVIA Section 14.7.3.3.4 Residential Visual Amenity considered the spread, layout and orientation of houses throughout the surrounding landscape and the nature of views in the direction of the proposed turbines from residences. As per best practice guidance, it is not in the remit of an

LVIA to conduct an impact assessment for every single residence, as this is not feasible and would be disproportionate, in mind of all other visual receptors throughout the study area requiring assessment (see Visual Baseline in LVIA Section 14.5). The assessment of overall visual effects on local residential receptors accounted for many factors, not just the "visibility" of the proposed turbines, for example:

Mitigation by design in response to effects on residential receptors:

- The design of the Proposed Development exceeds the 4-times-tip-height (in this case 4 × 185m = 740m) setback from residential receptors as set out in the DWEGs.

Site selection and landscape characteristics:

- A rural landscape of significantly low population density compared to national and county averages,
- A receiving landscape of undulating landforms and prevalence of mature boundary vegetation limiting clear and open views of the proposed turbines from many residential receptors.

The absence and avoidance of key factors of the wind farm design relating to visual amenity:

- A site selection and turbine layout that causes no "surrounding" effects on residences,
- Limited instances of very wide horizontal extent of turbines visible within open views from residences.

It is reiterated that the design of the Proposed Development aligns with industry benchmark best practice guidance and standards. Siting of the proposed turbines adheres to the minimum 500m setback distance from residential receptors as set out in the WEGs and also exceeds the recommended 4-times-tip-height setback distance (4 × 185m = 740m) to third party properties explicitly set out for residential visual amenity in the DWEGs.

Alignment to Visual Siting and Design Guidance in the WEDGs

Furthermore, the proposed turbine layout has been designed to create a coherent arrangement of turbines, viewed as contiguous and connected to each other visually and with consistent spacing in line with the siting and design guidance for wind farms within Mountain Moorland landscape types in the WEGs and DWEGs (see LVIA Section 14.4.3). The LVIA reports that the landscape of the Wind Farm Site most closely matches the Mountain Moorland category set out in the WEGs and that the Proposed Development is in line with all six aspects of good wind farm siting and design with respect to the proposed turbines (location, spatial extent, spacing, layout, height and cumulative effect) within this landscape type. The WEGs guidance is quoted in the LVIA (p.47-50) and reported in the WEGs and Draft Revised DWEGs (p.100-104).

Factors contributing to the adherence of the Proposed Development with the quoted wind energy guidance (reported in the LVIA p.47-50) include that the proposed turbines are sited on or near elevated peaks and are clearly separated visually from the complexity of the lower ground, which results in sufficient distance from the greatest number of local receptors. In addition, the proposed turbines are grouped in clusters of small spatial extent, creating distinct visual separation between clusters across a relatively large area, and are evenly spaced within the visual unit of commercial forestry landcover.

The proposed turbines are designed in a grid layout along hilltops which responds appropriately to the forestry landcover and are sited across open and extensive upper ground and in terms of height are appropriately scaled for the mountainous landscape. Finally, in a potential future baseline scenario, the turbines of the Proposed Oatfield Wind Farm would be viewed within the same area of undulating upland landscape as the turbines of

the Wind Farm Site and this would be acceptable in accordance with the WEGs guidance, considering the varied nature of the landform in this upland area.

Route Screening Analysis

The LVIA conducted a Route Screening Analysis (RSA) on all surrounding roads and local road networks within 3.5km of the proposed turbines as a means of evaluating impacts on visual amenity and residential receptors in close proximity to the Wind Farm Site. The full methodology is reported in the *LVIA Appendix 14-1* Sections 1.4.3 and 1.4.4. The results of the RSA in terms of the degree of roadside screening recorded on the road networks are reported in the LVIA Section 14.3.3.1 (p.17) and mapped in Figure 14-3 of the LVIA. The RSA results demonstrate that greater than 72% of surrounding roads have some form of visual screening, either "Full" or "Partial/Intermittent", meaning that views in the direction of the proposed turbines are entirely or partially screened from view by vegetation, forestry, built structure or undulations in topography. This includes views along two designated Scenic Routes as set out in the CCDP 2023-2029, SR-25 and SR-26 which together comprise the R466 Regional Road. This also includes views along the R465 Regional Road passing in a N-S orientation through Broadford and views along the R471 Regional Road running in an E-W orientation and which passes approximately 2km south of the turbine clusters. The RSA results are representative of the degree of roadside screening which would be experience for most views from local residential receptors located along these roads. The LVIA (p.21) reports that:

> *"For SR-25, the RSA determined that there is generally a high amount of roadside screening in the direction of the proposed turbines upon this road within 3.5km of the proposed turbines. With regard to SR-26 there is no theoretical visibility shown by the ZTV in the areas where "Little/No Screening" was recorded, particularly in the townland of Cloonyconry Beg."*

And:

> *"Most road networks and settlements in the landscape in close proximity to the Wind Farm Site are generally located at lower elevations in the valley floors, and the land use in these areas is generally agricultural grazing pasture and mature vegetation along roads, thus field boundaries provide substantial visual screening within the landscape. Site visits determined that this is also the case for the wider landscape of the LVIA Study Area, where above-ground screening from localised topography, mature vegetation and the built environment substantially reduce the visual exposure of the proposed turbines compared with what is indicated by the ZTV."*

The RSA results are further discussed in the LVIA Section 14.7.3.3.4 Residential Visual Amenity (p.123), which maps all dwellings within 3.5km of the proposed turbines along with the RSA results and viewpoint locations in Figure 14-26 of the LVIA.

The results of the residential visual amenity analysis are herein discussed in the next subsection below.

Views Representing Majority of Local Residential Receptors

The LVIA Section 14.7.3.3.4 (p.123) specifically addresses the visual impact of the Proposed Development on residential visual amenity within 3km of the proposed turbines, including the townland receptors of Kilmore, Crag, Snaty (Wilson) Gortnaglogh, Cappanaslish, GortaCullian, Ballykelly, Knockshanvo, Snaty (Massy) Muingboy, Gyleglass, Cloontra West, Drumsillagh or Sallybank, Mountrice, Cloghoolia, Hurdleston, Snaty (Cooper), Formoyle Beg, Cloontra, Clloontra East, Oatfield, Crean, Formoyle More, and Kyle. The impact assessment in the LVIA Section 14.7.3.3.4 applies to local residential receptors as well as community destinations of local importance in close proximity, such as the Sunyata Buddhist Centre (located approximately 90m from

the north-western boundary of the Wind Farm Site and 891m from the nearest proposed turbine, T02), which was brought up in submissions drafting concern of visual impact.

Views of the proposed turbines from within 3km of the Wind Farm Site are represented by verified photomontage viewpoints VP1, VP2, VP3, VP7, VP10, VP12, VP13, VP15 and VP16 and the discussions of visual effects are supplemented by 15 no. alternate photowire viewpoint images, also captured within 3km of the proposed turbines. The residual visual effects on receptors represented by these viewpoints are reported in the *LVIA Appendix 14-3* and the LVIA Section 14.7.3.3 Visual Effects – Operational Phase (p.98). With respect to EPA (2022) significance of effects, the visual effects on local residential receptors are predicted to be primarily "Not Significant," "Slight" or "Moderate." Two viewpoints were predicted to have "Significant" residual visual effects, VP13 and VP12; these outcomes are discussed in the paragraphs below.

The majority of visual effects within 1.5km of the proposed turbines are predicted to be "Not Significant" to "Moderate." Mitigating factors which help to reduce the impact on visual amenity and warrant these effects ratings include provisions of the wind farm design and location siting of the proposed turbines which ensure that:

- No dwellings or community destinations are within 750m of the proposed turbines. The siting of the proposed turbines exceeds the minimum setback distances of wind energy development guidelines: 500m in the WEGs and 4-times-tip-height (185m × 4 = 740m) in the DWEGs (DoHPLG, 2019).

- The proposed turbines are likely to be fully or partially visually screened from view by ridgelines in the topography or forestry and other roadside vegetation (see previous subsection of this response, *Route Screening Analysis*); views occurring in a journey scenario will be intermittent, in some cases with entire clusters of turbines being screened from view.

- Views towards the proposed turbines within village centres will be limited or none, owing to visual screening by the built environment and localised landform.

Overall, the LVIA reports that the greatest visual effects (i.e. the "Significant" effects at VP12 and VP13) are limited to a very low number of receptors who will experience them (supported by the significantly low population density reported in the EIAR Chapter 5, Table 5.2). In addition, the perceived size and scale of turbines is seen to diminish with distance from several vantage points, thereby substantially reducing the potential for visual effects beyond 1.5km (LVIA, p.128):

> *"In summary, the highest effects on residential visual amenity will occur in relation to a relatively small number of receptors located within 1km of the proposed turbines (see viewpoints VP7 and VP13), with the scale of turbines in view reducing quickly from locations further from the Site. Beyond 1.5km from the Site (see viewpoint VP10 and photowires PWF and PWH), the scale of the turbines reduces substantially. In addition, the viewpoints located between 3–5km from the nearest proposed turbine (viewpoints VP12 and VP16) show that effects on residential receptors will be dramatically reduced in comparison to the closer receptors identified above in Figure 14-26."*

It is to be anticipated that wind farms inevitably have the potential to cause some "Significant" visual effects on proximate visual receptors due to the prominence of turbines within landscape views and the "Substantial" magnitude of change (EPA 2022) which will arise in close proximity to a wind farm development. For effects on locally sensitive receptors such as residential properties, mitigation measures can be implemented. In the case of the Proposed Development, these measures are discussed throughout Sections **Error! Reference source not found.** through 3.1.13.4 of this response, and an example is given below with respect to mitigating factors reported for viewpoint VP13.

VP13 Drumsillagh or Sallybank (Parker) is located 800m east from proposed turbine T6 (see extracted image from the *Volume 2 Photomontage Booklet* below, Error! Reference source not found.) and was captured to represent receptors deemed High sensitivity because of their close proximity to the Wind Farm Site.

Figure 1 Extracted imagery and location map for Viewpoint VP13 from the Volume 2 Photomontage Booklet

VP13 shows the highest degree of visibility possible for receptors in this area (see *Volume 2 Photomontage Booklet* and corresponding visual impact assessment reported in *Appendix 14-3*). The predicted residual visual effects are "Significant" (EPA, 2022) on account of the "Substantial" magnitude of change which may be experienced by receptors in this area. For the avoidance of doubt, this viewpoint was selected to show the level of predicted effects as the worst-case scenario and the effects are not anticipated to be experienced by most receptors in the area.

The visual impact assessment for VP13 reported in the LVIA *Appendix 14-3* indicates a number of mitigating factors which aid in reducing visual effects from views in the direction of the proposed turbines from this area (*Appendix 14-3*, p.28), as follows:

- *"The proposed turbines in view are sited in a "Strategic Area" for wind energy development in the Co. Clare Wind Energy Strategy (Volume 6 of the CCDP 2023–2029). The proposed turbines are therefore visible within an area of the landscape where it is envisioned for turbines to be seen, as guided by local planning policy.*
- *With regard to the siting of turbines in proximity to residential dwellings, the Proposed Development adheres to the minimum 500m setback distance in the current WEDGs (DoEHLG, 2006) and also the 4 times tip height setback distance set out for residential visual amenity prescribed by the draft WEDGs (DoHPLG, 2019).*
- *As a result of the iterative design process, the turbines are viewed as a coherent cluster with only a limited horizontal extent within the view, even from this location in close proximity to the Wind Farm Site.*
- *The proposed turbines are seen clustered around a hilltop within the view from this location, this is aligned with the guidance on siting of wind energy developments in the WEDGs (see p.37 of the WEDGs).*
- *The spatial extent of the proposed turbine seen in this view is appropriate relative to the scale of the hill they are seen, and in this regard the proposed turbines are also aligned with the guidance on spatial extent and scale in the WEDGs (see p.40-41 of the WEDGs).*
- *The majority of the proposed turbines are actually not visible from this location, with views primarily consisting of views of the central cluster of turbines.*
- *The valley seen to slope downwards away from the viewpoint provides a sense of scale in relation to the setback distance of the turbines, with turbines viewed as sited beyond multiple fields and treelines.*
- *The turbines are seen evenly spaced across the part of the view where they are visible."*

3.1.13.3 Sensitivity and Alteration of the Landscape

Observations raise concerns that the area around the Wind Farm Site is considered "Heritage Landscape" and considered to have "high scenic amenity." Observations also suggest that the placement of the proposed turbines on hills is inappropriate and that the landscape is sensitive without capacity to facilitate infrastructure of 185m height and will be permanently altered.

In terms of the duration of the alteration to the landscape, planning permission has been sought for a thirty-five-year operational life of the Proposed Development from the date of full commissioning of the wind farm and

subsequent decommissioning. The thirty-five-year operational life is defined as "Long-Term" in the context for the definition for duration as per EPA (2022) guidance. Therefore, the impact of the proposed turbines on this landscape and visual amenity are not permanent and are reversible.

With regard to the landscape sensitivity, the LVIA reports that the Proposed Development is sited within the Sieve Bernagh Uplands LCA-8, a designated landscape character area of the CCDP which has been given the lowest sensitivity classification to wind energy development in the CWES, Table 4a: Strategic Guidance on Landscape Capacity for Wind Energy Designations (CWES, p.36). The designations of landscape sensitivity surrounding the Proposed Development are reported in the LVIA Section 14.4.1 Landscape Designations and Policy Context (p.22-35) and assessed comprehensively for potential landscape and visual effects in the LVIA Section 14.7.3.1.2 (p.94-95). This includes consideration of "Heritage Landscapes" which are high-sensitivity landscapes of Co. Clare designated in the CCDP as having high scenic amenity.

With regard to Heritage Landscapes, the LVIA Figure 14-8 Landscape Policy Context (p.31) maps the location of the Wind Farm Site in relation to the Heritage Landscapes of Co. Clare. No Heritage Landscapes are within 6.5km of the Wind Farm Site. The closest areas of Heritage Landscape are "Lough Derg" within 7km and "the Eastern Uplands" located 17km to the north of the proposed turbines and "Fergus Estuary" and "River Shannon" heritage areas located approximately 6.5km to the south.

The ZTV analysis in the LVIA Section 14.3 Visibility of the Proposed Development (LVIA, p.16) reports that the Heritage Landscape areas around Lough Derg have no theoretical visibility of the proposed turbines owing to visual screening by intervening peaks of Slieve Bernagh range including Moylussa and Glenagalliagh Mountain located to the north-east of the Wind Farm Site; this area of no theoretical visibility is mapped in the LVIA Figure 14-1 ZTV Map (LVIA, p.14).

The LVIA Section 14.7.3.1.2 (p.94) reports that the Proposed Development will have *"no impact on the Heritage Landscape forming the western banks of Lough Derg"* and that in the Slieve Aughty Uplands forming the Eastern Uplands Heritage Landscape, the proposed turbines may be visible from elevated vantage points with south-facing aspects but *"will only be visible as small background features at distances of >17km"* and thus will have a Negligible magnitude of change, amounting to "Slight" visual effects, which are not significant. The LVIA (p.95) further reports that within the areas of Fergus Estuary and River Shannon Heritage Landscapes with the most open views towards the proposed turbines, those turbines which are visible are partially screened beyond distant hills ranging from 6.5-12km from the viewer, or have no actual visibility on the ground where the ZTV indicates theoretical visibility, thereby amounting to a Negligible or Slight magnitude of change and visual effects ranging from "Not Significant" to "Moderate."

Regarding the level of alteration to the landscape, the scale (185m tip height) of proposed turbines and clustered nature on hilltops is visually and spatially appropriate for the scale of the hills on which they are sited. The Proposed Development follows good wind farm design in line with the WEGs and the DWEGs for siting of wind farms in the relevant landscape character type (see pp.40-41 of both WEDGs documents). The *LVIA Appendix 14-3*, which contains the visual impact assessment of the proposed turbines as seen from the selected VPs, reports a number of mitigation factors which aid in reducing the visual impacts from a landscape perspective; these are summarised from the LVIA as follows:

- In some cases, the proposed turbines are background features of views and do not obstruct any long ranging landscape views or are situated in the opposite direction from primary views.
- As a result of the iterative design process, the proposed turbines are viewed as a coherent cluster with only a limited horizontal extent within some views, even from locations in close proximity to the Wind Farm Site.

- The proposed turbines are seen clustered around a hilltop within views and the spatial extent of the proposed turbine in views is appropriate relative to the scale of the hill on which they are seen.

- Where they are visible, the proposed turbines are seen to be evenly spaced across the views.

- The field structure, vegetation, and other landscape elements seen throughout views collectively serve as a physical landscape buffer and provide a sense of scale in relation to the setback distance of the proposed turbines, with turbines sometimes viewed as being sited beyond multiple fields or behind a treeline.

- From large parts of the sections of scenic routes to the west, there will be no visibility of the proposed turbines due to roadside screening.

- The Proposed Development has a very limited effect on the key scenic sensitivities of designated scenic routes SR25 and SR26 – particularly the open and long ranging panoramic landscape views to the west and northwest.

In addition, the LVIA Section 14.1.3 Mitigation by Design lists several factors incorporated into the wind farm design and site selection to ensure that the Proposed Development is sited within a low-sensitivity landscape suitable for wind energy development; these include the favourable wind energy policy, the low sensitivity of the landscape area to wind energy development, the suitable nature of the landscape as a modified working environment, and appropriate features of the landscape including sparse settlement and the large-scale upland terrain with well-defined ridges and landforms that limit visibility. These are reported as follows in the LVIA (p.5):

- *"The Proposed Development is sited in a landscape designated as a "Strategic Area" for wind energy development in local planning policy (Clare Wind Energy Strategy, which forms Volume 6 of the Clare County Development Plan 2023–2029);*

- *The Proposed Development is sited in Co. Clare Landscape Character Area (LCA) No. 8 – Slieve Bernagh Uplands. With regards to wind energy development, this LCA is afforded the lowest sensitivity designation/category attributable to LCAs in Co. Clare, as detailed in Table 4a of the Clare Wind Energy Strategy;*

- *The Wind Farm Site comprises an upland landscape with landcover and land-use characterised by commercial forestry, the Wind Farm Site itself is therefore a modified working landscape of low sensitivity;*

- *The proposed turbines are sited in a sparsely settled upland landscape. It is a large-scale landscape with the capacity to effectively accommodate a wind energy development. The nature and location of the upland landscape provide adequate setback distance from large population centres, thereby limiting the extent of landscape and visual impact upon large numbers of receptors;*

- *The topographical characteristics of the upland site and wider landscape setting limit the visual exposure of the proposed turbines. Well defined ridgelines and landforms in the upland landscape obscure visibility of turbines from large population centres and high sensitivity landscape and visual receptors in the wider landscape setting (the LVIA Study Area)."*

3.1.13.4 Cumulative Impacts of Wind Farms in SE Clare Region

Observations were made on the topic of potential cumulative impacts and how they are addressed in the EIAR, and that associated works may impact visual and residential amenity; moreover, comments suggested that cumulative developments pose a significant alteration to the landscape. Observations also consider that the Proposed Development, in combination with other wind energy developments (potentially totalling up to 66 turbines), has the potential to cause an over-intensification of turbines in the south-east Clare region.

Cumulative Wind Energy Development in Co. Clare

It is reiterated from above (see previous Section **Error! Reference source not found.** above) that the Proposed Development is sited within an upland landscape (the Slieve Bernagh Uplands LCA-8) containing "Strategic Areas" and "Acceptable in Principle" zoning for wind energy development as designated by the CCDP and the CWES and is therefore sited within a landscape envisaged for wind energy development in the future.

According to Table 4a of the CWES, which is reproduced in the LVIA Section 14.4.1.1.1 (Figure 14-7, p.27), the Slieve Bernagh Uplands LCA-8 contains:

> *"...areas on the northwest and westerly aspects of the mountain [which] are more robust and can accommodate a number of large or medium wind farms."*

The location of the Proposed Development is in line with this vision of the CWES, as it is located in the westerly mountainous uplands of Slieve Bernagh range—referring to the range of mountain peaks within the Slieve Bernagh Uplands LCA-8 comprising, among others, the peaks of Moylussa, Woodcock Hill, and Knockanuarha (where the Wind Farm Site is located).

Table 4a of the CWES also indicates cumulative siting and design guidance for "Mountain Moorland" landscape character type in the WEGs, which is the appropriate landscape type of the Wind Farm Site. This guidance of Table 4a is reported in the LVIA Section 14.7.3.2 (p.97) and indicates that cumulative effects are:

> *"Acceptable, depending on topography as well as siting and design of wind energy developments involved."*

It follows that multiple wind energy developments are envisaged for the Slieve Bernagh LCA-8, giving rise to the potential for cumulative landscape and visual effects, and that the landscape has been deemed suitable for potentially absorbing such changes. The CWES was informed by Strategic Environmental Assessment to determine suitable areas for wind energy development based on a number of factors including landscape sensitivity, representing a strongly progressive model of local authority wind energy policy to effectively guide the appropriate placement of future wind energy developments in the county, ensuring that developments in Co. Clare are able to contribute effectively to meeting Ireland's national energy targets. An outcome of the SEA and spatial planning of the CWES is the zoning of approximately 2.5% of the entire county as "Strategic Area" for wind energy development. Almost all of the proposed turbines are located within, or immediately adjacent to, lands zoned as "Strategic Area" for wind which comprises a very small and specific area of the overall area of Co. Clare.

Cumulative Assessment in the LVIA Chapter 14

The potential for cumulative effects of the Proposed Development with other wind energy developments within the 20km LVIA Study Area are comprehensively assessed and discussed in multiple sections and appendices of the LVIA which are supported by photomontage visualisations including other existing, permitted and proposed

wind energy developments; these sections are listed and described in the LVIA *Appendix 14-1 Methodology* Section 1.6.4.3 (p.23):

- *"Section 14.6 of Chapter 14 – Cumulative Context:*
  - *This section of Chapter 14 provides an overview of the other developments likely to contribute to cumulative effects in combination with the Proposed Development in the LVIA Study Area and the various cumulative scenarios which are likely to occur in existing and future receiving environments.*
  - *This Section provides an overview of the assessment methodology and cumulative ZTV mapping;*
- *Appendix 14-2: LCA Assessment Tables:*
  - *This Appendices assesses the likely significant effects of the Proposed Development on designated LCAs, with a specific assessment table for each designated LCA scoped in for assessment.*
  - *One row in each table is dedicated to the likely cumulative landscape effects arising in each LCA in combination with the Proposed Development and is factored into the overall rating of significance of impacts on each LCA.*
- *Appendix 14-3: Photomontage Assessment Tables:*
  - *This appendix assesses the likely significant visual effects of the Proposed Development from photomontage viewpoints, with a specific assessment table for each viewpoint.*
  - *Two rows in each assessment table ("Cumulative Context", and "Cumulative Effects") are dedicated to the discussion and assessment of likely cumulative visual effects as seen in the photomontages from each viewpoint.*
  - *Potential for cumulative visual effects are factored into the "Magnitude of Change" determination for each viewpoint which has the potential to alter the outcome of the visual impact assessment and the determination of likely significant effects for each viewpoint.*
- *Section 14.7.3.2 of Chapter 14 – Cumulative Landscape Effects:*
  - *This section includes discussion of interactions of the Proposed Development with other wind energy developments within the landscape including an overview of relevant of the cumulative assessments on LCAs reported in Appendix 14-2.*
- *Section 14.7.3.4 of Chapter 14 – Cumulative Visual Effects:*
  - *This section includes discussion of visual interactions of the Proposed Development with other wind energy developments including an overview of relevant of the cumulative assessments as shown in the photomontages reported in Appendix 14-3."*

The LVIA *Appendix 14-1* (p.24) states the necessary approach for cumulative impact assessment which considers the proportionality of the assessment with respect to the appropriate receptors:

> *"The assessment of cumulative landscape and visual effects needs to be proportional. The focus is always on the extent to which the Proposed Development will contribute towards the cumulative effects on the particular receptors under assessment, these contributions are clearly explained in narrative in the cumulative impact assessments included in the Chapter (Sections 14.7.3.2 and 14.7.3.4), as well as the impact assessment Appendices (Appendix 14-2 and Appendix 14-3)."*

The LVIA Section 14.7.3.2 (p.96-97) reports the outcome of cumulative landscape effects in relation to the Proposed Development, which highlights that the landscape has good capacity to absorb wind energy development, as follows:

> *"The setback distances between projects and the narrow valleys between prominent landforms create relatively small and separate visual units within the Slieve Bernagh Uplands LCA. These characteristics give this landscape the capacity to absorb and accommodate multiple wind energy developments, thus the cumulative effects to the landscape of the site are deemed acceptable. Cumulative impacts on the character of the wider landscape are [therefore] most likely to occur where the proposed turbines are visible in conjunction with other wind farm developments."*

The LVIA Section 14.7.3.4 (p.128-133) presents extensive discussion of cumulative visual effects considering the potential for cumulative visual effects between the Proposed Development and 7 no. existing, permitted and proposed wind energy developments identified in the 20km LVIA Study Area. The discussion is supported by assessment of verified photomontage imagery. The conclusion of that section states that the extent of cumulative visual effects will be limited by the undulating and well-defined landform features of the wider area:

> *"The undulating and well-defined landform features and valleys in this area have the potential to reduce the extent of cumulative visual effects experienced by visual receptors in this area that this landscape has the capacity to absorb the Proposed Development and will not have significant cumulative or in-combination effects with the other potential wind energy developments."*

Combined Impacts with Proposed Oatfield Wind Farm in an Uncertain Scenario of the Future Receiving Environment

The Proposed Oatfield Wind Farm (11 no. turbines, located approx. 500m from the nearest proposed Knockshanvo turbine) is one of 7 no. wind energy developments identified and assessed for potential cumulative effects in the LVIA. Oatfield is a "proposed" wind energy development, therefore the potential cumulative effects with the Proposed Knockshanvo Wind Farm are considered an uncertain scenario which is dependent on multiple factors including the outcome of the planning system consenting processes.

The potential cumulative effects of the Proposed Development with the Proposed Oatfield Wind Farm are comprehensively assessed in 14 No. out of 15 No. VPs in the *LVIA Appendix 14-3*, meaning all viewpoints except VP6 (Oatfield is not visible in VP6, so it is not discussed in the VP6 assessment). Within the assessment tables of *Appendix 14-3*, the cumulative context is reported for each viewpoint and the "Magnitude of Change" considers the potential effects of all cumulative developments (not just Oatfield) identified in the study area. The assessment tables of *Appendix 14-3* inform the discussions and outcomes of potential cumulative effects with the Proposed Oatfield Wind Farm, reported in the LVIA Section 14.6 Cumulative Context.

The LVIA Section 14.4.3 (p.50) describes the specific scenario of potential cumulative effects between the Proposed Development and Oatfield from the perspective of siting and design guidance the WEGs and the DWEGs (DoHPLG, 2019). The LVIA explains that, in a potential future baseline scenario, the Proposed Oatfield Wind Farm will be viewed within the same area of undulating upland landscape as the Proposed Development and that this would be acceptable in accordance with the WEDGs guidance on cumulative effects in Mountain Moorland landscapes, considering the varied nature of the landform in this upland area. In accordance with the

WEGs guidance, the scale of the hills that make up the Wind Farm Site are likely to be accepting of additional cumulative turbines.

The LVIA Section 14.6.3 Proposed Oatfield Wind Farm clearly maps the interconnected nature of the Proposed Development and the Proposed Oatfield Wind Farm in Figure 14-22 (LVIA, p.89). The LVIA explains that, due to the interconnectedness of the two wind farm turbine clusters, two versions of graphics visualisations are provided for assessment and to maintain clarity within selected viewpoints—one view showing the Knockshanvo proposed turbines only, and one view with the Knockshanvo and Oatfield proposed turbines shown together.

Discussions on the predicted cumulative effects with the Proposed Oatfield Wind Farm form a primary focus of the LVIA Section 14.7.3.2 (p.96-97) which reports the predicted cumulative landscape effects outcome, as well as the LVIA Section 14.7.3.4 (p.128-133) which reports the predicted cumulative visual effects outcome. The discussion of predicted cumulative landscape effects with Oatfield summarises that the landscape can adequately accommodate both developments, as follows (LVIA, p.97):

> *"...the undulating nature of the upland landscape would adequately accommodate both the proposed turbines of the Oatfield project in combination with all three turbine clusters of the Proposed Development."*

The discussion of predicted cumulative visual effects with Oatfield summarises that cumulative visibility would be significantly reduced beyond 5km from the Wind Farm Site (LVIA, p.97):

> *"In general, in the flat, heavily vegetated landscape that makes up much of the LVIA Study Area beyond the Slieve Bernagh Uplands, there is reduced visibility of both the Proposed Oatfield turbines and the proposed turbines from locations beyond 5km from the turbines. This has been demonstrated throughout the discussion of visual effects previously in this chapter, and in Appendix 14-3 as well as the Photomontage Booklet."*

The LVIA further notes (p.131) that both developments—the Proposed Development as well as Proposed Oatfield Wind Farm—are sited within areas zoned as "Strategic Area" and "Acceptable in Principle" by the CWES and that siting and design guidance set out in the WEGs supports the anticipation of multiple wind energy in the Mountain Moorland landscape character type. The LVIA reports the details of appropriate guidance reference in relation to cumulative effects in the WEGs. The WEGs (and DWEGs describe that *"the more varied and undulating an area is topographically, the greater its ability to absorb and screen wind energy developments."*

Finally, the LVIA applies this guidance to the assessment of potential cumulative effects between Oatfield and the Proposed Development and concludes that, in a future receiving environment, cumulative views of both developments would be aesthetically acceptable (LVIA, p.131):

> *"The guidance suggests that views of the proposed turbines along with the Oatfield Wind Farm will, in general, be acceptable aesthetically speaking within this landscape type, which is undulating and large in scale, allowing it to absorb multiple wind energy developments."*

3.1.14 Landowner Consent

Observations on file raise concerns as to whether sufficient landowner consents have been attained.

The Applicant is satisfied that they have provided all necessary landowner consents to make the subject planning application. The Commission will also note Section 31(13) of the Planning and Development Act 2000 (as amended) which states the following:

'A person shall not be entitled solely by reason of a permission under this section to carry out any development.'

The inference of this provision of the legislation is that a grant of planning permission does not authorise a developer to undertake works on land outside their ownership based solely on a grant of planning permission. The Applicant confirms that no works will proceed without all required consents being in place.

3.1.15 Property Devaluation

Concerns have been raised about the potential for the Wind Farm Site to have adverse effects on the value of properties of local residents.

As detailed in Chapter 5 of the EIAR - Population and Human Health, there are no studies on the potential for impact on property values from wind farm developments in Ireland, with the largest study on property value impacts from wind farms undertaken in the USA in 2009 by Lawrence Berkley National Laboratory (LBNL). This study, entitled 'The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi Site Hedonic Analysis', (LBNL, 2009), concluded that:

"Based on the data and analysis presented in this report, no evidence is found that home prices surrounding wind facilities are consistently, measurably, and significantly affected by either the view of wind facilities or the distance of the home to those facilities. Although the analysis cannot dismiss the possibility that individual or small numbers of homes have been or could be negatively impacted, if these impacts do exist, they are either too small and/or too infrequent to result in any widespread and consistent statistically observable impact."

The study was updated by LBNL in August 2013 through the publication of a paper entitled 'A Spatial Hedonic Analysis of the Effects of Wind Energy Facilities on Surrounding Property Values in the United States' (LBNL, 2013). The result of the study concluded the following:

"Across all model specifications we find no statistical evidence that home prices near wind turbines were affected in either the post-construction or post announcement/pre-construction periods."

Likewise, a 2014 UK study, carried out by the Centre for Economics and Business Research (Cebr) and referenced in Chapter 5 Population and Human Health, came to similar conclusions stating that the county-wide property market drives property values not the presence or absence of wind farms, adding that studies across 5 areas in England and Wales where wind farms were constructed did not experience a detectable impact on house properties. This study also concluded that in some circumstances, wind farms can improve property values.

As set out in Chapter 5 of the EIAR submitted with the Application, another study in Scotland in 2016[4] by an independent body, analysed sales on over 500,000 properties and concluded that there no evidence of a consistent negative effect on house prices.

'Across a very wide range of analyses, including results that replicate and improve on the approach used by Gibbons (2014), we do not find a consistent negative effect of wind turbines or wind farms when averaging across the entire sample of Scottish wind turbines and their surrounding houses. Most results either show no significant effect on the change in price of properties within 2km or 3km or find the effect to be positive. Results vary across areas: The results vary across different regions of Scotland. Our data

[4] *Heblicjh, Dr. S. et al 2016, Impact of wind turbines on house prices in Scotland. Available at:* https://www.climatexchange.org.uk/media/1359/cxc_wind_farms_impact_on_house_prices_final_17_oct_2016.pdf

does not provide sufficient information to enable us to rigorously measure and test the underlying causes of these differences, which may be interconnected and complex.'

To conclude, while the presence of wind farms influencing an individual buyer's opinion on a property is subjective to that individual, on an empirical level, there is no international evidence to indicate that wind farms have impacted the value of properties in areas near wind farms.

3.1.16 Impact on Cultural/Spiritual Sites

Observations raised concerns regarding impact on the Sunyata Buddhist Centre (SBM) and that the EIAR fails to consider tranquil nature of the property.

As stated in Section 5.4.1.1 of Chapter 5 of the EIAR, it is acknowledged SBM is a retreat centre that offers residential retreats and a wide variety of other events to those who wish to learn about Buddhism, mindfulness and meditation.

The inclusion of SBM in the tourism section of the EIAR is not intended to diminish its spiritual value but rather to acknowledge that it is regarded as a cultural/heritage attraction for tourists. It is also noted that the SBM (Dwelling no. 310) is regarded as a sensitive receptor and therefore has been included in the sensitive receptor's dataset (Please refer to Table 5-9 of Chapter 5 of the EIAR).

As can be observed from Table 5-9, dwelling no. 310 is predicted to experience daily shadow flicker in excess of the WEGs threshold of 30 minutes per day, in the absence of mitigation. In the event of an occurrence of shadow flicker at a dwelling location, the mitigation strategies as outlined in section 5.9.3.6 of Chapter 5 of the EIAR will apply. If it is not possible to mitigate any identified shadow flicker locally using the measures outlined in Section 5.9.3.6 of the EIAR, wind turbine control measures will be implemented.

In conclusion, the tranquil nature of the SBM has been fully acknowledged and considered within the EIAR and a comprehensive assessment of all potential effects on the centre, particularly in relation to noise, shadow flicker and visual impact has been undertaken as part of the EIAR.

No significant effects on the SBM due to the construction or operation of the Wind Farm Site are anticipated to occur.

3.1.17 Human Health

The observations received pertaining to health impacts are grouped into the following concerns:

- General health impacts from wind farms - including potential effects on overall well being, sleep disturbance and stress with specific reference to those with existing conditions such as autism, epilepsy, anxiety, migraines and infrasound effects.
- Turbine Safety concerns - including site safety concerns e.g., ice falling from turbine blades, fire, contamination.
- Construction-related impacts - including concerns regarding dust and air emissions from construction activities.

3.1.17.1 General Health Impacts

As discussed in section 5.5.1 of Chapter 5 of the EIAR, Population and Human Health, that while there are anecdotal reports of negative health effects on people who live very close to wind turbines, peer reviewed research has generally not supported these statements. There is currently no published scientific evidence to positively

link wind turbines with adverse health effects. Extensive research has been carried out in the US, Canada, UK, Australia, and by the World Health Organisation (2018). All studies conclude that exposure to wind farms and the sound emanating from wind farms does not trigger adverse health effects.

3.1.17.2 Turbine Safety Concerns

The WEGs iterate that there are no specific safety considerations in relation to the operation of wind turbines.

As detailed in section 5.5.2 of Chapter 5 Population and Human Health, the WEGs state that there is a very remote possibility of injury to people from flying fragments of ice or from a damaged blade. However, the turbine blades are composite structures with no bolts or separate components, and the danger is therefore minimised. The wind turbines will be fitted with antivibration sensors, which will detect any imbalance caused by icing of the blades. The sensors will cause the turbine to wait until the blades have been de-iced prior to resuming operation. Turbine blades are manufactured of glass reinforced plastic which will prevent any likelihood of an increase in lightning strikes within the site of the Proposed Development or the local area. Lightning protection conduits will be integral to the construction of the turbines. Lightning conduction cables, encased in protection conduits, will follow the electrical cable run, from the nacelle to the base of the turbine. The conduction cables will be earthed adjacent to the turbine base. The earthing system will be installed during the construction of the turbine foundations.

As discussed in Chapter 16 Major Accidents and Natural Disasters of the EIAR, the risk of a major accident and/or disaster during the construction of the Proposed Development is considered 'low' in accordance with the 'Guide to Risk Assessment in Major Emergency Management' (DoEHLG, 2010). It is considered that when the mitigation and monitoring measures outlined in the Construction and Environmental Management Plan (CEMP) at Appendix 4-3 of the EIAR, are implemented and adhered to there will not be significant residual effect(s) associated with the construction, operation and decommissioning of the Proposed Development.

3.1.17.3 Dust and Air Emissions

Concerns regarding dust and air emissions from construction activities is addressed in Section 3.1.15 of this Response to Observations. Based on the assessment, as detailed above, no significant effects are expected to occur.

3.1.18 Shadow Flicker

Observations raise concerns with the Shadow Flicker Assessment conducted in section 5.8 of Chapter 5 Population & Human Health of the EIAR. Observers question the methodology used and the accuracy of data analysis. A number of observers believe that receptors were omitted from the assessments and others consider the estimated occurrences of shadow flicker to be underestimations. Submissions also note concerns regarding the use of 1m X 1m windows as well as the use of ReSoft (WindFarm) as a tool to predict shadow flicker.

An observation on file notes dwellings no. 419, no. 422, no. 492, and no. 526 were omitted from the cumulative assessment with the proposed Oatfield Windfarm development. Additionally, that submission notes that a number of other current and proposed windfarms were wrongly omitted from the cumulative assessment.

Other Third-Party Submissions in relation to shadow flicker relayed concerns regarding its potential negative impacts of human health and residential amenity. A number of observers state that their use and enjoyment of their dwelling, gardens, local walkways, and amenities will be impacted.

Lastly concerning shadow flicker, several submissions raise concerns with the proposed mitigation measures, observers do not believe that the Supervisory Control and Data Acquisition (SCADA) system will be sufficient

and question the lack of on-site visits undertaken during preparation of the EIAR. Several Third-Party Submissions state that the commitment to 'zero shadow flicker' will not be adhered to and is contradicted by the proposed mitigation measures outlined in section 5.9.3.6.

3.1.18.1 Response

A comprehensive shadow flicker assessment for the Proposed Development is detailed in Chapter 5 of the EIAR: Population & Human Health. Section 5.8 details the best practice guidance for the assessment of shadow flicker, the assessment methodology and criteria with associated assumptions and limitations. Due to the high number of submissions related to shadow flicker the following section has been broken down into the following themes:

- *Occurrence of Shadow Flicker*
- *Shadow Flicker Assessment*
- *Cumulative Impact Assessment*

Occurrence of Shadow Flicker

It is important to note that Shadow flicker is an indoor phenomenon, which may be experienced by an occupant sitting in an enclosed room when sunlight reaching the window is momentarily interrupted by a shadow of a wind turbine's blade. Outside in the open, light reaches a viewer (person) from a much less focused source than it would through a window of an enclosed room, and therefore shadow flicker assessments are typically undertaken for the nearby adjacent properties around a proposed wind farm site.

The WEGs state that shadow flicker lasts only for a short period of time and occurs only during certain specific combined circumstances, as follows:

- The sun is shining and is at a low angle in the sky, i.e., just after dawn and before sunset, and
- The turbine is located directly between the sun and the affected property, and
- There is enough wind energy to ensure that the turbine blades are moving, and
- The turbine blades are positioned so as to cast a shadow on the receptor.

The frequency and strength of shadow flicker is determined by a number of factors outlined below (see section 5.8.1 of Chapter 5 for a detailed description):

- Whether the sunlight is direct and unobstructed or diffused by clouds;
- The presence of intervening obstructions between the turbine and the observer;
- How high the sun is in the sky at a given time;
- Distance and bearing, i.e., where the property is located relative to a turbine and the sun;
- Property usage and occupancy;
- Wind direction, i.e., position of the turbine blades;
- Rotation of turbine blades; and
- Whether there is sufficient wind for the turbine blades to be continually rotating.

In addition, and as is noted in section 5.8.5 of the EIAR, the predicted exceedances of shadow flicker listed in Table 5-9 of the EIAR is considered conservative, and in reality, the occurrence and/or duration of shadow flicker at these properties is likely to be eliminated or significantly reduced as the following items are not considered by the model:

- Receivers may be screened by cloud cover and/or vegetation/built form i.e., hedging, adjacent buildings, farm buildings, garages or barns;

- Each receiver will not have windows facing in all directions onto the wind farm;
- At distances, greater than 500-1000m *'the rotor blade of a wind turbine will not appear to be chopping the light but the turbine will be regarded as an object with the sun behind it. Therefore, it is generally not necessary to consider shadow casting at such distances*[5]'.

Shadow Flicker Assessment

In reference to the concerns related to the use of the Resoft WindFarm shadow flicker modelling software it should be noted that this is a well-established software tool that is utilised in the modelling of shadow flicker occurrences on identified sensitive properties and is used across the wind energy industry in shadow flicker assessments. ReSoft WindFarm Version 5.0.22 has been used to predict the level of shadow flicker associated with the Wind Farm Site.

As described in section 5.8.4.3 of the EIAR, due to the latitude of Ireland and the UK, shadow flicker impacts are only possible at properties 130 degrees either side to the north as turbines do not cast shadows on their southern side (ODPM Annual Report and Accounts 2004: Housing, Planning, Local Government and the Regions Committee; Planning Policy Statement 22; DWEGs). As such properties located outside of this potential shadow flicker zone will not be impacted. However, in the assessment, all 78 no. properties within 360 degrees of the Wind Farm Site within the Study Area were assessed for shadow flicker impact.

At each dwelling, shadow flicker calculations were carried out based on 4 no. notional windows facing north, east, south and west. Each window measures one-metre-high by one-metre-wide, and tilt angle is assumed to be zero. The centre height of each window is assumed to be two metres above ground level and no screening due to trees or other buildings or vegetation is assumed. It was not considered necessary or practical to measure the dimensions of every window on every property in the Study Area. While the actual size of a window will marginally influence the incidence and duration of any potential shadow flicker impact, with larger windows resulting in slightly longer shadow flicker durations, any additional incidences or durations of shadow flicker over and above those predicted in this assessment can be countered by extending the following mitigation strategies (see section 5.9.3.6 of the EIAR for a detailed description of mitigation measures):

- Installation of appropriate window blinds in the affected rooms of the residence;
- Planting of screening vegetation;
- Other site-specific measures which might be agreeable to the affected party and may lead to the desired mitigation.
- Controlling Shadow Flicker through the Wind Farm's SCADA control system.

Several submissions identified concerns regarding the implementation and performance of the SCADA system. In order to ensure that the model and SCADA system is accurate and working well a site visit will be carried out to verify the system and the process as outlined in Section 5.9.3.6 of the EIAR will be followed.

This method of shadow flicker mitigation has been technically well-proven at wind farm sites in Ireland and also in areas outside Ireland that experience significantly longer periods of direct sunlight. As is noted in section 5.8.5 of the EIAR, the maximum shadow flicker model assumes that daylight hours consist of 100% sunshine. This is a conservative assumption which represents theoretical precautionary conditions.

The Shadow Flicker Assessment Methodology, as described here and in section 5.8 of the EIAR, adheres to the current adopted WEGs.

[5] *Danish Wind Energy Association, 2003 http://xn--drmstrre-64ad.dk/wp-content/wind/miller/windpower%20web/en/tour/env/shadow/shadow2.htm*

Daily/Annual Shadow Flicker & Cumulative Impact Assessment

For the assessment of cumulative shadow flicker, any other existing, permitted or proposed wind farms were considered where their respective ten times rotor diameter shadow flicker study area overlaps with the corresponding study area for the Wind Farm Site.

The Study Area for the shadow flicker assessment is ten times rotor diameter from each turbine as set out in the WEGs. The cumulative shadow flicker assessment incorporates the proposed Oatfield Wind Farm, specifically turbines 10 through 20 (see **Figure 2**). This site is situated both north and south of the Proposed Development.

There is a total of 78 No. residential dwellings located within a distance of 10 rotor diameters (assessed at 1.63km) from the proposed turbine locations including dwellings nos. 419, 422, 492 and 526. Please refer to Table 5-9 of Chapter 5. Of the 78 no. properties modelled, it is predicted that 31 no. properties may experience daily shadow flicker in excess of the WEGs (2006) threshold of 30 minutes per day. This prediction is assuming worst-case conditions (i.e., 100% sunshine on all days where the shadow of the turbines passes over a house, wind blowing in the correct direction, no screening present, etc.) and in the absence of any turbine control measures. Of the 78 no. properties modelled, when the regional sunshine average (i.e., the mean amount of sunshine hours throughout the year) of 30.56% is taken into account, theWEGs total annual guideline limit of 30 hours is predicted as being exceeded at 4 no. of the properties.

As shown in Table 5-9 of the EIAR shadow flicker was not predicted at dwelling nos. 419, 422 or 526. Dwelling no. 492 is predicted to experience daily shadow flicker in excess of the WEGs threshold of 30 minutes per day. All 78 no. properties have been included in the cumulative shadow flicker assessment. Of the 78 no. properties modelled in the cumulative assessment, it is predicted that 14 no. properties may experience daily shadow flicker in excess of the WEGs threshold of 30 minutes per day. When the regional sunshine average of 30.56% is taken into account, the dwellings that are predicted to experience cumulative shadow flicker are presented in Table 5-10 of Chapter 5 of the EIAR. Dwellings no. 419, 422, 492 and 526 are not predicted to experience cumulative shadow flicker.

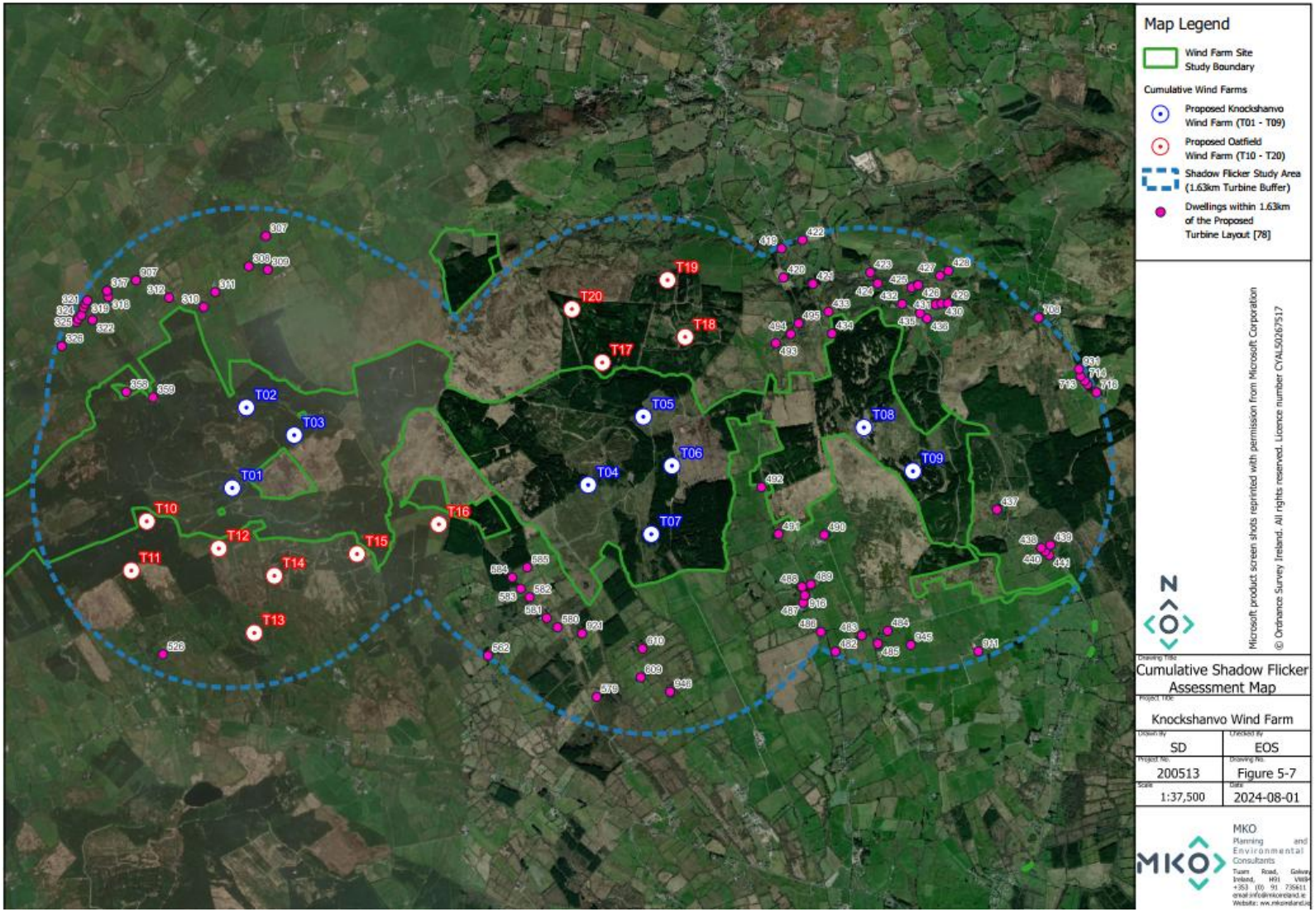

Figure 2 Cumulative Shadow Flicker Assessment Map (Figure 5-7 of the EIAR)

3.1.19 Employment

An observation was raised that job creation associated with the Proposed Development was minimal.

It is noted that the design, construction and operation of the Proposed Development will provide employment for technical consultants, contractors, and maintenance staff. Approximately, 80-100 jobs will be created during the construction, operation, and maintenance phases of the Proposed Development. During construction, additional employment will be created in the region through the supply of services and materials to the Proposed Development. The construction phase of the Proposed Development will last between approximately 18 – 24 months.

The injection of money in the form of salaries and wages to those employed during the construction phase of the project has the potential to result in an increase in household spending and demand for goods and services in the local area. This will result in local retailers and businesses experiencing a Short-term Positive effect on their cash flow

3.1.20 Equine

Several submissions highlighted concerns around for the potential for negative effect on stud farms and other equine facilities within the vicinity of the Wind Farm Site. The closest stud farm/equine facility is approximately 2km from the nearest turbine (T05).

There have been no known studies carried out in Ireland on the impacts of wind farms on the equine industry. In 2014 Marshall Day Acoustics published a document entitled *'Summary of research of noise effects on Animals'.* The Marshall Day study specifically assessed the impacts of varying levels of noise on horses in three differing behavioural settings.

The three behavioural settings studied included horses in stables, breeding mares and racing horses which are discussed below.

Horses in Stables

The study by Marshall Day Acoustics found that horses, stabled at the Flemington Racecourse Australia at the same time as a music concert on the site, when exposed to $L_{Aeq,15min}$ of 54-70 dB showed little response to the music noise unless the noise was particularly impulsive. The horses stabled at Flemington Racecourse were thoroughbreds, and stables were located 200 metres from the concert.

Breeding Mares

A study by Le Blanc et al (1991) and summarised by Marshall Day studied the effects of simulated aircraft noise over 100 dB and visual stimuli on pregnant mares. The study focused on pregnancy success, behaviour, cardiac function, hormonal production and rate of habitation. Le Blanc concluded the following:

> *Le Blanc et al (1991) found that birth success of pregnant mares was not affected by F-14 jet aircraft noise. While the 'fright-flight' reaction was initially observed, the mares did adapt to the noise.*

Racehorses

Marshall Day Acoustics concluded the following in relation to their study on the impacts of noise on racehorses:

Marshall Day Acoustics have observed horses grazing in paddocks directly under the main approach path of the Christchurch International Airport where noise levels are in excess of 90 dB (LAmax) during an aircraft flyover. Although these horses are arguably "used to" the noise, there was generally little recognition by them of an aircraft passing, let alone any sign of disturbance. This tends to support the conclusions by Le Blanc et al (1991).

3.1.20.2 Guidance

In the absence of national policy or guidance in relation of the development of wind farms near stud farms/equestrian centres, MKO have reviewed the British Horse Society's *'Advice on Wind Turbines and Horses – Guidance for Planners and Developers'*. A copy of the guidance document is included in **Appendix 4** of this response.

As mentioned previously, the closest stud farm/equestrian facility is located approximately 2km from the nearest proposed turbine location and is therefore at a distance of ten times the British Horse Society's recommended minimum separation distance of 200 metres as noted above. It also exceeds the 555 metres separation distance (based on three times the maximum turbine blade tip height of 185 metres).

In conclusion, the Wind Farm Site complies with the minimum separation distance as recommended by the British Horse Society.

4. RESPONSE TO STATUTORY CONSULTEES' OBSERVATIONS

A total of 7 submissions were submitted to the Commission from Statutory Consultees in relation to the Wind Farm Site. **Table 4** below identifies the Statutory Consultees who lodged a submission to the Commission in relation to the Wind Farm Site and who in the project team is responsible for the corresponding response. The submission from Clare County Council is covered in **Section 5.1** of this document.

Table 4: List of Statutory Consultees and Lead Author for Response

Statutory Consultee	Themes Included	Lead Author for Response
AirNav Ireland and Shannon Airport	Aviation	AI Bridges – Aviation Consultants
The Department of Housing, Local Government and Heritage	Archaeology, Ornithology, Biodiversity	Tobar Archaeology MKO Ornithology MKO Ecology
Failte Ireland	Tourism, Landscape	MKO Planning, MKO landscape
National Environmental Health Service	Health Impacts	MKO Planning
Transport Infrastructure Ireland	Traffic & Transport	Alan Lipscombe Traffic and Transport Consultants – Traffic Consultants

4.1 AirNav Ireland and Shannon Airport

This section provides a combined response to observations made by both AirNav Ireland (AirNav) and Shannon Airport Authority DAC (SAA), due to the similarity in the issues raised across both submissions.

A Response Statement to all the matters raised by both AirNav Ireland and Shannon Airport Authority DAC has been prepared on behalf of the Applicant by Ai Bridges and is provided at **Appendix 5** of this Response to Observations.

This Response Statement addresses the observations received in relation to the objections raised against the Wind Farm Site on the basis of

1. The potential to adversely affect the provision of safe and efficient Air Traffic Services and the Instrument Flight Procedures (IFP's) flown by aircraft arriving and departing Shannon Airport
2. Having potential impacts to the performance of the radar surveillance system at Woodcock Hill in the form of radar beam deflections, reflections and shadowing from the wind turbines
3. Compromising the Woodcock Hill radar's compliance with EU performance criteria required for 5NM horizontal separation of aircraft transiting En-route Irish Airspace and also the 3NM horizontal separation of aircraft in Dublin airspace

4. AirNav's continued objections since 2018, having previously engaged with multiple developers to similar proposed developments in this area.

For clarity, it is noted at the outset that the Applicant has engaged with AirNav on a number of occasions to try and better understand the major concerns in relation to the Wind Farm Site above and continues to engage with them, with the latest meeting taking place on the 16th April 2026.

Furthermore, the Applicant commissioned Ai Bridges to engage aviation experts and consultants to undertake the required in-depth analysis and update current reports to provide supporting case study evidence which would provide AirNav with a high level of confidence that there is a practical way to proceed with a safety assurance case for potential mitigation options to be submitted for review and approval by the AirNav Safety Management Unit to take before the IAA, as regulator.

Ai Bridges subsequently commissioned Cyrrus Limited in November 2025 to conduct a review and update of the IFP Safeguarding Assessment and Radar Mitigations Options Assessment that they previously prepared in 2023 to 2024 with a view to revising and updating same to address the key observations raised by AirNav in relation to the Instrument Flight Procedures (IFP) at Shannon Airport and to the Woodcock Hill Secondary Surveillance Radar.

4.1.1 Applicant's Response

The submissions of both AirNav and SAA are addressed in the accompanying report at **Appendix 5** in the context of the following major concerns in relation to impacts of the Wind Farm Site:

- Instrument Flight Procedures
- En-Route Radar Surveillance sensor at Woodcock Hill facility
- Previous Developments since 2018
- Navigational Aids

The Applicant also notes the comments as set out by Shannon Airport in its submission and these are also addressed in the report also in relation to:

- In general terms may have implications for the operations of the communication, navigation and surveillance systems used by Air Nav Ireland for the separation and safety of aircraft.
- Maintaining aerodrome free from obstacles by establishing obstacle limitation surfaces (OLS)
- Shannon Airport does not concur with conclusion that there are no residual impacts as stated in the Knockshanvo Wind Farm Aviation Assessment Summary report (Appendix 15-6).

Furthermore, the Applicant makes note of conditions which are industry standard as part of general guidance for windfarm developments as set out by Shannon Airport in its submission and these are also addressed in the accompanying response.

The main items as set out in this report are summarised below for reference.

4.1.1.1 Instrument Flight Procedures

In relation to the Air Traffic Services and Instrument Flight Procedures (IFP's) flown by aircraft arriving in and out of Shannon Airport, AirNav objects in the strongest possible terms to the Wind Farm Site. These concerns are shared by SAA.

The main concern that AirNav have is that the Wind Farm Site would introduce new obstacles in the vicinity of Shannon Airport and which have the potential to compromise several of these IFPs.

Comment

Cyrrus in their IFP Safeguarding Assessment (Included in **Appendix 5**) present mitigation options to mitigate the impacts to the IFPs at Shannon Airport and also present additional design options which offer viable mitigation measures to remove the impacts on the flight procedures. Cyrrus concludes that, while there are impacts from the Wind Farm Site to the Flight Procedures and ATCSMAC Charts at Shannon Airport these are viable mitigation options.

On this basis the Applicant considers that, beyond the PBN implementation date of 6th Jun 2030 that there should be no impact from the Wind Farm Site to the re-designed Instrument Flight Procedures for Shannon Airport.

Currently, proposed turbines T01, T02 and T03 of the Proposed Wind Farm are identified as penetrating the current departure and approach obstacle protection areas at Shannon Airport. However under the new navigation measures, proposed turbines T01, T02 and T03 could be constructed, albeit not until the 07th June 2030 when the new measures are rolled out.

The Applicant also notes that there was no specific objection or concern raised by either AirNav on Shannon Airport in their submission in October 2024 in relation to any adverse effects of the proposed development may have on the Flight Inspection Procedures and profiles associated with the Shannon Airport Runway 24 Instrument Landing Systems. In August 2021, the Applicant previously commissioned FCSL, an IAA approved service provider, to conduct an assessment against the 18-turbine layout. The findings were that ILS flight inspection procedures would potentially be impacted and the procedures would have to be flown at an increased height which could result in an increased flight inspection costs. FCSL recommended that flight trials be conducted to ensure correct ILS received operation at increased ranges. Following additional flight trials, FCSL confirmed that adequate signals were received when the flights were conducted at 2,600ft and 3,000ft. FCSL confirmed that when the flight inspection operations ae conducted in instrumented metrological conditions at 2,7600ft and the 18-turbine layout would not have any effect on the Shannon Airport Runway 24 flight inspection procedures. The summary sections from each of the FCSL assessments are included in the attached report.

Should the Commission deem it appropriate, the Applicant would accept a condition attached to any grant of planning permission requiring that turbines T01, T02 and T03 are not constructed until the measures are in force, in the interests of aviation safeguarding.

4.1.1.2 Radar Surveillance at Woodcock Hill Facility

AirNav and SAA have raised concerns that the Wind Farm Site would have a significant negative impact on the performance of the radar surveillance systems at the Woodcock Hill facility.

AirNav have also raised concerns that the proximity and scale of the Wind Farm Site would lead to radar beam deflections, reflections, and shadowing from the wind turbines. AirNav believes that there are no credible and implementable mitigations that could be applied to the Woodcock Hill radar to eliminate these effects.

Furthermore, AirNav have raised concerns that the Wind Farm Site would compromise the Woodcock Hill radar's compliance with EU mandated surveillance performance criteria required to support 5 Nautical Mile horizontal separation of aircraft in En-Route Irish airspace and 3 Nautical Mile horizontal separation of aircraft in Dublin airspace.

Comment

The Applicant has engaged Cyruus to review the impacts of the Wind Farm Site on the Radar Surveillance equipment at Woodcock Hill.

Cyrrus Radar Assessments

In their Radar Mitigations Options Study, Cyrrus conducted a detailed technical assessment with detailed calculations and analysis showing there would be no radar shadowing effect caused by the Wind Farm Site on the Woodcock Hill Secondary Radar. Cyrrus also reference the Radar Assessment that they conducted in 2021 and 2024 against the previous 18-turbine design at Violet Hill, stating that this turbine design did not cause any significant adverse shadowing affect and that the shadowing effect of the reduced 9-turbine design of the Wind Farm Site would be no worse. Fundamentally Cyrrus reported in the Radar Mitigations Option Study that while there would be impacts on the Secondary Radar (MSSR), these impacts would be operationally tolerable.

TNO - Detailed Engineering Assessments

Furthermore, the Applicant also commissioned Ai Bridges to engage with TNO, an independent research organization in the Netherlands who have the software tooling capabilities to simulate and report on the effects of tall buildings, structures or wind turbines on radar systems. TNO carried out a Detailed Engineering Assessment (DEA) against the potential impacts of the Wind Farm Site on the radar at Woodcock Hill.

The TNO DEA Assessment, which was completed in January 2026 was issued to AirNav for their review. Following their review of the TNO Assessment, AirNav reverted to the applicant with a request for a further meeting to discuss the findings of the Assessment Report. The meeting took place on the 16th April 2026.

The Applicant also notes that, since the original project was submitted in August 2024, a new Radar, the Tooman (Dublin) radar is now in operation. This system provides additional radar coverage not only for Co.Clare but also for the Country as a whole, therefore providing additional mitigation in respect of any potential impact from the Knockshanvo Wind Farm Sie.

The outcome of the TNO modelling has been used by Air Navigation Service Provider (ANSP) in other EU Member States to assist with determining if the deflection impacts caused by wind turbines on MSSR are operational acceptable and in other cases the DEA reports inform an appropriate mitigation scheme.

TNO – Case Studies

The Applicant, on foot of the recent significant information received in relation to AirNav's radar sensors in operation in the State, commissioned Ai Bridges to engage TNO to conduct further DEA assessments and prepare Case Studies to obtain evidential support and specific evidence by way of simulations that will substantiate the claims and concepts contained within the Radar Mitigations Options Study prepared by Cyrrus .

The applicant also re-engaged Cyrrus to update their Radar Mitigations Options Study prepared in December 2023 to address the operational considerations in the context of Eurocontrol Surveillance Standards which defines the surveillance requirements for aerodromes and terminal areas as applicable for Shannon Airport (as referenced in section Appendix C, section 5.3). which was completed on 15 April 2026.

The Applicant believes that the mitigation options are credible and that they can provide a simulation model that quantifies empirically the exact level of impacts that may be caused by the proposed development on the Woodcock Hill MSSR.

In summary, the Applicant believes that it has provided the evidence that proves that any deflections impacts can now be modelled and provide the assurances to AirNav that the TNO can be relied upon and would allow a way forward to discuss the mitigation options that have been provided for consideration

4.1.2 Conclusion

The Applicant acknowledges the objections, comments and notice to conditions set out by AirNav and SAA with respect to aviation safeguarding matters and remains fully committed to resolving these in order for the Proposed Development to proceed.

It is considered that robust and viable mitigation options have been identified to mitigate the impacts to the IFPs at Shannon Airport and additional design options have also been presented which offer viable mitigation measures to remove the impacts on the flight procedures.

In relation to the Radar Facility at Woodcock Hill, the Applicant considers that it has provided comprehensive and technical evidence, which proves that any potential deflections impacts can now be modelled, and provide the assurances to AirNav that the TNO assessment can be relied upon, allowing a way forward to discuss the mitigation options that have been provided for consideration.

The Applicant would welcome the opportunity to further engage with AirNav Ireland and Shannon Airport to discuss mitigation solutions that have been presented in the Instrument Flight Procedures Safeguarding Assessment, the Radar Mitigations Options Report and the evidence and case studies that have been requested by AirNav in 2025 following meetings and further consultation.

The Applicant also notes that there are precedents where wind farm developments have been granted permission by the Commission, within the 16km wind farm assessment zone for the Woodcock Hill Radar Facility, as prescribed by the EUROCONTROL Guidelines for assessing the impacts of wind turbines on radars. These include Fahy Beg Wind Farm (Case reference: PL03.317227), Carrownagowan Wind Farm (Case reference: PA03.308799) and Lackareagh Wind Farm (Case reference: PL03.321285). Furthermore, Boolynagleragh Wind Farm was also granted permission by the Commission (Case reference: PL03.244095) which is located within 16km of Shannon Airport.

The Applicant would also be agreeable to the inclusion of the following condition in the event that planning permission is granted:

> *The Development shall not commence unless and until written confirmation has been submitted to, and agreed in writing by, the Planning Authority that AirNav Ireland and Shannon Airport Authority have approved the detailed mitigation measures and associated programme of works proposed in relation to the development, for the purpose of minimising potential impacts on aviation operations and protecting the safety of air navigation.*
>
> *The mitigation measures and programme of works shall provide for the implementation and timing of such measures, including any monitoring, notification or operational protocols required by AirNav Ireland and Shannon Airport Authority.*
>
> ***Reason:*** *In the interest of air safety*

Considering the very complex and technical nature of the matters under consideration, the Applicant would welcome the opportunity to participate in an Oral Hearing to present and discuss these matters of concern raised by AirNav and SAA in detail to facilitate an informed assessment of the mitigation strategies proposed.

4.2 The Department of Housing, Local Government and Heritage

The Department of Housing, Local Government and Heritage (DoHLGH) raised observations in relation to the following themes:

- Archaeology
- Ornithology,
- Biodiversity

Each of these themes is addressed in the sections below.

4.2.1 Archaeology

The response to this section has been prepared by Tobar Archaeological Services Ltd who prepared the archaeology and cultural heritage chapter, Chapter 13, of the EIAR which accompanied the Proposed Development.

In their submission, the DoHLGH noted the archaeological requirements which it states should be included as a condition of any grant of planning permission. These requirements are addressed below.

Requirement:

All mitigation measures in relation to archaeology and cultural heritage as set out in Chapter 13 of the EIAR (Tobar Archaeological Services; dates 29 August 2024) shall be implemented in full, except as may otherwise be required in order to comply with the conditions of this Order.

Response:

As set out in Chapter 13 of the EIAR a number of mitigation measures are proposed regarding the recorded and unrecorded archaeological and cultural heritage resource.

The Applicant confirms that all mitigation measures as set out in Chapter 13 of the EIAR shall be implemented in full, except as may otherwise be required in order to comply with the conditions of any grant of permission.

Requirement:

The developer shall engage a suitably qualified archaeologist (licensed under the National Monuments Acts) to carry out pre-development archaeological testing in areas of proposed ground disturbance and to submit an archaeological impact assessment report for the written agreement of the planning authority, following consultation with the National Monuments Service of the Department, in advance of any site preparation works or groundworks, including site investigation works/topsoil stripping/site clearance and/or construction works.

Response:

As detailed in Section 13.3.3.4 of Chapter 13 pre-development archaeological testing of the proposed wind farm infrastructure will be carried out under licence from the National Monuments Service. A report on the testing will be compiled on completion of the work and submitted to the NMS and the Planning Authority. The report will include an archaeological impact assessment. Further mitigation including preservation in situ (avoidance), preservation by record (excavation) and/or buffer zones may be required depending on the results of the testing.

Requirement:

A suitably qualified archaeologist shall be retained to advise on and establish appropriate Exclusions Zones around the external-most elements of vulnerable Heritage Assets (as identified in Chapter 13 of the EIAR or by any subsequent investigations associated with the project).

Response:

The requirement for buffer or exclusion zones around cultural heritage assets was identified in Chapter 13 of the EIAR to include recorded monument CL044-068— Megalithic tomb – wedge tomb located within the Wind Farm Site, CH1 a ruinous stone structure located in clear felled forestry within the Wind Farm Site and CL053-007— Enclosure which is located adjacent to the proposed overrun area at Aharinaghbeg townland along the proposed TDR. As detailed in the mitigation measures in Chapter 13 the following buffer/exclusion zones are proposed and the location, extent and demarcation of each will be agreed in advance with the National Monuments Service and the planning authority.

- A buffer zone measuring 30m will be established around megalithic tomb CL044-068— prior to the commencement of construction works. The buffer will comprise durable temporary fencing with 'keep out' signage. The requirement for the buffer zone and associated signage will be included in the CEMP.

- No ground works or storage of materials or tracking of machinery will take place within the buffer zone.

- A buffer zone of 20m will be established around ruinous stone structure CH1 prior to the commencement of any works. The buffer will comprise durable temporary fencing with 'keep out' signage. The requirement for the buffer zone and associated signage will be included in the CEMP.

- No ground works or storage of materials or tracking of machinery will take place within the buffer zone.

- A buffer zone of 10m will be established around recorded monument CL053-007— Enclosure prior to the commencement of any works. The buffer will comprise durable temporary fencing with 'keep out' signage. The requirement for the buffer zone and associated signage will be included in the CEMP.

Requirement:

The Construction Environment Management Plan (CEMP) shall include the location of any and all archaeological or cultural heritage constraints relevant to the proposed development as set out in Chapter 13 of the EIAR and by any subsequent archaeological investigations associated with the project.

Response:

As detailed in Chapter 13 of the EIAR all mitigation measures set out therein pertaining to archaeological or cultural heritage constraints will be included in the CEMP. The CEMP will include the location of all archaeological and cultural heritage constraints, will identify any potential direct or indirect impacts to same and will detail all mitigation measures to be implemented to ensure the protection of the archaeological and cultural heritage assets during all phases of site preparation and construction activity.

Requirement:

The applicant shall retain the services of a suitably qualified archaeologist to advise on an archaeological mitigation plan for decommissioning of the development, to include mitigation measures for the removal of the turbines and the protection of any archaeological sites and monuments that are in situ at the site.

Response:

No potential significant effects to the archaeological or cultural heritage resource as a result of the decommissioning phase of the Proposed Development were identified in Chapter 13 of the EIAR as it is considered that the mitigation measures implemented during the construction phase of the project will have dealt with any potential effects.

Notwithstanding this, as per point no. 5 of the DoHLGH submission, a suitably qualified archaeologist will be retained to advise on an archaeological mitigation plan for the decommissioning phase of the proposed project. The Decommissioning Plan will include the location of all archaeological and cultural heritage constraints as set out in Chapter 13 and any additional constraints identified as a result of any subsequent archaeological investigations carried out as part of the Proposed Development. The Plan will identify any potential direct and indirect impacts which may arise from the decommissioning phase of the project and set out any mitigation measures deemed necessary to alleviate such potential impacts.

Requirement:

The planning authority and the National Monuments Service of the Department shall be furnished with a final archaeological report describing the results of all archaeological monitoring and any archaeological investigative work/excavation required, following the completion of all archaeological work on site and any necessary post-excavation specialist analysis. All resulting and associated archaeological costs shall be borne by the developer.

Response:

A final report detailing the results of archaeological monitoring of ground works and any archaeological investigations such as archaeological testing and excavation undertaken as part of the Proposed Development will be compiled on completion of the site work. The report will be illustrated with relevant drawings, photographs and plans and will also contain any necessary specialist reports. The final report will be submitted to the National Monuments Service and the planning authority.

4.2.2 Ornithology

The response to this section has been prepared by MKO Ornithology.

4.2.2.1 Collision Risk

The DoHLGH raised concerns in relation to hen harrier collision risk, while acknowledging that the Wind Harrier paper[6] found the risk of collision to be low.

As outlined in Appendix 7-6 of the EIAR a detailed collision risk assessment was undertaken in accordance with industry best practice standards. The collision risk assessment identified the potential for collisions to occur. The annual rate of collisions was then considered against the population that is likely

[6] *Wilson et al. (2015). The interactions between Hen Harriers and wind turbines. WINDHARRIER Final Project Report. School of Biological, Earth & Environmental Sciences, University College Cork, Ireland.*

to be impacted. Please note that it is this annual rate of potential collisions that informs the consideration of significant effects in the impact assessment[7].

As outlined in Section 7.6.2 of the EIAR, no significant population-level collision risk effects were predicted for any species, including hen harrier. The literature also agrees that collision risk is unlikely to be a significant issue for hen harrier (Wilson *et al.,* 2015). Collision mortality of harriers may be disproportionately lower than other raptors (Drewitt and Langston, 2008). This is likely due to hen harrier's characteristic low altitude flight, particularly when foraging (Madders, 2000; Whitfield and Madders, 2006; Band et al., 2007). This low altitude flight limits the potential for a collision to occur.

The already low rates of predicted collisions are likely to be further reduced by the proposed compensation and enhancement plan. The successful enhancement or rehabilitation of habitats outside the wind farm is likely to encourage harrier species to use alternative habitats of lower risk away from turbines (Langston *et al.,* 2013; Simmons *et al.,* 2020).

Notwithstanding this, a comprehensive suite of commencement/pre-construction and operational phase monitoring is proposed in Section 7.9 of the EIAR. The proposed monitoring programme was proposed specifically to monitor the success of hen harrier mitigation and as a best practice measure (SNH, 2009). The proposed monitoring plan is comprehensive and considered entirely adequate in this regard. The monitoring results will be reported to the Planning Authority following each monitoring year and will include information on the rate of occurrence of receptors and the number of collisions. This will inform recommendations that may include additional mitigation or adaptation if required.

4.2.2.2 Redacted Information

The DoHLGH queried the location of some of the bird data, and in particular, why some of the hen harrier data appears to have been redacted.

Appendix 7-5 was submitted to the planning application as a confidential appendix. This appendix contains sensitive information relating to breeding, roosting and/or resting places of protected species, which could be at increased risk of persecution and/or disturbance if locations are made publicly available. MKO can make this information available upon request.

4.2.2.3 Adequacy of Compensation and Enhancement Lands

The DoHLGH acknowledge the Biodiversity Management Plan *"contains some welcome measures"* but outlines their concerns in relation to the habitat loss calculation that informed the quantum of land that was required to offset significant effects and questions the value of the proposed farmland enhancement.

Habitat Loss Calculation

The decline in hen harrier populations in Ireland is a result of human-related pressures, in particular habitat modification and loss. Research carried out by the University College Cork in 2015 identified a 'possible' reduction in breeding success within 1km of turbines. The conclusion of a 'possible' reduction in breeding success rather than one of greater certainty was due to the analysis of breeding success being found to be statistically non-significant (Wilson et al., 2015). The DoHLGH expressed concern, with reference to this WindHarrier paper[8], that breeding success in hen harrier can be impacted up to a distance of 1km. In effect, what is said is that turbines impact hen harrier, such as through habitat loss, and if you reduce the availability or quality of hen harrier habitat, this could have negative impacts on breeding success. This is acknowledged in relation to the proposed development, and as is outlined in

[7] *It is acknowledged that there is a typo in Appendix 7-6, the lifetime of the wind farm is taken to be 30 rather than 35 years. As previously outlined, this is auxiliary information that is not relied upon in the impact assessment.*
[8] Wilson *et al.* (2015). The interactions between Hen Harriers and wind turbines. WINDHARRIER Final Project Report. School of Biological, Earth & Environmental Sciences, University College Cork, Ireland.

EIAR Section 7.5.3.2 in the absence of the proposed offsetting measures, significant effects are predicted. Accordingly, a comprehensive Biodiversity Management Plan is proposed for the benefit of hen harrier to offset significant effects.

A multi-site study at twelve wind farms in Britain (Pearce-Higgins et al., 2009) investigated the distance turbines were avoided by various species including hen harrier. It was reported in hen harrier that there was a reduction of 52.5% in activity within 500m of operating wind turbines and significant avoidance within 250m.

The DoHLGH queries how the habitat loss was calculated for hen harrier, and in particular, whether avoidance of turbines at 250m or 500m should inform the calculation. As foraging hen harrier have the potential to experience significant avoidance of turbines to a distance of 250m (Pearce-Higgins et al., 2009), habitat loss was calculated assuming 100% avoidance within 250m of turbines. As outlined in Section 7.5.3.2 of the EIAR, the rationale for this was as follows. Pearce-Higgins et al., (2009) noted significant avoidance of turbines to 250m. Figure 1 of the 2009 paper shows that the reductions in hen harrier density mainly occur within 250m of a turbine. The statistical model from this paper assumes a linear relationship between bird density and distance from a turbine in 500m distance bands. This means that if the avoidance effect extends for less than 500m the model is likely to overpredict the displacement effect at 500m, i.e. in the present case it would double the predicted displacement effect. There is therefore a sound scientific basis for using a 250m buffer rather than 500m for estimating the hen harrier displacement effect, i.e. 58.57ha.

The DoHLGH further queries how the sum of the habitat loss from the nine proposed turbines is less than the area of a circle with a 250m radius (c. 19.6ha) multiplied by nine. The calculated habitat loss is less than this due to the evolving value of forestry to hen harrier as the forestry matures. As outlined in further detail in EIAR Appendix 6-5, commercial forestry is only suitable for hen harrier when young before the canopy closes. As the amount of closed canopy forestry within 250 metres of the proposed turbines varies with the rotational cycle of forestry, the habitat loss calculation has been made using Coillte felling plans to determine the average amount of potentially available hen harrier habitat over the operational phase of the wind farm.

Another query related to how the habitat loss figure was calculated questioned whether the habitat loss was calculated from the turbine base or from the outermost tip of the turbine blade. The habitat loss was calculated from the turbine base, as per the research of Pearce Higgins *et al.*, (2009). As outlined in EIAR Section 7.5.3.2 , it was reported in hen harrier that there was a reduction of 52.5% in activity within 500m of operating wind turbines and significant avoidance within 250m. This paper takes this measurement from the turbine; there is no discussion of the outermost tip of the turbine blade.

Biodiversity Management Plan

The DoHLGH queries the added value that can be provided to hen harrier through the enhancement of farmland and heath if the habitat is already, to some extent, suitable for hen harrier. The wording is as follows:

> *"The management measures on joining farmland and heath (46.5 hectares) may improve the habitat but this habitat already exists to a significant degree, so is not new habitat and is already available, whereas the habitat to be made unavailable by the development will be effectively removed from the current harrier range."*

It is important to note that the proposed Biodiversity Management Plan is a deforestation plan first and foremost (54.2ha of felling). In terms of the quantum of land proposed, the amount of deforestation (54.2 ha) alone nearly matches the total habitat loss figures of the proposed wind farm site (58.57ha). The key underlying principle of the hen harrier impacts assessment is that the species is subject to multiple pressures/threats and that the magnitude of their effect can be expressed in a hierarchy. This hierarchy is based on Irish research and has been provided in various locations, but chiefly by the NPWS in their

Article 12 report[9] and in the Threat Response Plan for the Hen Harrier 2024-2028. Forestry is identified as the threat/pressure of highest importance (along with measures associated with agricultural intensification (drainage)). The same reporting identifies wind farms as of medium importance[10]. This national hierarchy of pressures/threats also appears to hold true at the local level. Thus, in the hierarchy of pressures/threats negatively impacting hen harrier, forestry is of higher importance than wind farms. It then follows that if there are negative effects associated with a wind farm (as in the present case with the proposed development) these are likely best offset by alleviating impacts associated with forestry. This is the approach taken in this planning application for the Wind Farm Site.

Forestry is a net negative for hen harrier as it is only suitable or available to the species while young (>10-12 years typically) and after canopy closure is of no ecological value. As previously outlined, afforestation is identified by Article 12 reporting as a key threat/pressure of high importance. BirdWatch Ireland stated that afforestation and forest maturation is one of the primary threats to the hen harrier. Loss of suitable habitat in upland areas through agricultural intensification, including afforestation, is one of the main concerns for the future of the hen harrier population. Over 50% of Ireland's Hen Harrier SPA network consists of commercial forest, compared to 11% nationally. The fluctuations in hen harrier populations in Ireland can be related to habitat modification and loss (Wilson *et al.*, 2015). In particular, extensive afforestation over the past 65 years in Ireland has resulted in the loss of large areas of open habitat suitable for breeding hen harrier.

In Scotland, a habitat enhancement area of 235ha was established as part of a mitigation plan to address the potential impacts of a wind farm on a pair of hen harrier. This consisted of commercial forestry felling. The use of the enhancement area by hen harrier increased considerably after the wind farm was built, although they also continued to use the wind farm consistently (discussed in Gómez-Catasús and Balotari-Chiebao, 2022).

All of the turbines of the Wind Farm Site are sited in commercial forestry. The Biodiversity Management Plan proposes to compensate for the loss of predominantly low ecological value habitat with good quality hen harrier habitat through the deforestation and restoration of the underlying peatland habitat (as per Appendix 6-5 of the EIAR). In terms of the quantum of land proposed, as previously stated, the amount of deforestation (54.2 ha) alone nearly matches the total habitat loss figures of the Wind Farm Site (58.57ha). The value of enhancing an additional 46.5ha of farmland should be considered in the context of this minor shortfall of c. 4ha.

Table 5 Summary: Predicted Habitat Loss versus Proposed Compensation and Enhancement. Of note is the near 1:1 ratio of deforestation to offset the predicted habitat loss. The shortfall of c. 4ha should be weighed against the 46.5ha of farmland enhancement.

Habitat Loss/Gain	Habitat Type	Quantum	Notes
Habitat Loss	Commercial forestry	-58.57ha	Habitat loss before intervention
Habitat Gain	Deforestation: restored peatland	+54.2 ha	Offsetting loss at a near 1:1 ratio
Subtotal: net loss	Commercial forestry	- c. 4ha	Shortfall before farmland enhancement
Habitat Gain/Safeguarding	Farmland enhancement	+46.5ha	Should be weighed against the c. 4ha shortfall. Discussed in detail in the paragraph below.

[9] *The status and trends of Ireland's bird species – Article 12 Reporting. The reporting obligation stems from Article 12 of the EU Birds Directive (2009/147/EC).*

[10] *'High importance' includes factors that have important direct or immediate influence and/or act over a large area; 'medium importance' includes direct or immediate influence, mainly indirect influence and/or act over a moderate part of the area/act only regionally; 'low importance' includes pressures and/or threats deemed to be acting at a more local scale.*

The 46.5ha of upland grassland and peatland is proposed for enhancement and safeguarding for foraging hen harrier. The farmland is predominantly wet heath and wet grassland with frequent stands of rushes (Juncus spp.), gorse and scrub. Hedges border fields and fringe the roads that provide access to the management areas. Please refer to EIAR Appendix 6-5 Figure 3-1 for location details. The programme will safeguard existing hen harrier habitat and promote the creation of new and improved supporting habitat for hen harrier and their prey. The prescriptions are concerned mainly with maintaining low-level extensive grazing in bog and heath areas, the maintenance of rough wet upland grassland in a condition that is neither too overgrown nor too heavily grazed (preferably through low-intensity grazing) and the retention and creation of scrub areas and edge habitats (i.e. bushy hedgerows). The safeguarding/ land management certainty of this habitat is likely to have a tangible impact on hen harrier, as the "intentional removal of [natural and semi-natural] habitat which are principally driven by agricultural improvements" is a key issue within the breeding range of hen harrier in Ireland (Ruddock *et al.,* 2024)[11].

The successful implementation of the Biodiversity Management Plan would ensure that the construction of the proposed Wind farm will not significantly reduce the availability of suitable hen harrier habitats locally. In the event of a successful grant of permission for the proposed Wind farm, it is proposed to restore a significant amount of land for the benefit of hen harrier and to safeguard this land for the lifetime of the wind farm. This opportunity for the wind farm industry to fund the restoration of hen harrier habitat was highlighted in the most recent National Survey of Breeding Hen Harrier (2022) report. Section 4.6.7 states:

> *"There are opportunities for the wind energy industry to increase levels of land management certainty, and regulation/management of the activities within and surrounding windfarms (e.g. recreational users, dog walkers etc) and identify opportunities for the retention and restoration of habitats suitable for breeding (and wintering) hen harrier within and surrounding renewable energy developments..*

4.2.2.4 References

The DoHLGH rightly notes that the two key pieces of literature that inform the understanding of hen harrier interactions with turbines, and in particular, interactions relating to disturbance displacement are old papers, i.e. Pearce-Higgins *et al.*, (2009) and Ruddock & Whitfield (2007).

The DoHLGH speculate that the reported magnitude of effects may be outdated, as the turbines of the time in the older studies were smaller than modern turbines. The Pearce-Higgins paper relates primarily to foraging hen harrier while the Ruddock and Whitfield review summarises likely displacement distances (and suggests disturbance buffers) for hen harrier at breeding and resting sites. These two papers represent the best available information on their respective subjects. For example, a recent 2022 review[12] commissioned by NatureScot, noted the Ruddock & Whitfield (2007) disturbance buffer around breeding/resting sites in its summary of the best available information on the topic of disturbance in hen harrier. Similarly, the recent NPWS 2021[13] paper makes repeated reference to the Pearce-Higgins *et al.*, (2009) paper when discussing the displacement of (foraging) hen harrier. As relevant, these papers have informed the comprehensive impact assessment for hen harrier that is provided in Section 7.6.2.1 of the EIAR.

[11] *Ruddock, M., Wilson-Parr, R., Lusby, J., Connolly, F., J. Bailey, & O'Toole, L. (2024). The 2022 National Survey of breeding Hen Harrier in Ireland. Report prepared by Irish Raptor Study Group (IRSG), BirdWatch Ireland (BWI), Golden Eagle Trust (GET) for National Parks & Wildlife Service (NPWS). Irish Wildlife Manuals, No. 147. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.*

[12] *Goodship, N.M. and Furness, R.W. (MacArthur Green) Disturbance Distances Review (2022): An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283.*

[13] *NPWS, (2021). Hen Harrier Conservation and the Wind Energy Sector in Ireland. Supporting document to the Hen Harrier Threat Response Plan. National Parks and Wildlife Service, Department of Housing, local Government and Heritage.*

4.2.3 Biodiversity

The response to this section has been prepared by MKO Ecology.

4.2.3.1 Lesser Horseshoe Bat

The DoHLGH raised observations in relation to the assessment of lesser horseshoe bat (LHB).

In summary, the DoHLGH stated that it cannot be concluded that the Proposed Development would not have an adverse effect on the integrity of Danes Hole, Poulnalecka SAC, and that the Proposed Development would be in contravention of the CCDP. This is based on the following reasons/topics provided by the Department:

- **Topic 1:** The manual and static survey data upon which the EIAR and NIS depend under-represent LHB data.
- **Topic 2**: There will be a loss of linear habitat, including loss of bands of broadleaf edges for road widening, as well as forestry clearance. As such it is asserted that there will be a reduction in bat foraging and commuting habitat, resulting in a contravention of the Clare County Development Plan and potential for residual adverse effect on LHB SACs.

These topics are addressed below.

Topic 1: Bat Survey Effort

The submission from the DoHLGH begins by stating that the manual and static survey data, upon which the EIAR and NIS depend, under-represent LHB data.

It is stated that the use of vehicle-based transect surveys and static detectors have limited ranges when surveying for lesser horseshoe bats (LHB). As described in the dedicated Bat Report submitted as Appendix 6-2 to the EIAR, the bat survey methodology and assessment followed the most recent recognised industry best practice i.e. *Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation* (NatureScot 2021). This allowed for a robust approach to the surveys and baseline assessment undertaken in the bat impact assessment and the collision risk was fully assessed in accordance with best practice guidance.

Ground-level static detector surveys provide the core dataset informing the bat impact assessment. As outlined in NatureScot, other additional survey methods (e.g. transects or vantage point surveys) can be used to 'complement' the information gathered from static detectors, but their applicability is 'discretionary and site-specific'. Additionally, while the guidance recommends one year of surveys are carried out pre-construction, the 2022 surveys are supplemented by additional data derived from surveys undertaken on the site in 2021 in accordance with SNH (2019) Guidelines.

The static detector surveys in 2021 and 2022 achieved a good spatial spread of the site and it was noted that LHB were recorded at all ten detector locations in 2022. Twelve detectors were deployed in 2021, all of which also recorded LHB. To offset potential limitations in recording the quiet and directional lesser horseshoe calls, MKO employs omni-directional microphones. Two years of surveys were carried out, and the data collected were considered satisfactory to inform the assessment on all bat species. As outlined in Section 4.3 of Appendix 6-2 (Chapter 6: Biodiversity of the EIAR), *"A comprehensive suite of bat surveys was undertaken at the Proposed Development site. The surveys undertaken in 2022, in accordance with NatureScot and BCT Guidance, provide the information necessary to allow a complete, comprehensive and robust assessment of the potential impacts of the Proposed Development on bats receptors."* The information provided in the report and Biodiversity Chapter accurately and comprehensively describes the baseline environment; provides an accurate prediction of the likely effects of the Proposed Development; prescribes mitigation as necessary; and describes the predicted residual

impacts. The specialist studies, analysis and reporting have been undertaken in accordance with the appropriate guidelines. No limitations in the scope, scale or context of the assessment have been identified.

LHBs were found to be regularly utilising the site, which was assessed as having value for foraging and commuting bats. However, the assessment was also cognisant of the site consisting primarily of active plantation forestry which is subject to phased harvesting. It is acknowledged that while plantation forestry provides potential suitable commuting and foraging habitat, in the context of a wider environment presenting more diverse habitats, is likely less favourable for this species, which tends to favour deciduous woodland habitats and prefers mosaic landscapes. The data collected were interpreted within this context and found in line with this assessment. A comprehensive survey effort was carried out which provides the necessary baseline information to inform the impact assessment. LHB were recorded throughout the site and considered in detail in the EIAR. Consequently, no further surveys for LHB were considered necessary. A mitigation and monitoring plan, including bat buffers, pre-construction surveys and habitat enhancement areas specific to LHB, has been devised accordingly for the proposed development in line with NatureScot guidance to continue to monitor bat activity within the site and to ensure continued and enhanced habitat connectivity throughout the site. This adaptive operational monitoring plan to assess potential changes in bat activity post-construction can be adjusted as deemed necessary to ensure bats are safeguarded accordingly. Additionally, as LHB are low flying species with a preference for linear features to navigate through landscapes, they are considered to be a low-risk species for wind turbine collisions.

Driven transects provide supplementary information to the extensive seasonal static detector coverage. The value of these surveys needs to be interpreted in the context of the whole suite of surveys undertaken at the site. The comprehensive assessment of baseline activity undertaken at the site also involved a bat habitat appraisal, preliminary roost assessments and manual activity surveys.

As outlined in Section 2.2.2 of Appendix 6-2, "*Due to the nature of the site, manual surveys were driven to connect areas with different accesses. The driven transects followed the methodology described by Roche et al. (2012)".* Driven surveys were selected by surveyors as the most effective method to move across the large site and were undertaken in line with existing guidance. As outlined above, LHB were recorded throughout the site and have been fully considered in the impact assessment.

A new Ireland-specific guidance document, *Bat Survey, Assessment and Mitigation Guidelines for Onshore Wind Turbines in Ireland* (Bat Conservation Ireland, 2026), was published during preparation of this response, following completion of the baseline bat surveys for the Proposed Wind Farm. This guidance provides a consolidated national framework for bat survey, impact assessment and mitigation, building upon established best-practice guidance including NatureScot (2021) and Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2023). It introduces a more formalised and standardised approach in areas such as site risk categorisation, survey effort, quantitative interpretation of bat activity, and post-construction monitoring.

The survey scope and impact assessment presented in Appendix 6-2 of the EIAR (Bat Report) were undertaken in accordance with NatureScot (2021), with additional reference to NIEA (2021, amended 2024), and informed by Collins (2023), ensuring that recognised best practice was applied throughout. NatureScot guidance represented the applicable and widely recognised standard at the time the bat surveys were designed and completed. While the Bat Conservation Ireland (2026) guidance has been considered in preparing this response, its publication post-dates the baseline survey effort. However, the baseline data, survey effort and impact assessment are considered adequate, proportionate and technically robust for the Proposed Project.

Similarly, the proposed mitigation and monitoring measures, which have been designed in accordance with NatureScot guidance, are considered appropriate having regard to site conditions and the level of predicted risk. While post-consent monitoring requirements could, if necessary, be refined or expanded through planning conditions, this does not detract from the overall robustness or validity of the bat assessment.

Any divergence from the Bat Conservation Ireland (2026) guidance does not of itself render the assessment unsound, given the non-statutory nature of the document and the absence of formal regulatory endorsement. MKO considers that the assessment presented in Appendix 6-2 of the EIAR, underpinned by NatureScot guidance, is supported by a clear rationale, proportionate mitigation and monitoring, and remains sufficient to inform decision-making in respect of the Proposed Wind Farm.

Provided the Proposed Development is constructed and operated in line with the proposed mitigation and monitoring plan, no significant impacts on roosting, commuting and foraging bats are anticipated as a result of the Proposed Development.

Topic 2: Reduction of bat foraging and commuting habitat, potential contravention of the CCDP, and potential residual adverse effects on SAC populations

Concern was raised by the DoHLGH relating to the potential reduction of LHB foraging and commuting habitat, particularly as a result of proposed widening of narrow forestry roads, tracks, and the total felling of 9.42ha of forestry. The DAU outlined a potential reduction of LHB foraging habitat and habitat connectivity due to removal of willow/broadleaf edge at narrow forest roads. The loss of habitat is said to contravene policies set out within the Clare County Development Plan. Further, the DAU added that it "*cannot be concluded that proposed development will not have adverse effects on conservation objectives for LHB in Danes Hole, Poulnalecka SAC*".

The habitat within 2.5km of the SAC roosts is dominated by commercial forestry. The habitat modifications proposed are related to an already highly modified environment, which includes phased harvesting and blocks of felled woodland, forestry roads and fire breaks. Forestry will be felled to accommodate turbine hard-standings and bat buffers as well as new internal access roads and other infrastructure. There are limited upgrades to existing forestry tracks proposed within the 2.5km range. In addition, the forestry edge within the Study Area is predominantly conifer edge. Mature broadleaf trees lining the forestry edge along the forestry block in proximity of T6, which were identified as potential suitable features for bats and described in Appendix 6-2 (EIAR chapter 6), and located outside of the 2.5km range, will not be removed as part of the proposed development. The proposed new roads and creation of bat buffers will not sever existing corridors but have the potential to create additional linear habitat for foraging and commuting LHB. As the proposed new roads are not proposed to be illuminated, they are in fact expected to provide additional linear habitat within the site in what was once closed canopy plantation areas. Together with proposed buffers around turbines, the new roads are expected to provide new commuting and foraging routes through currently impassable forestry blocks.

As stated in Section 6.2.2.1.1 of the NIS, *Given the extensive area of habitat that will remain undisturbed throughout the site and the avoidance of the most significant areas of faunal habitat (i.e. natural hedgerows and scrub), no adverse effects with regard to loss of commuting and foraging habitat for any of the QI Lesser Horseshoe Bat roosts of Danes Hole, Poulnalecka SAC or Ratty River Cave SAC are anticipated.*

There will be some loss of small segments of hedgerow/ pruning over 5km away from the SAC roosts. These are associated with the southeastern internal access road and short sections of vegetation pruning required along the Turbine Delivery Route and Grid Connection Route. The Biodiversity Management Plan (BMP, Appendix 6-5 of the EIAR) details proposed measures including enhancement and creation of native linear habitat for LHB within the 2.5km foraging range of Danes Hole, Poulnalecka SAC. No evidence of roosting LHB was recorded within the Proposed Development site boundary. There is therefore no potential for residual adverse effect on LHB as a result of the Proposed Development.

The CCDP states that it is an objective of Clare County Council to:

- Promote the conservation of biodiversity through the protection of sites of biodiversity importance and wildlife corridors both within and between the designated sites and the wider Plan area.
- To ensure there is no net loss of potential LHB feeding habitats, treelines and hedgerows within 2.5km of known roosts.

As demonstrated in the discussion above, the Proposed Development is in compliance with the Plan given that there is no potential for residual adverse effects on the QI LHB population both from within and outside of the SAC. Further, as discussed above, there will be no net loss of potential foraging and linear habitats within 2.5km of the known roosts or throughout the rest of the Proposed Development site. As such, the Proposed Development is in compliance with theCCDP.

4.3 Fáilte Ireland

The response to this section has been prepared by MKO Planning and MKO Landscape.

Fáilte Ireland's (FI) observations in relation to the Wind Farm Site are cited as follows:

- Construction related impacts,
- Impacts arising from the operational stage of the development,
- Cumulative Impact

4.3.1 Construction Related Impacts

FI notes that temporary impacts arising from the construction of the windfarm such as increased traffic movement by heavy goods vehicles may have a short-term impact on tourists and other users of the local area. FI notes that these impacts can be mitigated by the implementation of appropriate construction management strategies. FI further notes that there is potential for impacts on the biodiversity and ecology of the area.

The Applicant notes FI's observations in relation to construction related impacts. All traffic related impacts have been fully addressed within Chapter 15, Material Assets of the EIAR and are further addressed in Section 3.5 below. The Applicant will ensure that all mitigation measures imposed by the Commission will be fully implemented, in the event that planning permission is granted. A final CEMP will also be submitted to and agreed with CCC and LCCC prior to commencement of the development.

All biodiversity and ecology related impacts are fully addressed throughout this submission response.

4.3.2 Impacts Arising from the Operational Stage of the Development

FI notes that the key impacts relating to the operational stage of the development that may affect tourism is in relation to visual impact, specifically impact on the Slieve Bernagh uplands and the 12 O' Clock Hills.

The Proposed Development includes provisions to ensure that the recreational amenity of 12 O'Clock Hills is maintained to the highest degree possible as well as improved in certain capacities where possible, for example by creating recreational access to previously inaccessible areas. The 12 O'Clock Hills area comprises an upland landscape which is currently used for recreational amenity and which is located within "Strategic Area" and "Acceptable in Principle" zoning for wind energy development as designated by the CCDP 2023-2029 and the CWES. Therefore, the 12 O'Clock Hills sits within a landscape envisaged for wind energy development in local planning policy and is also a locally valuable recreation resource. The majority of wind farms in Ireland have open access during the operational period and are extensively used for amenity purposes in particular walking and cycling. While there may be a perceived conflict between the proposed turbines and the recreational amenity of the 12 O'Clock Hills walking routes, in reality there is sufficient evidence that the amenity of recreational trails is not materially affected by the presence of turbines for the small portion of what are extensive walking trails within wind farm sites throughout the country.

The assessment of visual impact on the 12 O'Clock Hills amenity area is discussed and reported in the LVIA Section 14.7.3.3.3 (p.113-119) and the amenity area with proposed improvements is mapped in the LVIA Figure 14-25 (p.114). The overall visual effects to the amenities of 12 O'Clock Hills are reported (LVIA, p.119) as *"Moderate, with localised Significant visual effects occurring along the higher elevated parts of the route."* The overall rating of visual effects is based on the consideration of several mitigation measures incorporated to the wind farm design as well as favourable zoning of the land placement of the proposed turbines and the limited visibility from large parts of the walking route itself. Therefore, most of the impacts on 12 O'Clock Hills recreational area are predicted to be "Moderate." The predicted "Significant" impacts which will be highly localised to certain portions of the walking trail system, are discussed below.

Early-stage landscape capacity studies which informed the design of the Proposed Development focussed on the "*offset of impacts on local recreational amenities (12 O'Clock Hills)"* and this is reported in the LVIA Section 14.1.3 Mitigation by Design (p.4) as follows:

- *"New recreational amenities are proposed as part of the Proposed Development…to offset impacts upon locally valued recreational and scenic amenities around the 12 O'Clock Hills. The proposed construction of a new section of recreational walking trail and new landscape viewing decks will enable enjoyment of this landscape and new access to uninterrupted high quality scenic amenity."*

It is highlighted that the CCC submission,)p.19) indicates that, other than the concerns on visual impact from the recreational route, the *"proposed upgrade works are noted and generally welcome."*

The measures to offset impacts on 12 O"Clock Hills recreational area include the proposed construction of a new section of recreational walking trail, new landscape viewing decks to enable enjoyment of the landscape and allow new access to uninterrupted high quality scenic amenity, upgrades to an existing viewing area in the townland of Snaty, the addition of picnic benches and the installation of educational signage focussed on the landscape and its wider setting; the offsetting measures are detailed in the LVIA Section 14.1.3.4 (p.7) and LVIA Section 14.7.3.3.3 (p.113-119).

In terms of recreational impacts, a potential road closure up to 9 days may be required to ensure the safety of recreational users, as it would be unsafe to attempt use of trails and other amenities during the construction phase of that portion of the Proposed Development (i.e. Western Cluster of turbines comprising T01, T02 and T03). The LVIA Section 14.1.3.4 (p.8) outlines the maximum 9-day closure details as follows:

> *"The construction methodology for the Proposed Development ensures access to the peak of 12 O'Clock Hills (Knockanuarha) during the construction phase of the Proposed Development, with the exception of a maximum of 9 No. days (weather dependent) during which peak access will be closed while the proposed turbines of the Western Cluster are erected."*

In terms of localised "Significant" visual impacts, viewpoint VP12 – 12 O'Clock Hills (see *Volume 2 Photomontage Booklet*) was captured from a vantage point at the centre of the Wind Farm Site, located 224m south of proposed turbine T2, to represent the worst-case scenario of visual impact on views for recreational users of 12 O'Clock Hills. VP12 shows views in three directions from that point (Views 12A East, 12B Southwest and 12C North) to capture the effects of surrounding views affected primarily by proposed turbines T1, T2 and T3. Owing to the extremely close proximity of receptors represented by this viewpoint and the substantial magnitude of change warranted by proposed turbines in the foreground of views, the residual visual effects are predicted to be "Significant" for this relatively brief section of the trail system. The LVIA Section 14.1.3.4 (p.8) notes that, despite this anticipated level of predicted effects, the proposed amenity features offer an opportunity to improve and maintain the recreational function of the area:

> *"…the proposed design and construction of a new section of recreational walking trail and new viewing areas included as part of the Proposed Development will enable the continued*

experience, enjoyment and appreciation of landscapes and scenic amenity of equivalent quality in that area."

The LVIA demonstrates that every effort has been made in the design of the Proposed Development to ensure a balance between the commercial and recreational land uses for this upland area of Slieve Bernagh Uplands LCA-8 which is envisaged for wind energy development while also maintaining the current use of 12 O'Clock Hills as a place of high recreational amenity.

The visual impact assessment for VP12 reported in the *LVIA Appendix 14-3* indicates "mitigating" factors—factors which aid in reducing the overall impacts on visual amenity for receptors in this area. The mitigating factors include the strategic siting of the proposed turbines in a landscape envisaged for wind energy, the maintaining of expansive long-range views to the greatest degree possible from panoramic viewpoints, and the newly proposed recreational amenity features, reported as follows in the LVIA (*Appendix 14-3*, p.26):

- *"Turbines T2 and T1 are sited in a "Strategic Area" for wind energy development in the Co. Clare Wind Energy Strategy (Volume 6 of the CCDP 2023–2029). Turbine T3 is located approx. 35m from the border of the "Strategic Area", within an area designated as "Acceptable in Principle". The proposed turbines are therefore visible within an area of the landscape where it is envisioned for turbines to be seen, as guided by local planning policy.*
- *While the proposed turbines are seen within parts of the panoramic view, including long-range views to the north over the flat agricultural plain, the proposed turbines do not obstruct these views. Given that the three closest of the proposed turbines are seen in different directions from this viewpoint, with a large degree of visual separation in views, the expansive long-range views are still available from this location."*
- *The Proposed Development includes for upgrades to the amenities of another viewpoint and creation of a new viewing deck to offset effects on this viewpoint."*

4.3.3 Cumulative Impact

FI requests that the Commission fully considers the cumulative impact of the Wind Farm Site with other projects and proposals for Wind Farms.

The potential for cumulative effects of the Proposed Development with other wind energy developments within the 20km LVIA Study Area are comprehensively assessed and discussed in multiple sections and appendices of the LVIA which are supported by photomontage visualisations including other existing, permitted and proposed wind energy developments; these sections are listed and described in the LVIA *Appendix 14-1 Methodology* Section 1.6.4.3.

The LVIA Section 14.7.3.4 (p.128-133) presents extensive discussion of cumulative visual effects considering the potential for cumulative visual effects between the Proposed Development and 7 no. existing, permitted and proposed wind energy developments identified in the 20km LVIA Study Area. The discussion is supported by assessment of verified photomontage imagery. The conclusion of that section states that the extent of cumulative visual effects will be limited by the undulating and well-defined landform features of the wider area

As detailed above, a full Cumulative Impact Assessment was undertaken for the Wind Farm Site.
Please refer to Section 3.1.2 of this Response to Observations for full details

4.4 HSE

The response to this section has been prepared by MKO Planning.

The submission by the HSE primarily focuses on the effect of the Proposed Development on public health. At a general level, the EIAR is considered to have addressed the relevant items identified by the HSE in their submission at the scoping stage and follows the appropriate guidance.

The submission highlights the importance of population-health effects, with sensitive receptors defined by land use and notes the requirement to take account of emerging guidelines and recent publications, alongside existing statutory guidelines.

The primary concern of the HSE relates to potential noise impacts on public health and it places weight on more recent evidence and guidance, including the World Health Organisation (WHO) Environmental Noise Guidelines for the European Region (2018) (WHO 2018 guidelines) and the DWEGs as more appropriate guidance.

Comment

The observations of the HSE in relation to noise are addressed in the response by AWN, which is included at **Appendix 3**.

In summary, The WHO 2018 guidelines are not considered applicable for the assessment of environmental wind turbine noise. The assessment of wind turbine noise has been undertaken in accordance the applicable guidelines, namely the WEGs along with best practice guidance for the assessment of wind turbine noise.

It is also noted that HSE withdrew their 2017 position paper on wind farm noise in November 2025.

Accordingly, the wind turbine noise assessment methodology presented in the EIAR is in accordance with the relevant and applicable guidance framework and is considered to be consistent with current practice. Full details of guidance documents referenced for the assessment of operational wind turbine noise are presented in Section 12.3.2.5 of the EIAR.

Please refer to **Appendix 3** for further details.

4.5 Transport Infrastructure Ireland

A response to the issues raised by Transport Infrastructure Ireland (TII) is provided by Alan Lipscombe Traffic and Transport Consultants below.

Issue 1:

It is stated in TII submission that the Applicant has failed to submit Design Report to TII in accordance with TII Publications DN-GEO-03030.

Response:

A report in accordance with TII Publication DN-GEO-03030 was prepared and is discussed in Section 15.1.1.4 of the EIAR, where it was stated that the report was included as Appendix 15-4 of the EIAR, and also that it would be uploaded to the TII Departures Portal. It is confirmed that the report has been uploaded to the TII Departures Portal dated April 8th 2026.

Issue 2:

The Commission is advised that upon TII's review of the report material changes and alterations to the proposal may be required.

Response:

To date no material changes or alterations have been requested by TII. TII will be consulted further prior to construction of the Proposed Development.

Issue 3

The Applicant should consult with all road authorities in regards to haul routes and delivery timetables.

Response:

Clare County Council and Limerick County Council were consulted at the project scoping stage with details of the issues raised provided in Section 15.1.1.4 of the EIAR. A comprehensive swept path assessment of the turbine delivery route is included in section 15.1.8 of the EIAR with a capacity assessment for all stages of the construction and operational phases included in section 15.1.6. In section 15.1.11.6 of the EIAR a series of mitigation measures are set out, which includes a package of Traffic Management Measures, including a detailed delivery program that will be agreed between the Applicant and all relevant authorities (TII, Clare County Council and Limerick County Council) prior to construction.

Issue 4:

Any proposed works to the national road network should comply with TII Publications and be subject to Road Safety Audit as appropriate.

Response:

A Stage 1 Road Safety Audit was undertaken for the entire delivery route, including the proposed Temporary Transition Compound located on the N69. The Audit Report is summarised in Section 15.1.9 of the EIAR and was included for information as Appendix 15-5. All recommendations from the Stage 1 Road Safety will be adopted, as confirmed in the Feedback Form included in the Audit Report.

Issue 5:

TII have requested referral of all proposals agreed between road authorities and the Applicant impacting on national roads.

Response:

Details of all proposals that will impact on the National Road network will be forwarded to TII, including minor temporary measures detailed in section 15.1.8 of the EIAR with respect to the Turbine Delivery Route, and the report in accordance with TII Publication DN-GEO-03030 with respect to the Temporary Transition Compound proposed on the N69, which has been uploaded to the TII Departures Portal.

Issue 6:

Mitigation measures identified by the applicant shall be imposed as conditions, in the event that planning permission is granted.

Response:

The Applicant fully agrees with this point, and it will be fully complied with.

Issue 7:

Any damage caused to the pavement of existing national road shall be rectified in accordance with TII Pavement Standards.

Response:

The Applicant agrees with this proposed condition as set out in the mitigation measures included in section 15.1.11.6 of the EIAR, which includes the provision for pre and post construction road condition surveys and a commitment that all road surfaces will be re-instated to pre-development conditions.

Issue 8:

TII considers it critical that a full assessment of all structures on the national road network along the haul route is undertaken.

Response:

It is noted that while the Proposed Development involves the delivery of abnormally sized loads, there will be no abnormal weights with respect to permissible axle loads. Notwithstanding this, a structural survey will be undertaken at locations of the delivery route to be agreed with the various roads authorities prior to the construction of the Wind Farm Site.

5. RESPONSE TO LOCAL AUTHORITY OBSERVATIONS

5.1 Clare County Council

A submission was received on the application from Clare County Council (CCC), including the Chief Executive's Report, in accordance with the requirements of Section 37E(4) of the Act.

Although CCC have not recommended outright refusal of the application, they have raised a number of concerns in relation to the Wind Farm Site and their Observations can be grouped into the following items:

- Project Splitting,
- Visual Amenity,
- Noise,
- Road and Traffic Issues,
- Hen Harrier,
- Aviation.

Each of these items is addressed in detail below.

5.1.1 Project Splitting

CCC have queried the rationale for the requirement for separate planning applications for the Wind Farm Site and Oatfield Wind Farm and have raised concerns that the proposal would result in a piecemeal approach to the development of wider 'strategic' designated lands.

As detailed in Section 3.1.4.3, Oatfield Wind farm is an entirely separate project, which is being progressed independently by a different developer, under separate landowner agreements. Other than its geographical proximity, it bears no relation to the Knockshanvo Wind Farm.

It is reminded that each planning application submitted to a Planning Authority should be assessed on its merits and in line with the relevant planning policy and legislation at the time of submission which is relevant to the particular application in question.

5.1.2 Visual Amenity

5.1.2.1 Impacts on Visual Amenity

Distance of Perceived Visual Effects

It was suggested in a submission by Clare County Council that the proposal could "significantly alter" the landscape from a visual perspective given the height and scale of turbines and the potential cumulative context of wind energy developments in the area—meaning the number of wind farms within the same landscape setting, noting that "significant landscape and visual impact" would be felt both locally and over greater distances.

With respect to EPA (2022) significance of effects ratings, the LVIA of the Proposed Development concludes that no "Significant" landscape or visual effects are predicted beyond approximately 3km of

the proposed turbines; this is owing mainly to the undulating nature of topography and high degree of roadside screening from elements such as forestry, vegetation and built structure. The LVIA reports that the "Significant" visual effects which are likely to occur will be highly localised, only occurring for a very small number of residential receptors in very close proximity the proposed turbines and locally sensitive walking routes. This is supported by Table 5.2 of the EIAR Chapter 5 Population and Human Health, which reports that the landscape surrounding the Wind Farm Site has a significantly low population density compared to both the national figure and that of Co. Clare. The landscape where the Proposed Development is sited is sparsely settled and comprises primarily commercial forestry, thus impacts on visual and residential amenity arising from the Proposed Development are limited to a low number of receptors.

The LVIA conducts robust assessment of potential cumulative landscape and visual effects between the Proposed Development and 7 no. wind energy developments identified in the 20km LVIA Study Area– the assessments are detailed below in this response document, see below in Section 1.2.6 Cumulative Impacts of Wind Farms in SE Clare Region.

Results of the LVIA and factors of the Proposed Development wind farm design including mitigation measures to reduce the impacts on visual amenity are discussed below.

Mitigation by Design

Mitigation for the visual effects arising from a wind energy development can be achieved through design interventions during the iterative design process. In the case of the Proposed Development, several key mitigation measures were specifically incorporated into the project design to mitigate visual effects on residential receptors; these are reported in the LVIA Section 14.1.3 Mitigation by Design (LVIA, p.4) and include provisions of the wind farm design which ensure that:

(i) Best-practice guidance on good wind farm design was followed,

(ii) There are no "surrounding"** effects on local residential amenity,

(iii) Visual separation between turbine clusters is achieved.

**Note: In the context of LVIA and residential visual amenity, the term "surrounding effects" refers to the degree to which residential receptors may feel "surrounded" by developments in a cumulative context, where two or more wind farms are located in visual proximity to each other. In the case of the Proposed Development, this was a key focus of the assessment of effects on local residential receptors and cumulative effects and is discussed in detail in the LVIA Sections 14.7.3.3.4 (p.123) and 14.7.3.4 (p.128).

The mitigation measures ensuring best-practice guidance for good wind farm design reported in the LVIA (p.5) are as follows:

- *"Initial turbine layouts included 18 No. turbines within the viable landscape of the Proposed Development Site. Through the iterative design process, the number of proposed turbines was reduced by half, to 9 No. proposed turbines. Effects on the landscape and visual amenity were of primary consideration at an early stage and was a key factor** warranting a reduction of the number of proposed turbines on the Site.*

**Note: Landscape and visual amenity was among several factors considered which warranted a reduction of the number of turbines, including environmental, physical and residential restraints. A detailed constraints analysis is presented in Chapter 3 of the submitted EIAR: Reasonable Alternatives. The mitigation measures ensuring good wind farm design reported in the LVIA continue as follows:

- *The use of three separate turbine clusters balances the need to maximise the potential renewable energy output from this suitable landscape resource, whilst ensuring adequate setback and visual screening from key sensitive receptors;*

- *Siting of proposed turbines adheres to the minimum 500 m setback distance in the WEDGs (DoEHLG, 2006); and also, the 4-times-tip-height setback distance explicitly set out for residential visual amenity prescribed by the Draft Revised WEDGs (DoHPLG, 2019). The Proposed Development includes for a greater than 750m setback distance from residential receptors, a distance greater than 10m beyond the minimum recommendations (4 × Tip Height at 185 m = 740 m) in the WEDGs and Draft Revised WEDGs;*

- *The proposed turbines are generally seen clustered around a hilltop within views from the surroundings of the Wind Farm Site. This siting is aligned with the guidance on siting of wind energy developments in the WEDGs (DoEHLG, 2006, p.37);*

- *In general, the spatial extent of the proposed turbines seen within the existing views is appropriate relative to the scale of the hills in which the turbines are clustered around and within; in this regard, the proposed turbines are also aligned with the guidance on spatial extent and scale in the WEDGs (DoEHLG, 2006, p.40–41)."*

The mitigation measures ensuring no surrounding effects on local residential amenity are reported in the LVIA (p.7) as follows:

- *"Due to the narrow and undulating nature of the intervening valleys between the turbine clusters, no "Significant" effects are likely to occur on surrounding local residential amenity in these areas. Where views of the turbines are theoretically possible in multiple directions, these in reality are screened from view by intervening vegetation or topography;*

- *Owing to the orientation and positioning of residences relative to the proposed turbines, as well as intervening landforms and other above ground features of the landscape, it results in limited "Significant" impacts upon local residential visual amenity."*

The characteristics of the receiving landscape ensuring visual separation of turbine clusters are reported in the LVIA (p.7) as follows:

- *"As shown by all visualisations (photomontages and "photowires" [early-stage photomontages]), views in close proximity to the Wind Farm Site (within 3km of the proposed turbines) generally comprise only one or two turbine clusters in a similar direction (i.e. not surrounding the viewer); further, it is uncommon to experience views of all three turbine clusters at once, thereby reducing the turbine visibility as well as visual impact on local receptors;*

- *The collective visual impact of all three turbine clusters is limited to receptors in the wider landscape area where larger setback distances occur (generally >3km); further, the separate turbine clusters are generally well assimilated and well absorbed within the undulating upland landscape, in that the turbines are either seen as cluster or are contained to the highest elevated areas in view (this aligns with the guidance on siting of wind energy developments in the WEDGs (DoEHLG, 2006, p.37). In this regard, as noted previously, the spatial extent of the proposed turbines seen within views is appropriate relative to the scale of the hills in which the turbines are clustered around and within, thus the proposed turbines are also aligned with the guidance on spatial extent and scale in the WEDGs (DoEHLG, 2006, p.40–41)."*

Given Ireland's binding renewable energy targets which have been set by the State for on-shore renewable wind energy development, i.e., 9GW of onshore wind[14], wind turbines will form a component in the working landscape for the foreseeable future. The focus for visual impact assessment of wind energy developments is therefore on the distance, arrangement and location of the proposed turbines as well as the potential disruption to key scenic sensitivities, rather than a commonly misconceived focus merely on whether turbines are visible or not from a particular vantage point. The outcome of the visual impact assessment, with regards to the EPA (2022) definition of significance, is calibrated in the overall context of LVIA of wind energy developments in Ireland and what is acceptable in the context of emerging baseline trends and the acceptability of wind turbines within views as a result of national policy.

Over time, wind turbines have, and will become, a more familiar and accepted component of the Irish landscape, particularly in working rural contexts. Accordingly, their presence may not carry the same level of perceived visual intrusion as less common or incongruous forms of development. In this context, the calibration of visual impact significance reflects both the policy-driven imperative for renewable energy development and the evolving visual baseline in parts of the Irish landscape. While the visibility of turbines remains an important consideration, it does not in itself equate to significant visual impact.

Therefore, in the LVIA, the key factors of focus in the overall impact assessment on visual receptors in relation to photomontages are:

- The perceived scale of the turbines relative to the landscape as a result of setback distance,
- The number of turbines visible,
- The degree of visibility of turbines, e.g. are they fully or partially screened by above-ground features,
- The perceived horizontal extent of turbines, e.g. how wide of an extent of the field of view do the turbines occupy in terms of what is experienced by visual receptors, given the composition of turbines within both the 53.5-degree and 90-degree fields of view shown in the *Photomontage Booklet*,
- The overall visual coherence with regards to form and arrangement and how the turbines correspond to the landscape from a particular vantage point as per best practice siting and design guidance.

5.1.3 Noise

CCC have raised concern in respect of the noise generated by the Wind Farm Site and the adjoining proposed Oatfield Wind Farm and the implications for same on the residential amenities of the area.

A response to all noise related issues relating to the Wind Farm Site including those raised by CCC is provided by noise consultants, AWN which is included as a separate response at **Appendix 2**.

As outlined throughout this document, a comprehensive Cumulative Impact Assessment was undertaken for the Proposed Wind Farm, which considered all relevant wind farms, including the adjoining proposed Oatfield Wind Farm, and assessed all cumulative effects, including noise.

[14] *Department of Climate Energy and the Environment (2025) Climate Action Plan 2025*

5.1.4 Road and Traffic Issues

A response to road and traffic issues raised by CCC is provided by Alan Lipscombe Traffic and Transport Consultants below.

Issue 1:

Concern is raised over capacity of regional roads to accommodate the construction traffic associated with the Proposed Development.

Response:

A detailed assessment of the impacts of construction traffic forecast to be generated during the construction of the Proposed Development is included in Section 15.1.6 of the EIAR.

It is acknowledged in the EIAR that the R463 just north of Limerick City is forecast to operate over link capacity in the proposed construction year of 2028. It is also forecast that the additional traffic generated during the construction of the Proposed Development will have only a slight and temporary impact on this section of the road network, increasing the traffic flows by a maximum of 9% of the 9 days that the concrete foundations are poured reducing to a maximum of 3% points during the remainder of the construction period (as shown in Table 15-25). It is noted that this assessment is based on a precautionary scenario, where all construction traffic will be delivered from the direction of Limerick City. The effects of the stone and concrete being delivered from the direction of the R466 to the east of Broadford, and the R465 concrete and stone from the north of Broadford was also assessed, as also summarised in Table 15-25. For these scenarios it is established that the R466 and R463 will operate well within capacity for all construction scenarios.

The capacity of the proposed access junction on the R465 was tested with the results set out in Section 15.1.6.4 of the EIAR. It is established that the junction is forecast to operate well within capacity for all construction scenarios. Once operational it is forecast that the development will generate just 2 – 3 trips per week.

Issue 2:

CCC have stated that it is unclear as to why there are two separate haulage routes are for the Knockshanvo Wind Farm and the Oatfield Wind Farm. A single route would be preferable.

Response:

As noted in Section 3.1.4.3 and Section 5.1.1, Oatfield Wind farm is an entirely separate project, which is being progressed independently by a different developer, under separate landowner agreements. Other than its geographical proximity, it bears no relation to the Knockshanvo Wind Farm.

Issue 3:

CCC have raised concern over traffic generated by two construction sites (Knockshanvo and Oatfield Wind Farms) in operation at the same time.

Response:

An assessment of the potential cumulative impacts during the construction of the proposed Knockshanvo Wind Farm and the proposed Oatfield Wind Farms is set out in Section 15.1.11.5 of the EIAR. It is established that in the event that both developments are constructed concurrently, the potential for cumulative impacts between the Proposed Development and the proposed Oatfield Wind farm is relatively high, with the severity of the effects being slight to moderate, and temporary.

Should both developments be granted planning permission by ACP, the Applicant confirms they will engage with all relevant parties in order to ensure there is minimal overlap between the construction periods for the two separate developments.

Issue 4:

CCC have raised concerns that the removal of trees associated with the construction of both Knockshanvo and Oatfield Wind Farm will contribute to construction traffic impacts.

Response:

It is confirmed that construction traffic associated with tree felling has been included in the traffic assessment. It is estimated that approximately 1,030 loads of trees will be removed from the site via the proposed site entrance on the R465, as set out in Table 15-6 of the EIAR. It is noted that, in the absence of the Proposed Development, felling would still occur via the existing forestry accesses on the local road network, so the assessment is based on a precautionary scenario.

5.1.5 Hen Harrier

CCC have raised concerns in relation to the efficacy of biodiversity enhancement measures which are proposed and concerns over the implementation and success of these measures. This is addressed in detail in Section 4.2.2.3 of this Response to Observations.

Cumulative Impact Assessment

The adequacy of the cumulative assessment with respect to Hen Harrier was also queried by Clare County Council.

In response, it is noted that a detailed species-specific cumulative assessment is provided in Section 7.11 of the EIAR; no significant effects are identified for any key ornithological receptor, including hen harrier.

As outlined in Section 7.11.2.1 of the EIAR, in undertaking the cumulative assessment, consideration was given to the predicted impacts from surrounding development for shared key ornithological receptors and their habitats. An assessment was also provided on the relative ecological value of the habitats present. Taking into consideration the reported effects (from EIS/EIARs) at other wind farms, the ecological value of the habitats present and the predicted effects of the Proposed Project and any proposed offsetting enhancement plans, no significant residual additive, antagonistic or synergistic effects were identified.

Table 6 below presents an update to the status of the wind farms in table 7-12 of the EIAR. As indicated by the added emphasis, Fahybeg and Lackereagh have been updated from 'Proposed' to 'Permitted' and Knockballynameath Turbine has been updated from 'Permitted' to 'Operational'.

Table 6 Wind Farms Within 25km of the development site.

Wind Farm	Status	No. of Turbines	Separation Distance of Nearest Turbines
Oatfield	Proposed	11	500m
Fahybeg	**Permitted**	8	4.3km
Ballycar	Proposed	12	4.8km
Lackareagh	**Permitted**	7	5km

Wind Farm	Status	No. of Turbines	Separation Distance of Nearest Turbines
Carrownagowan	Permitted	19	5.7km
Knockballynameath	**Operational**	1	8.9km
Vistaken	Operational	1	12.1km
Total Existing		2	
Total Permitted		34	
Total Proposed		23	

The analysis below corroborates the findings of the cumulative assessment as submitted in the EIAR and provides a further "strategic level" assessment of potential cumulative effects as requested by the Planning Authority.

An analysis was undertaken that focused on the upland area surrounding the Proposed Development for three key reasons:

- Firstly, the Proposed Development is sited in these uplands;
- Secondly, it is largely one coherent ecological unit that contains a contiguous mosaic of similar habitats that likely contain similar species (e.g. hen harrier) as occurred within the Proposed Development;
- And finally, this is where the proposed/permitted turbines mentioned by the Planning Authority are located.

It is noted (**Table 6**) that there are two single existing turbines located to the south and outside of these uplands (as per **Figure 3** below). Owing to their scale and their separation distance from the Proposed Development/the surrounding uplands, cumulative impacts are predicted to be effectively zero. As such, they are not considered further.

A GIS mapping exercise was undertaken that aimed to quantify the amount of land within the uplands that is unlikely to be significantly impacted by the presence of turbines. Impacts were predicted to be restricted to the area near a turbine. Near a turbine was defined as within 500m. This 500m distance was chosen as Pearce-Higgins *et al.* (2009) identified, for a range of species, significant avoidance of turbines between 250m and 500m. It therefore follows that significant effects are unlikely at distances greater than 500m.

It is noted that in the specific case of hen harrier, using a 500m radius of turbines for the cumulative habitat loss assessment is highly conservative, as foraging hen harrier have the potential to experience significant avoidance of turbines to a distance of 250m (Pearce-Higgins et al., 2009).

In undertaking the GIS mapping exercise, it was found that by including lands above 100m in elevation[15] a reasonable approximation of the upland area where the wind farms mentioned by the Planning Authority occurred, namely: the permitted Carrownagowan, permitted Fahy Beg, permitted Lackareagh,

[15] *Additionally, O'Donoghue (2004) described the modern landscape of the Irish breeding hen harrier as upland, typically above 100m above sea level.*

proposed Oatfield, proposed Knockshanvo and proposed Ballycar wind farms. Please see Figure 3 for details. The GIS exercise provided the following results.

The total upland area (>100m elevation) is 17,218ha, and of this, 1,638ha[16] (9.5%) is within 500m of a permitted turbine. It is noted that there are no existing turbines within this upland area. The two main land uses in these uplands are forestry and pastoral agriculture which is the 'open habitat' mentioned below. There is the following breakdown of forestry and open habitat.

- The total area of forestry = 6,682ha (38.8% of the total upland area)
    - Forestry greater than 500m from permitted and all proposed turbines (incl. Knockshanvo Wind Farm) = 4,726ha (or 70.7% of the forestry)[17].
- The total area of open habitat = 10,536ha (61.2% of the total upland area)
    - Open area greater than 500m from permitted and all proposed turbines (incl. Knockshanvo Wind Farm) is 9,441ha[18] (or 89.3% of the open habitat).

Having undertaken the above analysis of the available area within the surrounding uplands, the following is of note:

- As forestry and agriculture (i.e. open habitat) make up the vast majority of the total 17,218ha within the uplands, it is reasonable to conclude that the relative quality/suitability of these habitats is likely to have the greatest (positive or negative) influence on the local avian community.
- There is currently a low density of permitted turbines in these uplands (9.5% of the uplands), the addition of the Proposed Development would not significantly alter that situation (as per **Figure 3**).

It is noted in the scenario of Grant for the Proposed Development, these upland habitats would then also include large areas of enhancement lands managed for the benefit of local birds and in particular hen harrier. This is of note as not just the quantity, but also the quality of the available habitat is key in maintaining a region's carrying capacity.

[16] *Permitted Carrownagowan = 930ha, permitted Fahy Beg (within upland area) = 324 ha, permitted Lackareagh 384ha*
[17] *Permitted Carrownagowan = 785ha, permitted Fahy Beg (within upland area) = 95 ha, permitted Lackareagh = 127ha, proposed Oatfield and proposed Knockshanvo combined = 817ha, proposed Ballycar = 132ha*
[18] *Permitted Carrownagowan = 145ha, permitted Fahy Beg (within upland area) = 229 ha, permitted Lackareagh = 257ha, proposed Oatfield and proposed Knockshanvo combined= 271ha, proposed Ballycar = 223ha*

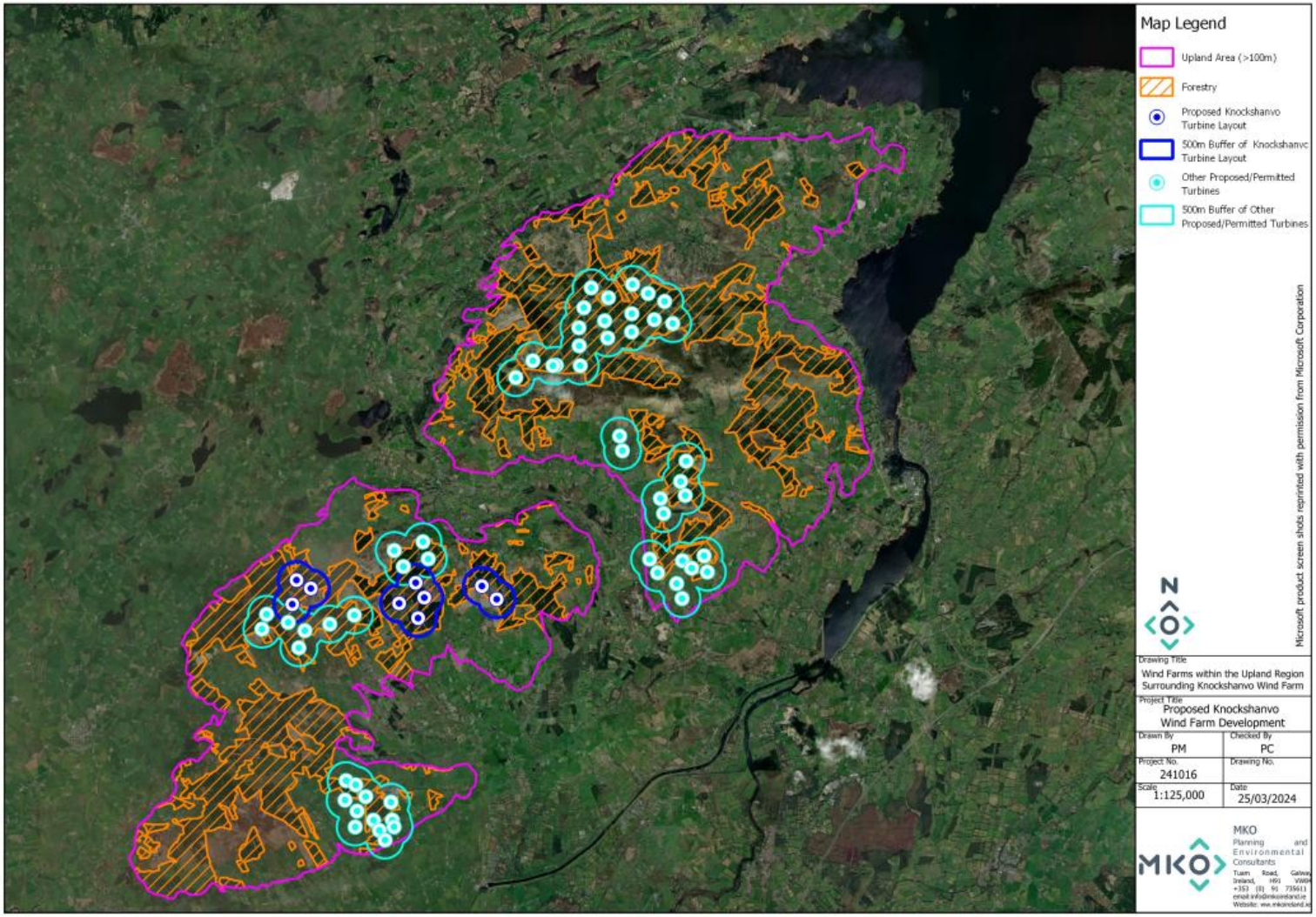

Figure 3 Wind Farms within the uplands region surrounding Knockshanvo Wind Farm.

As outlined in Section 7.11.2.1.2 of the EIAR, the proposed development includes a comprehensive compensation and enhancement plan, which has been specifically designed to ensure residual impacts of no greater than low are predicted. It is proposed to provide both compensation and enhancement habitat to offset the impacts on hen harrier. A key component of the measures proposed is the creation of new habitat through the permanent deforestation and restoration of the underlying peatland. The habitat loss will be compensated with new habitat at a ratio of near 1:1. Additionally, enhancement lands are also proposed to improve the productivity of the surrounding habitat for foraging hen harrier. This sustainable development of the proposed wind farm site ensures the continuing availability of suitable habitat for hen harrier locally. Accordingly, the proposed development is not predicted to contribute to a significant cumulative effect for hen harrier. For further detailed discussion, please see Section 7.11 of the EIAR.

In relation to the wind farm industry, the Hen Harrier Threat Response Plan 2024-2028 states:

> *"While wind energy production is identified as one of the key pressures on the species, wind energy development is also, more generally, a key part of the global and national response to alleviating climate change. Biodiversity and climate change commitments have equal standing, and creating opportunities to achieve both, without compromising each other, is critical, particularly as biodiversity can assist in climate change mitigation and adaptation."*

The successful implementation of the compensation and enhancement plan would ensure the construction of the Wind Farm Site will not significantly reduce the availability of suitable hen harrier habitats locally. It further follows that the successful implementation of the proposed comprehensive compensation and enhancement plan ensures the proposed Wind Farm Site avoids any future contribution to a significant cumulative effect, particularly for the hen harrier of the local uplands.

In summary, no significant cumulative effects are predicted.

5.1.6 Aviation

CCC have noted the proximity of the Wind Farm Site to both Shannon Airport and the radar equipment at Woodcock Hill. CCC have requested that the impacts of the Wind Farm Site on the airport operations and associated infrastructure needs to be carefully considered, in this regard CCC have requested that any comments from the Shannon Airport Authority and/or the Irish Aviation Authority are taken into consideration by the Commission.

A response to the submission received by Shannon Airport as well as AirNav Ireland is included at Section 4.1 of this Response to Observations.

5.2 Limerick City & County Council

There was a submission received on the application from Limerick City and County Council (LCCC), including the Director Generals Report, in accordance with the requirements of Section 37E(5) of the Act.

This submission focuses solely on the component of the project located within the functional area of LCCC, i.e. the proposed Temporary Transition Compound (TTC), which is required to transfer turbine components arriving into Shannon Foynes Port to the Proposed Wind Farm. LCCC have raised concerns in relation to the following items

- Roads and Traffic
- Ecology

These are addressed separately below.

5.2.1 Roads and Traffic

A response to road and traffic issues raised by LCCC is provided by Alan Lipscombe Traffic and Transport Consultants below.

Issue 1:

LCCC consider that the proposed Temporary Transition Compound (TTC) for the delivery of turbine blades at the northern side of the N69 is not in line with Policy TR O39 of the Limerick Development Plan 2022-2028 and the Spatial Planning and National Road Guidelines for Planning Authorities. LCCC Roads Department does not consider it suitable in the interest of safety due to the speed of approaching vehicles on the stretch of road alignment.

Response:

The Applicant acknowledges the guidelines for new access junctions at locations on the national road network as set out in the Spatial Planning and National Roads Guidelines for Planning Authorities and those set out in Objective TR039 of the Limerick Development Plan 2022 – 2028.

The proposed TTC is temporary only and will be used for the purpose of the transfer of turbine blades from standard superwing carrier trailers, that will leave Foynes Port, onto blade adapters, that will negotiate the route through Limerick City, in order to minimise the impacts on the TDR. All movements made into and out of the site by abnormally sized loads will be made during the night with transient traffic management measures provided by a Garda escort. This will be done for 27 blades that will travel in convoys of 5 vehicles, with one convoy accessing and leaving the transition zone on 6 separate nights.

During the construction of the TTC it is proposed that there will be approximately 27 truck movements accessing and exiting the site per day (approximately 3 in and 3 out per hour) for 85 days. These movements will be managed on site by means of temporary traffic management measures, including signs and flagmen, as set out in Section 15.1.11.6 of this EIAR. This will include a request to TII / LC&CC for a temporary speed reduction for the 85 day construction period.

During the construction period access to the TTC will be closed at all times outside the hours of construction or nighttime operation. On the completion of the construction of the Proposed Development the TTC will be closed permanently and the existing boundary re-instated.

The access to the proposed TTC has been the subject of DN-GEO-03030 Design Phase Procedure for Road Safety Improvement Schemes, Urban Renewal Schemes and Local Improvement Schemes, and an independent Stage 1 Road Safety Audit, both in accordance with TII Guidelines.

As the temporary access to the TTC is located on the N69 National Road at a location where a 100kph speed limit applies, the Spatial Planning and National Roads Guidelines for Planning Authorities (NRA, now TII, January 2012), apply to the proposed TTC accesses. The following policies of the guidelines must therefore be considered:

> *'2.5 Required Development Plan Policy on Access to National Roads Lands adjoining National Roads to which speed limits greater than 60 km/h apply: - The policy of the planning authority will be to avoid the creation of any additional access point from new development or the generation of increased traffic from existing accesses to national roads to which speed limits greater than 60 km/h apply. This provision applies to all categories of development, including individual houses in rural areas, regardless of the housing circumstances of the applicant.'*

It is also, however, noted that Policy 2.6 of the guidelines sets out exceptional circumstances where a less restrictive approach may be applied:

'in the case of developments of national and regional strategic importance which by their nature are most appropriately located outside urban areas, and where the locations concerned have specific characteristics that make them particularly suitable for the developments proposed.'

The guidelines provide a list of matters to be accounted for when considering whether exceptional circumstances apply, of which it is considered the following apply to the proposed TTC on the N69:

1. **The nature of proposed development and the volume of traffic to be generated by it:–** It is established that the traffic volumes that will be generated during the operation of the TTC will be relatively low and will occur on a temporary basis only. Once the construction of the TTC and the delivery of the abnormally sized loads is complete, the site will be restored to its existing state and there will be no traffic generated by the site.

2. **Any implications for the safety, capacity and efficient operation of national Roads:** It is noted that all potential issues raised in the Road Safety Audit (Appendix 15-5) are addressed to the satisfaction of the Audit Team, as summarised in Section 15.1.9 of the EIAR.

3. **The suitability of the location compared to alternative locations:** It is considered that this location is the optimum location on the N69 to provide the TTC required for the delivery of the abnormally sized loads associated with the Proposed Development.

It is noted that the DN-GEO-03030 is included as Appendix 15-4 of the EIAR, and the Road Safety Audit as Appendix 15-5.

In conclusion, the temporary transition compound will be in place solely for the duration of turbine blade delivery to the Wind Farm Site and will take place at night under Garda escort. Following the completion of construction, the TTC will be closed by means of fencing, and the land and boundary treatments will be restored.

Policy TR 039 pertains specifically to *'new direct access point from a development'*, rather than the proposed temporary access which as set out above will be in place solely for the duration of turbine blade delivery to the Wind Farm Site, it is therefore considered that there is no contravention of Objective TR039 of the Limerick Development Plan 2022 – 2028 as it is not directly applicable to the TTC.

There is also precedent set by the Commission to permit planning applications for wind farms which include direct site access onto a national road including Derringlough Wind Farm (Case reference: PA19.306706), Derryadd Wind Farm (Case reference: PA14.303592) and Inchamore Wind Farm (Case reference: PL08.317889). It is therefore concluded that the use of this temporary access will have no material impact on the current or future capacity of the road network and will not compromise the safety of the N69 during the construction phase.

Issue 2:

The Mid West National Road Design Office did not receive any correspondence from the Applicant.

Response:

It is noted that bath LCCC and TII were included in the project scoping exercise conducted by MKO in October 2023. Furthermore a meeting was held between the Applicant, MKO and LCCC on 9th April, 2024, to specifically discuss issues relating to the TTC, as set out in Section 15.1.1.4 of the EIAR.

5.2.2 Ecology

The submission by LCC referred to a lack of detail in the EIAR in relation to the TTC at the N69 at Court, Kildimo, Co. Limerick and that the reports do not mention species records for this hectad.

Desktop studies and a field survey were conducted on the temporary compound and informed the assessment on bats. The results of the desktop study in relation to bats in proximity of the temporary compound have been presented in Appendix 6-2, Section 3.1.1. The results of the bat habitat appraisals carried out at the temporary compound in January 2024 have been presented in Section 3.2 of Appendix 6-2 of the EIAR.

Desktop studies in relation to habitats and other fauna were also carried out on the temporary transition compound and informed the impact assessment in relation to designated sites and local biodiversity. Ecological walkover surveys of the temporary compound site were undertaken in accordance with NRA Guidelines on Ecological Surveying Techniques for Protected Flora and Fauna on National Road Schemes (NRA, 2009). Details of fauna surveys are provided in Section 6.3.2 of the EIAR and full details of the habitats within the temporary compound site are provided in Appendix 6-1. A habitat map of the temporary compound area is also provided in Figure 3-3 of the Appendix. The desktop and field study data of the temporary compound site gathered is such that a full assessment was achieved.

Furthermore, site-specific mitigation, specific to the temporary compound area in Co. Limerick, have been provided in Section 6.4.2.1.5 and Section 6.4.2.2.2 (Table 6-16 and Table 6-18) of the EIAR Biodiversity Chapter, which includes the following:

- The loss of treelines for the temporary transition compound located to the south of the Shannon Estuary will be mitigated post-construction through replanting of trees lost during restoration of the compound site. It is proposed to replant the trees being lost in their original locations. Advanced nursery stock will be planted in order to reduce the amount of time required to reach the age class of the trees being removed. The species to be planted will comprise poplar, willow, or hawthorn, or another native species that is found locally and which is suited to local soil conditions and to be being planted as advanced stock.

Considering the scale of the works proposed at the site, and the nature of the habitats at the site, it is deemed that a full and commensurate assessment was carried out.

6. SUMMARY

This document has been prepared to address the observations made by Third-Party observers and Statutory Consultees in respect of the Wind Farm application for the proposed Knockshanvo Wind Farm development. The information constitutes a full and robust response to all matters raised and the information provided here will directly assist the Commission in their ongoing consideration of the planning application.

In relation to the Climate Act, Consenting Authorities must meaningfully engage with national climate objectives when exercising their functions, including decision-making and must also demonstrate how those functions have been carried out in a manner consistent with, in so far as practicable, national climate objectives. Taking these legal duties into account, the Commission is required to attribute significant weight to national climate policy and the delivery of renewable energy infrastructure, such as the Proposed Wind Farm. Having regard to these matters, it is considered that the Commission can exercise its planning judgement to determine the application in a manner which is consistent with the achievement of national and EU policy goals, in accordance with its statutory duty under Section 15 of the Climate Act.

As discussed in Section 3 of this Response to Observations, there were 120 no. submissions received on the application from Third Party Observers. Section 3 outlines the common themes identified within the Third-Party submissions and the relevant areas of expertise within the project team assigned to address each theme.

Section 4 of this Report deals directly with observations by Statutory Consultees, namely AirNav Ireland and Shannon Airport, the DAU, Fáilte Ireland, HSE and Transport Infrastructure Ireland. Each Statutory Body is dealt with under a separate heading, and all relevant items are addressed in full, with appendices referenced where appropriate.

In relation to Aviation concerns, a combined response to observations made by both AirNav Ireland and Shannon Airport Authority DAC has been provided due to the similarity in the issues raised across both submissions. A Response Statement to all the matters raised has been prepared on behalf of the Applicant by Ai Bridges, provided as Appendix 5 of this Response to Observations. Considering the very complex and technical nature of the aviation matters under consideration, the Applicant would welcome the opportunity to participate in an Oral Hearing to present and discuss these matters of concern raised by AirNav and SAA in detail to facilitate an informed assessment of the mitigation strategies proposed.

Section 5 of this report deals directly with observations by the local authorities in which the Proposed Development is located, Clare County Council and Limerick City and County Council. Both Local Authorities are dealt with under separate heading, and all relevant items are addressed in full, with appendices referenced where appropriate.

To combat the effects of climate change, Ireland must decarbonise its economy by 2050. There is no “silver bullet” to do so. It will take several individual renewable energy projects to decarbonise the Irish economy. The scale of the challenge we face to decarbonise the Irish economy is enormous, but the climate change implications of not doing so are even greater. There is no other way to decarbonise a modern society except through renewable energy projects such as the Proposed Development.

Having regard to the key points set out in this Response to Observations, it is respectfully requested that the Commission consider the relevant international, national and regional planning context that applies to the Wind Farm Site, and grants permission for the application as proposed.