Planning and Environmental Consultants

Appendix 3 - EIAR Addendum and Appendices

Laurclavagh Renewable Energy Development

Planning and Environmental Consultants

EIAR Addendum Report

Laurclavagh Renewable Energy Development, Co. Galway

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INTRODUCTION

Background

Laurclavagh Ltd. applied to An Coimisiún Pleanála (the Commission) for planning permission to construct a renewable energy development which will comprise 8 No. wind turbines, and associated infrastructure in the townland of Laurclavagh, and adjacent townlands, near Tuam in Co. Galway. The application was submitted to the Commission on the 15th March 2024 and was assigned case reference ACP-319307-07.

On the 28th of May 2024 a request was issued by the Commission to respond to Third Party and Statutory Bodies Observations and the local authority report (Galway County Council) respectively in relation to the live Strategic Infrastructure Development (SID) planning application before them for consideration. The Response to Submission following the Commission's request was submitted on the 9th of August 2024.

On the 5th of March 2025, the applicant was requested by the Commission to provide further information on a number of points, in accordance with section 37F (1) (c) of the Planning and Development Act 2000, as amended. The Commission has requested, as part of the Response Format and Timeframe of the ACP Further Information (FI) Request, that all points of further information be addressed by way of an addendum to the previously submitted Environmental Impact Assessment Report (hereafter referred to as "the EIAR") as relevant, and should clearly indicate where changes to the original documents are made.

Purpose of this EIAR Addendum Report

As a result of this request, this Addendum Report (hereafter referred to as "the Report") has been prepared in order to update the EIAR and associated appendices, where appropriate, in order to allow the Commission to complete a robust environmental impact assessment of the Proposed Project.

In the preparation of this Report, the project team, as detailed in Chapter 1 Section 1.8 of the previously submitted EIAR, have considered the extent to which each chapter of the EIAR, where relevant and associated appendices are required to be updated, in particular paying regard to:

- The Commission's Further Information Request
- The submissions on the Laurclavagh Renewable Energy Development application files (ABP-319307-07)
- Updates to the baseline environment;
- Updates to surveys and assessments;
- Updates to regulations, policy and guidance.

The Report should be read as an appendix to the overall Response to Further Information Document. The Report presents relevant updates or changes to the previously submitted EIAR and EIAR Appendices where appropriate. For Chapters where the Project team have confirmed that no relevant updates or changes are necessary, this is outlined under the relevant chapter heading of the Report.

Similarly, the Commission have requested a revised NIS (here after referred to as "the revised NIS"). The revised NIS is included as Appendix 4 of the FIR, and it includes the AA Screening Report, and associated appendices have been updated where relevant and are titled Revised NIS Appendices.

The Commission has also requested a standalone Traffic and Transport Impact Assessment document. This is included as Appendix 5 of the FIR.

All references to these documents in the table below clearly state where a reference is to a document as submitted, or an updated document which has been provided to The Commission as part of this FIR.

Structure and Content of the Report

The purpose of the Report is to document the current state of the environment in the vicinity of the Proposed Project and to quantify the likely significant effects of the Proposed Project in response to the Commission's FI Request, on the environment and in accordance with the requirements of the EIA Directive, as amended.

The Report follows the same structure as the previously submitted EIAR to facilitate review of relevant changes or updates to the following:

1. *Introduction*
2. *Background to the Proposed Project*
3. *Considerations of Reasonable Alternatives*
4. *Description of the Proposed Project*
5. *Population and Human Health*
6. *Biodiversity (excluding Birds)*
7. *Birds*
8. *Land, Soils and Geology*
9. *Water*
10. *Air Quality*
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13. *Cultural Heritage*
14. *Landscape and Visual*
15. *Material Assets (including Traffic and Transport, Telecommunications and Aviation)*
16. *Major Accidents and Natural Disasters*
17. *Interactions of the Foregoing*
18. *Schedule of Mitigation Measures*

It is not intended that the Report replaces the submitted EIAR, rather the Report is read in conjunction with the submitted EIAR. Only the sections of the EIAR where relevant changes or updates have been identified are provided below. For example, in Chapter 1 of the EIAR: *Introduction*, there is only one section that requires relevant changes be identified, *Section 1.5: Need for the Proposed Project*, and so only Section 1.5 is identified below with relevant text for certain elements of that section. For ease of reference, the relevant section numbers from the EIAR are retained in this document.

Where best practice with respect to Chapter structure has evolved since the original submission (March 2024), to ensure maximum clarity and transparency the whole chapter has been updated, to include removal of text in red strikethrough and insertion of text in green are outlined. This approach has been taken with respect to Chapter 11: Climate.

Additional figures have been provided in the Report where necessary. Figures provided in the EIAR and the Report should be viewed as for illustrative purposes only. For any design related figures, the Planning Drawings which accompany the Planning Application and Addendum Planning drawings which accompany the Response to Further Information (RFI) should be consulted.

References to Proposed Project

As identified in Section 1.1.1 in Chapter 1 of the EIAR, for the purposes of the EIAR and the Report:

- The 'Proposed Wind Farm' relates to the 8 no. turbines and supporting infrastructure (detailed description provided in Chapter 4 of this EIAR), and it is the subject of this planning application under Section 37E of the Planning and Development Act 2000, as amended.
- The 'Proposed Grid Connection' relates to the on-site 110kV substation and temporary construction compound and underground cabling connection to the existing Cloon 110kV Substation. The Proposed Grid Connection will facilitate the connection of the Proposed Wind Farm to the national electricity grid and will be subject of a separate planning application under Section 182A of the Planning and Development Act 2000, as amended.
- The 'Proposed Project' for the purposes of this EIAR comprises the Proposed Wind Farm and the Proposed Grid Connection, all of which are located within the EIAR Study Boundary (the 'Site') measuring approximately 944 hectares.

1. INTRODUCTION

1.5 Need for the Proposed Development

1.5.1 Overview

In July 2021, the Climate Action and Low Carbon Development (Amendment) Act 2021 was signed into law, committing Ireland to reach a legally binding target of net-zero emissions no later than 2050, and a cut of 51% by 2030 (compared to 2018 levels). On this pathway to decarbonisation, the Government published the National Climate Action Plan 2025 (CAP25)[1] reaffirming the renewable electricity target of 80% by 2030, without compromising security of energy supply. The Proposed Project has the potential to be operational by 2030.

In May 2025, the EPA published *'Ireland's Greenhouse Gas Emissions Projections 2024-2055'*[2] which includes an assessment of Ireland's progress towards achieving its emission reduction targets out to 2030 set under the EU Effort Sharing Regulation (ESR). This report states that Ireland is not on track to meet the 51% emissions reduction target by 2030 (as compared to 2018 levels) based on most up to date EPA projections, which include many of Climate Action Plan (CAP) 2024 measures (CAP 2025 is not specifically referenced in this report as it had yet to be published during the preparation phase of the 2024-2055 projections).

The critical need for renewable energy is underscored by European legislation. RED III[3] contains a presumption in favour of renewable projects being in the '*overriding public interest and serving public health and safety*'. This presumption was introduced prior to the enactment of RED III in the Council Regulation (EU) 2022/2577 (laying down a framework to accelerate the deployment of renewable energy) detailed below in Section 1.5.2. The prioritisation of renewable energy projects in European law has been acknowledged by the Irish judicial system, most recently in the Carrownagowan Wind Farm judgement ([2024] IEHC 549), the Toole II judgment ([2024] IEHC 610) and in particular the Coolglass Wind Farm judgement ([2025] IEHC 1) which emphasises the importance of national climate and renewable energy policy when assessing renewable energy projects.

In November 2024, the World Meteorological Organisation (WMO) published the State of the Global Climate 2024 Report.[4] The report provides a summary on the state of the climate indicators in 2024 with sections on key climate indicators, extreme events and impacts. The key messages in the report include:

- Greenhouse gases reached record observed levels in 2023. Real time data indicate that they continued to rise in 2024.
- January – September 2024 global mean surface air temperature was 1.54 ± 0.13°C above the pre-industrial average.
- Glacier mass loss from 2021/2022 to 2023/2024 represents the most negative three-year glacier mass balance on record, and seven of the ten most negative annual glacier mass balances since 1950 have occurred since 2016.
- The strong 2023/2024 El Niño followed three consecutive years of La Niña from late 2020 to early 2023.

[1] *Department of Environment, Climate and Communications (2025) Climate Action Plan 2025*
[2] *EPA (2025) Ireland's Greenhouse Gas Emissions Projections 2024-2055*
[3] *Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652.*
[4] *World Meteorological Organisation (2025) State of the Global Climate 2024* <https://library.wmo.int/records/item/69455-state-of-the-global-climate-2024>

- El Niño conditions were established by mid-2023, became strong by the end of 2023 and dissipated by the second quarter of 2024
- Extreme weather continued to lead to severe socio-economic impacts. Extreme heat affected many parts of the world.
- Food security, population displacement and impacts on vulnerable populations continue to be of mounting concern in 2024, with weather and climate hazards exacerbating the situation in many parts of the world.

There has been a substantial worldwide energy transition, with renewable capacity additions increasing by nearly 60% from 2022, totalling 565 gigawatts (GW).[5] This growth represents the highest rate observed in the past two decades, signalling a significant momentum toward achieving the clean energy goal set at the United Nations Framework Convention on Climate Change (UNFCCC) 28th Conference of the Parties (COP28) meeting in 2023, and reiterated at the 29th Conference of the Parties (COP29) in Azerbaijan in 2024, to triple renewable energy capacity globally to 11,000 GW by 2030. Considering existing policies and market conditions, the International Energy Agency (IEA) predicts that there will be approximately 5,500GW of new renewable capacity becoming operational by 2030. This implies that global renewable capacity additions will continue to increase every year, reaching almost 940GW annually by 2030 – 70% more than the record level achieved last year. Solar PV and wind together account for 95% of all renewable capacity growth through the end of this decade due to their growing economic attractiveness in almost all countries.

The recent joint publication of WMO and International Renewable Energy Agency on Climate-driven Global Renewable Energy Potential Resources and Energy Demand in 2023[6] underscores the inherent links between renewable energy resources and weather and climate conditions. It calls for better integration of climate variability considerations into energy resource operation, management, and planning to enhance effectiveness and sustainability in these regions

The Coolglass judgment in the High Court delivered on 10th January 2025, provides clarity on the obligations imposed on public bodies under section 15 of the Climate Act (*Coolglass Wind Farm Limited v An Bord Pleanála [2025] IEHC 1*).

Mr Justice Humphreys undertook a detailed consideration of the interpretation of section 15 of the Climate Act and concluded that:

> *"...all vectors of interpretation point strongly in the same direction – the need for an imperative reading of s. 15(1) in line with what it says, namely that the board and any other relevant body is required to act in conformity with the climate plans and objectives set out in the subsection unless it is impracticable to do so....*
>
> *That does not mean allowing an application which is prohibited by law. That wouldn't be practicable apart from anything else. But it does mean exercising discretionary and evaluative powers in whatever way is most likely to be consistent with the relevant plans and objectives.*

As part of Mr Justice Humphrey's consideration of the interpretation of section 15 of the Climate Act, he states in his judgement that *"an immediate end to business as usual is a precondition for planetary survival*".

In summary, section 15 of the Climate Act requires the Commission to engage in its own independent consideration of the impact of a proposed development on the State achieving its

[5] *IEA (2024), Renewables 2023, IEA, Paris <https://www.iea.org/reports/renewables-2023>*
[6] *International Renewable Energy Agency + WMO (2024) 2023 Year in Review: Climate-driven Global Renewable Energy Potential Resources and Energy Demand <https://wmo.int/publication-series/2023-year-review-climate-driven-global-renewable-energy-potential-resources-and-energy-demand>*

climate targets, and to exercise its discretion in a manner which supports the achievement of those targets.

It should be noted that on the 20th of May 2025, the Supreme Court granted the Commission leave to appeal the High Court's decision in the Coolglass case. The case recently concluded, and the appeal judgment will be due in the coming period.

1.5.1.1 Climate Change and Greenhouse Gas Emissions

In May 2025, the EPA[7] reported, for the year 2023, that the energy sector contributed to 14.3% of Ireland's total emissions. The latest EPA projections show that currently implemented policies and measures (WEM) will result in Ireland achieving a total greenhouse gas emission reduction of 8.4% on 2005 levels by 2030, significantly short of Irelands 2030 target under the EU Effort Sharing Regulation (ESR), i.e., 42% reduction of emissions compared to 2005 levels by 2030, and also lower than the 9% reduction projected in the 2024 report. If policies and measures in the higher ambition (WAM) scenario are implemented, EPA projections show that Ireland can achieve a reduction of 26% by 2030. The EPA projections show that agriculture and transport emissions form the majority of ESR emissions; combined they represent 59.2% and 63.2% of emissions in 2023 (latest inventory data) and 2030 (projected), respectively. Decarbonisation of power generation is a key measure, not only in the energy sector, but for other energy intensive sectors, such as transport and agriculture, whose activities result in high levels of greenhouse gas emissions.

The '*National Energy Projections 2024*[8], published annually by the Sustainable Energy Authority of Ireland (SEAI), state that in 2022, 87% of all energy used in Ireland was from fossil fuels, 12% from renewable sources and the remainder from others such as waste and electricity imports. By 2030, fossil fuels could still provide most of Ireland's energy, ranging from 70% in the WEM scenario to 62% in the most ambitious WAM scenario. The deployment of renewables needs to outpace the growth of energy demand for the absolute reductions in greenhouse gas emissions that are required to be met. The SEAI National Energy Projections state that there was a notable reduction in greenhouse gas emissions from the electricity sector in 2023. This reduction in fossil fuel use was primarily driven by an increase in electricity imports with 2023 seeing a record level of electricity net imports. This trend had increased further in 2024, where the level of net imports in the first half of 2024 had already exceeded all of 2023. Consequently, the sectoral emissions ceiling for electricity for the first carbon budget period (2021-2025) will be much closer to being achieved than previously projected. However, it is still projected that by the end of the second budget period (2026-2030), the total exceedance in the electricity sector is projected to be 6.8MtCO_2eq, or 11%, and 5.2MtCO_2eq, or 9%, in the WEM and WAM scenarios, respectively.

CAP25[9] was published on the 15th of April 2025 by the Department of the Environment, Climate and Communications (DECC). Following on from Climate Action Plans 2019, 2021, 2023, and 2024, CAP25 sets out the roadmap to deliver on Ireland's climate ambition. It aligns with the legally binding economy-wide carbon budgets and sectoral ceilings that were agreed by Government in July 2022 following the Climate Action and Low Carbon Development (Amendment) Act 2021, which commits Ireland to a legally binding target of net-zero greenhouse gas emissions no later than 2050, and the reduction of 51% by 2030 mentioned above. CAP25 sets out an ambitious course of action over the coming years to address the impacts which climate may have on Irelands environment, society, economic and natural resources. CAP25 clearly recognises that Ireland must significantly step up its commitments to tackle climate disruption. CAP25 reidentifies the need to increase the share of electricity demand generated from renewable sources by up to 80% where achievable and cost

[7] *Ireland's Greenhouse Gas Emission Projections 2024-2055 (May 2025)* < Ireland's Greenhouse Gas Emissions Projections 2024-2055 | Environmental Protection Agency >
[8] *SEAI National Energy Projections 2024 Report.* <https://www.seai.ie/sites/default/files/publications/National-Energy-Projections-Report-2024.pdf>
[9] *Government of Ireland (2025) Climate Action Plan 2025* <https://www.gov.ie/en/department-of-the-environment-climate-and-communications/publications/climate-action-plan-2025/>

effective, without compromising security of electricity supply and a need for 9GW of onshore wind generation. In 2023, Ireland had 4.74GW of installed wind capacity, up 4.5% on the previous year; the SEAI provisional estimate for installed wind capacity in 2024 was 4.85GW, based on EirGrid data to the end of August, and ESB-Networks data to the end of September.[10] As of April 2025, there were 6.4GW of wind energy capacity installed on the island of Ireland; Of this, 4.9GW was installed in the Republic of Ireland.[11] When all data from 2024 is recorded an updated carbon intensity factor for the Irish national grid will be published.

CAP25 presents clear and unequivocal support for the provision of additional renewable energy generation and presents yet further policy support for increased wind energy.

CAP25 sets out the following targets for electricity generation and transmission:

- Share of electricity demand generated from renewable sources to up to 80% where achievable and cost effective, without compromising security of electricity supply;
  - Onshore Wind Capacity: up to 9GW
  - Offshore Wind Capacity: 5GW (minimum)
  - Solar PV Capacity: 8GW
- Ensure that 20-30% of system demand is flexible by 2030;
- Ensure electricity generation grid connection policies and regular rounds of connection offers which facilitate timely connecting of renewables, provides a locational signal and supports flexible technologies.

It is estimated that the Proposed Project, with an installed capacity of 56MW will result in the net displacement of approximately 35,077 tonnes of carbon dioxide equivalent (CO_2e) per annum. The carbon offsets resulting from the Proposed Project are described in detail in Chapter 11 Climate, and further detailed in Section 11.5.3 of Appendix 11-2a Climate Chapter Addendum.

1.5.2 Energy Security

In December 2024 the SEAI published their '*Energy in Ireland 2024 Report*'[12] which states that in 2023, 44.3% of the electricity generated indigenously in Ireland came from gas, with renewables accounting for a further 40.7%. Coal, oil, non-renewable wastes (NRW), and peat accounted for the remainder of electricity generation in Ireland. The overall renewable energy share for gross final energy consumption for 2023 was 14.1%. 2023 had the lowest energy-related emissions of any year in the last quarter century, except for 2020 which was heavily influenced by the COVID-19 lockdowns. The SEAI Energy in Ireland 2024 report states that energy-related emissions were down 8.3% from 2022 levels in 2023 and the carbon intensity of the national grid was down to 253.7 gCO2/kWh, which is the lowest carbon intensity value ever reached in Ireland. The latest provisional value for the carbon intensity of the national grid from the SEAI is 204.3 gCO2/kWh[13].

1.5.4 Increasing Energy Consumption

As detailed above, CAP25 reaffirms the need for 9GW of onshore wind generation in order for Ireland to meet its 2030 targets. CAP25 further identified that the revised National Planning Framework[14] includes policy support for the development and upgrading of electricity grid

[10] *SEAI (December 2024) Energy in Ireland 2024 Report <https://www.seai.ie/sites/default/files/publications/energy-in-ireland-2024.pdf>*
[11] *EirGrid, https://www.eirgrid.ie/grid/system-and-renewable-data-reports*
[12] *Sustainable Energy Authority Ireland (2024) Energy in Ireland – 2024 Report*
[13] *SEAI (September 2025) Website: Conversion Factors. Available at: Conversion Factors | SEAI Statistics | SEAI (Last Accessed 03/09/2025)*
[14] *Department of Housing, Local Government and Heritage (2025) Draft Revision of National Planning Framework <https://www.gov.ie/en/department-of-housing-local-government-and-heritage/press-releases/draft-revision-of-national-planning-framework-open-for-public-consultation/>*

infrastructure, the delivery of renewable electricity generation capacity, and the introduction of regional renewable electricity capacity allocations for each of the three Regional Assemblies by 2030. In accordance with the relevant National Policy Objectives, Regional Assemblies and Local Authorities must plan for sufficient wind and solar energy development in order to achieve the targeted regional renewable electricity capacity allocations outlined in the draft National Planning Framework, taking into account factors influencing delivery including attrition rates and changes to energised capacity levels, in addition to current installed energised capacity.[15] In their '*All Island Adequacy Assessment 2025-2034* (March 2025)[16], EirGrid estimate that installed capacity of wind generation is set to increase to at least 11.2 GW between onshore and offshore capacity as Ireland endeavours to meet its renewable targets in 2030 and beyond.

1.7 Structure and Content of the EIAR

1.7.2 Description of Likely Significant Effects and Impacts

As stated in Section 1.6 of Chapter 1 of the EIAR, the EIA is the assessment carried out by the competent authority, which includes an examination that identifies, describes and assesses in an appropriate manner, in the light of each individual case and in accordance with Articles 4 to 11 of the Environmental Impact Assessment Directive, the direct and indirect significant effects of the Proposed Project on the following:

a) *population and human health*
b) *biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC*
c) *land, soil, water, air and climate*
d) *material assets, cultural heritage and the landscape*
e) *the interaction between the factors referred to in points (a) to (d)*

The EIAR submitted by the applicant provides the relevant environmental information to enable the EIA to be carried out by the competent authority. The information to be contained in the EIAR is prescribed Article 5 of the revised EIA Directive described in Section 1.2 above.

Indirect Effects, as stated in Section 1.7 of the EIAR, are defined by the *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports'* (EPA, May 2022), hereafter referred to as 'the EPA Guidelines (2022)' as

> *"Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway"*

Both direct and indirect effects have been assessed throughout the EIAR based on the source-pathway-receptor model.

Throughout the EIAR, the likely significant direct and indirect effects related to the Proposed Project have been identified and described in accordance with all of the guidance documents and legislation as identified in Section 1.1.1 of Chapter 1 of the EIAR, including the EPA Guidelines. Direct and indirect effects were considered as part of the EIAR, as detailed in Chapter 1 of the EIAR at both the pre-mitigation and post-mitigation assessment of potential effects, and considered as part of the statement of residual effects of the Proposed Project.

Where the potential for likely significant indirect effects was identified in the EIAR, these effects were robustly considered and assessed. Specifically, likely significant indirect effects were considered in

[15] *Ibid.*
[16] *EirGrid & SONI (2025). All-Island Adequacy Assessment 2025-2034. Available at: https://cms.eirgrid.ie/sites/default/files/publications/AIRAA-2025-2034.pdf*

Chapter 5: Population and Human Health, Chapter 8: Land, Soils and Geology, Chapter 9: Water and Chapter 13: Cultural Heritage

2. BACKGROUND TO THE PROPOSED PROJECT

2.1 Introduction

Chapter 2, Background and Policy has been reviewed with regard to the proposed amendments as outlined in Section 1.1 of the Report.

This section of the Report should be read in conjunction with Chapter 2 Background and Policy of the EIAR and is appended to the Response to Further Information document. Any updates in response to the Further Information Request which have been deemed relevant to background and policy, as described in Chapter 2 of the EIAR, are identified, described and assessed in the Report.

2.2 Climate Change Policy and Targets

The World Meteorological Organisation's published their *'State of the Global Climate Report'* on the 19th of March 2025, according to the report:

- The global mean near-surface temperature in 2024 was 1.55 °C ± 0.13 °C above the pre-industrial 1850-1900 average.
- 2024 was the warmest year in the 175-year observational record, surpassing the previous warmest year, 2023 at 1.45 °C ± 0.12 °C above the pre-industrial 1850–1900 average.
- Each of the past 10 years, 2015-2024 were individually the ten warmest years on record for global mean temperature.
- Ocean heat content reached the highest level in 2024, the highest level in the 65-year observational record, surpassing the previous highest level in 2023.
- A new record for ocean heat content has been set each year, over the past 8 years.
- Over the past two decades, 2005-2024, the rate of ocean warming was more than twice that observed between 1960-2005.
- In 2024, the global mean sea level reached a record high in the satellite record (since 1993)
- In the past 10 years, 2015-2024, the rate of global mean sea-level rise was more than twice that observed between the first decade of the satellite record (1993-2002).
- The 18 lowest Arctic sea-ice extent minima all occurred in the past 18 years as per the satellite record.

In Ireland, extreme weather and climate events driven by global warming and climate change are also having major impacts. According to MET Eireann's Annual Climate Statement for 2024, the year 2023 was the warmest year on record. Seven of the top ten warmest years have occurred since 2005, with 2024 being the fourth warmest year on record.

The approval of the Proposed Wind Farm will continue to support Ireland's ambition to reduce reliance on imported fossil fuels for electricity generation, which will in turn reduce the amount of greenhouse gases (GHGs) being emitted into the atmosphere, limiting global warming.

2.2.1 International Climate Policy

COP29 Azerbaijan

COP29 took place in Baku, Azerbaijan between the 11th and 22nd of November 2024. There was a central focus on climate financing with agreements being reached on tripling finance to developing countries to help them protect their people and economies from climate-related disasters and also sharing the benefits of the boom in renewable energy. Key actions arising from COP29 include:

- Launch of the COP29 Global Energy Storage and Grids Pledge which commits signatories to a collective goal of deploying 1,500GW of energy storage globally by 2030.
- COP29 Green Energy Pledge: Green Energy Zones and Corridors which promotes the connection of green energy zones and corridors to communities in need through the development of intraregional and interregional interconnected electricity grids.
- Call to action for an equitable and renewable energy transition and increased renewable energy capacity globally.

Progress was also made on carbon markets and how they will operate under the Paris Agreement. Article 6 of the Paris Agreement allows countries to trade carbon credits, which are produced through reducing GHG emissions, to support other countries to meet their climate goals. Country-to-country trading and a carbon crediting mechanism have been made fully operational through agreements at COP29.

Renewable Energy Directive

In November 2023, a revision of the Renewable Energy Directive[17] (RED III), came into force. RED III increases the EU wide renewable energy target from 32% set under the previous revision of the directive to at least 42.5%, with an ambition to reach 45% by 2030. The increase was proposed under the publication of REPowerEU plan in May 2022. The Directive also introduces specific targets for Member States in the industry, transport, and building (district heating and cooling) sectors.

Under Article 15c of RED III, EU member states must identify 'Renewables Acceleration Areas' of where projects will undergo a simplified and fast-track procedure. RED III defines the timeframes for the permit-granting procedure. In Renewables Acceleration Areas, the permit-granting procedure shall not exceed 12 months for renewable energy projects and outside renewables acceleration areas the permit-granting procedure shall not exceed two years.

Central to REDIII is the presumption that renewable energy development must be considered to be in the overriding public interest when addressing competing interests under the Habitats Directive (92/43/EEC), Birds Directive (2009/147/EEC) and the Water Framework Directive (2000/60/EC). The recognition of renewable energy projects being in the *'overriding public interest'* was originally introduced under Article 3(1) of emergency Regulation 2022/2577 of 22nd December 2022 named *'laying down a framework to accelerate the deployment of renewable energy'* in response to REPowerEU which found that the permitting process is the biggest bottleneck for deploying wind at scale, with approximately 80 GW of wind power capacity stuck in permitting procedures across Europe.

Article 16f of RED III states:

'By 21 February 2024, until climate neutrality is achieved, Member States shall ensure that, in the permit-granting procedure, the planning, construction and operation of renewable energy plants, the connection of such plants to the grid, the related grid itself, and storage assets are presumed as being

[17] *Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (recast)*

in the overriding public interest and serving public health and safety when balancing legal interests in individual cases for the purposes of Article 6(4) and Article 16(1), point (c), of Directive 92/43/EEC, Article 4(7) of Directive 2000/60/EC and Article 9(1), point (a), of Directive 2009/147/EC.'

There is an 18-month period to transpose most of the directive's provisions into national law ending on the 1st of July 2025, with a shorter deadline of July 2024 for some of the provisions related to permitting for renewables. In September 2024, the EU Commission opened infringement proceedings against Ireland for failures in relation to the transposition of permitting procedures. On the 17th of July 2025, the EU decided to send a 'reasoned opinion', a formal request to comply with EU law, giving Ireland two months to respond and take the necessary measures to complete the transposition. The provisions of RED III were transposed into national law in August 2025.

2.2.1.2 Project Compliance with International Policy

The Proposed Project is considered to be fully in accordance with the international COP29 policy outlined above. The Proposed Project supports the key actions arising from COP29 by continuing to generate renewable energy and contributing to an increased global renewable energy capacity.

The latest revision of the Renewable Energy Directive (RED III) introduced a binding EU-wide target for overall RES of at least 42.5% by 2030 and requires Member States to set their national contributions to the EU-wide target. In accordance with RED III and the revised RES target, the Department of the Environment, Climate and Communications (DECC) have published an updated National Energy and Climate Plan (NECP) 2021-2030 in July 2024. The updated NECP committed to achieving a 43% share of renewable energy in total energy consumption by 2030. In the trajectories set out in the updated NECP, it states that Ireland's proposed trajectory will not be in line with the desired trajectory set out in the Governance Regulation (Regulation 2018/1999).

2.2.2 National Climate Policy

Programme for Government – Securing Ireland's Future (January 2025)

The Programme for Government 2025 – Securing Ireland's Future (January 2025) places specific emphasis on climate change, recognising that time is critical in addressing the climate crisis. The Programme states that the Government is committed to taking *"decisive action to radically reduce our reliance on fossil fuels and to achieve a 51% reduction in emissions from 2018 to 2030, and to achieving net-zero emissions no later than 2050".*

With regard to renewable energy generation, the Programme notes that the Government is committed to the rapid decarbonisation of the energy sector. The Programme states the Government's ongoing support and commitment to "*achieving 80% of Ireland's electricity generation from renewable sources by 2030"* and to delivering 9GW of onshore wind by 2030.

Climate Action Plan 2025

The Climate Action Plan 2025 (CAP25) represents the third statutory update to Ireland's climate roadmap under the Climate Act. Building on the foundations laid by previous plans, CAP25 refines and strengthens the strategies necessary to deliver Ireland's legally binding carbon budgets and sectoral emissions ceilings. It sets out a clear trajectory to reduce GHG emissions by 51% by 2030 and to achieve climate neutrality no later than 2050.

A cornerstone of CAP25 is the decarbonisation of Ireland's electricity system through a substantial increase in renewable energy generation. The plan reaffirms ambitious targets for renewable electricity share which includes 80% by 2030, and 50% by 2025. This is to be achieved through the accelerated

deployment of onshore wind (6GW by 2025; 9GW by 2030), offshore wind (5GW by 2030), and solar energy (up to 5GW by 2025; 8GW by 2030).

The Proposed Project will contribute to the current installed capacity of 5GW for onshore wind energy, contributing to the achievement of 80% renewable energy and the delivery of 9GW of onshore wind by 2030.

2.2.2.2 Project Compliance with National Climate Policy

The Proposed Wind Farm of 8 no. wind turbines and associated infrastructure is considered to align with National Policy. The development of the Proposed Project aligns with the Programme for Government as it will continue to contribute to the current installed capacity of 5GW for onshore wind energy, contributing to the achievement of 80% renewable energy and the delivery of 9GW of onshore wind by 2030. Subsequently, the Proposed Project will continue to support the Government's commitment to reducing reliance on fossil fuels and achieving net-zero by 2050.

The Proposed Project will contribute to the current installed capacity of 5GW for onshore wind energy, contributing to the achievement of 80% renewable energy and the delivery of 9GW of onshore wind by 2030. The Proposed Project will also continue to offset Ireland's reliance on imported fossil fuels for electricity generation and contribute to energy security by generating indigenous renewable wind energy.

2.3 Renewable Energy Policy and Targets

Ireland's Greenhouse Gas Emissions Projections 2024 – 2055 (May 2025)

The Environmental Protection Agency (EPA) publish Ireland's Greenhouse Gas Emission Projections and at the time of writing, the most recent report, 'Ireland's Greenhouse Gas Emissions Projections 2024–2055' was published in May 2025. The report includes an assessment of Ireland's progress towards achieving its emission reduction targets out to 2055 set out under the EU emission reduction targets as set out under the Effort Sharing Regulation.

The EPA has produced two scenarios in preparing greenhouse gas emissions projections to 2055, a "With Existing Measures" (WEM) scenario and a "With Additional Measures" (WAM) scenario. These scenarios forecast Irelands greenhouse gas emissions in different ways. The WEM scenario assumes that no additional policies and measures, beyond those already in place by the end of 2023. This is the cut off point for which the latest national greenhouse gas emission inventory data is available, known as the 'base year' for projections. The WAM scenario has a higher level of ambition and includes government policies and measures to reduce emissions such as those in Ireland's Climate Action Plan 2024.

The EPA Emission Projections Update notes the following key trends:

- Ireland is not on track to meet the 51 per cent emissions reduction target (by 2030 compared to 2018) based on these projections which include most 2024 Climate Action Plan measures.
- Emissions from the Energy Industries sector are projected to decrease by between 59 and 68 per cent over the period 2022 to 2030. Renewable energy generation at the end of the decade is projected to range from 69 to 80 per cent of electricity generation as a result of a projected rapid expansion in wind energy and other renewables.
- Sectoral emissions ceilings for 2030 are projected to be exceeded by the Buildings, Electricity, Industry and Transport sectors; and met by the sector 'Other'.
- Budget period 1 (2021-2025) of 295 Mt CO2eq is projected to be exceeded by between 8 to 12 Mt CO2eq. Budget period 2 (2026-2030) of 200 Mt CO2eq is also expected to be

exceeded by a significant margin of 77 to 114 Mt CO2eq (with carryover from Budget period 1).

As decarbonising electricity generation will have a significant positive contribution in achieving Ireland's emissions it is clear that additional renewable energy production such as that of the Proposed Project must be encouraged and supported if carbon saving targets are to be met.

Ireland's Climate Change Assessment (January 2024)

In January 2024, the EPA published Irelands Climate Change Assessment (ICCA). This assessment provides a comprehensive overview and breakdown of the state of knowledge around key aspects of climate change with a focus on Ireland. The ICCA report is presented in four volumes.

- Volume 1: Climate Science – Ireland in a Changing World
- Volume 2: Achieving Climate Neutrality in 2050
- Volume 3: Being Prepared for Irelands Future
- Volume 3: Realising the Benefits of Transition and Transformation

The ICCA Synthesis Report states that having peaked in 2001, Irelands greenhouse gas emissions have reduced in all sectors except agriculture. However, Ireland currently emits more greenhouse gases per person than the EU average. The report goes on to state that there has been an identified gap in policy that indicates that Ireland will not meet its statutory greenhouse gas emission targets. Achieving net zero carbon dioxide emissions by 2050 requires significant and unprecedented changes to Ireland's energy system. Policies tailored to suit different stages of technology development are critical for achieving a net zero energy system. Established technologies, such as wind energy, solar photovoltaics and bioenergy will be key in meeting short-term emission reduction targets (i.e. 2030), whereas offshore wind infrastructure is expected to be the backbone of future energy systems. This can only be achieved with appropriate support schemes, regulation and investments for synergistic growth of offshore wind and other renewable technologies.

There are well-established 'no-regret options' that need to happen now, which can get Ireland most of the way to net zero carbon dioxide emissions. Beyond that, there are 'future energy choices' relating to the scale and magnitude of technologies that will assist in achieving Ireland statutory climate targets. Ireland's no-regret options are demand reduction (e.g. through energy efficiency and reduced consumption), electrification (e.g. electric vehicles and heat pumps), deployment of market-ready renewables (e.g. wind energy and solar photovoltaics) and low-carbon heating options (e.g. district heating); Irelands future choices include hydrogen, carbon capture and storage, nuclear energy and electro-fuels. Renewable energy can increasingly provide our future energy needs but will need to be complemented with carbon dioxide removals to achieve a net zero energy system in hard-to-abate sectors.'

The Climate Change Advisory Council Electricity Sectoral Review 2025

The Climate Advisory Council published its annual review in April 2025; it outlines detailed observations and recommendations for the Electricity sector in Ireland. This review emphasises the urgent need for Ireland to accelerate its transition to renewable energy to meet its 2030 electricity capacity targets and adhere to sectoral emissions ceilings. The Climate Change Advisory Council states:

> *"Ireland needs to reduce and ultimately prevent emissions of greenhouse gases. to stay within the agreed carbon budget, the Electricity sector needs to achieve the largest reduction in sectoral emissions of all sectors: a 75% decrease by 2030 compared with 2018."*

Key observations in relation to Renewable Electricity are outlined below:

- *While 1.6 GW of onshore wind (0.7 GW) and solar (ca 0.9 GW) renewable projects received planning permission during 2024, only an additional 0.5 GW (0.2 GW onshore wind and 0.3 GW solar) of new utility-scale renewable capacity was connected, which is significantly below the 1.8 GW annual average increase in capacity that is required to meet 2030 targets.*

- *Dispatch-down is the practice of deliberately reducing renewable generation due to grid limitations. In 2024, the dispatch-down energy from wind resources was 1,266 GWh (10.1% of the total available wind energy) and 39 GWh from solar resources (5.3% of the total available solar energy).*

- *In addition to the 0.3 GW of grid-scale solar capacity connected in 2024, there has been a significant increase in small-scale renewable generation, comprising mainly domestic rooftop solar photovoltaic panels, with a total of 0.5 GW connected by the end of 2024 (ESB Networks, personal communication, February 2025)*

2.4 Strategic Planning Policy Context

2.4.2 National Policy

Revised National Planning Framework (2025)

In April 2025, the Government agreed to the publication of the National Planning Framework First Revision (First Revision NPF) for public consultation. The revision reflects changes to Government policy that have taken place since the initial publication of the NPF six years ago, such as climate transition.

The Revised NPF provides an updated projection for the population of Ireland, with the population expected to increase to 6.1 million by 2040. This population growth will place further demand on both the built and natural environment, and subsequently, the services required to meet said demands.

There is an increased emphasis on the importance of the renewable energy development and infrastructure needed to support this. Chapter 9 of the First Revision NPF acknowledges that the "*accelerated delivery of the additional renewable energy generation is... essential for Ireland to meet its climate targets.*" A number of new or amended National Policy Objectives (NPOs) have been proposed in order to achieve this objective as listed below:

- **National Policy Objective 69-** *Reduce our carbon footprint by integrating climate action into the planning system in support of national targets for climate policy mitigation and adaptation objectives, as well as targets for greenhouse gas emissions reductions as expressed in the most recently adopted carbon budgets.*
- **National Policy Objective 70-** *Promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a climate neutral economy by 2050.*
- **National Policy Objective 71-** *Support the development and upgrading of the national electricity grid infrastructure, including supporting the delivery of renewable electricity generating development.*
- **National Policy Objective 72-** *Support an all-island approach to the delivery of renewable electricity through interconnection of the transmission grid.*
- **National Policy Objective 73-** *Support the co-location of renewable technologies with other supporting technologies and complementary land uses, including agriculture, amenity, forestry and opportunities to enhance biodiversity and promote heritage assets, at appropriate locations which are determined based upon the best available scientific evidence in line with EU and national legislative frameworks.*

- **National Policy Objective 74-** *Each Regional Assembly must plan, through their Regional Spatial and Economic Strategy, for the delivery of the regional renewable electricity capacity allocations indicated for onshore wind and solar reflected in Table 9.1 below, and identify allocations for each of the local authorities, based on the best available scientific evidence and in accordance with legislative requirements, in order to meet the overall national target.*

9.1: Regional Renewable Electricity Capacity Allocations

Region	Energised capacity 2023 (MW)	Additional Renewable Power Capacity Allocations (MW)	Total % of National Share in 2030	Energised Capacity 2023 (MW)	Additional Renewable Power Capacity Allocations (MW)	Total % of National Share in 2030
	Onshore Wind			Solar PV		
Eastern and Midlands	284	1,966	25%	306	3,294	45%
Northern and Western	1,761	1,389	35%	0.3	959	12%
Southern	2,622	978	40%	138	3,302	43%
Total	**4,667**	**4,333**		**445**	**7,555**	

Figure 2-3- Regional Renewable Electricity Capacity Allocations

- **National Policy Objective 75-** *Local Authorities shall plan for the delivery of Target Power Capacity (MW) allocations consistent with the relevant Regional Spatial and Economic Strategy, through their City and County Development Plans.*

The First Revision NPF sets out regional renewable energy capacity allocations for wind and solar energy. The Proposed Project is situated both within the Northern and Western Region. As outlined in the strategic document each Regional Assembly will prepare a Regional Renewable Electricity Strategy (RRES), whereby additional detail will be outlined on how the regional renewable electricity capacity allocations for the region can be achieved.

The introduction of renewable energy targets represents a more active and prescriptive approach to land use planning for renewable energy development. The First Revision NPF aligns itself with the national target of 9GW of onshore wind energy and with the policies and objectives of Local Authorities.

The NPF states that accelerated delivery of additional renewable electricity generation is therefore essential for Ireland to meet its climate targets, reduce its greenhouse gas emissions, and improve its energy security by reducing reliance on imported fossil fuels and diversifying its electricity supply.

2.4.2.2 Project Compliance with National Planning Policy

The Proposed Project is in line with the objectives of the Revised NPF which seeks to transition to a low carbon and climate resilient economy. If permitted, the Proposed Wind Farm will continue to contribute renewable energy, supporting NPOs.

2.5 Planning History

2.5.1 Planning applications within the application site boundary

In July 2025 an updated planning search was conducted using GCC online planning portal, along with the Commission online case search function to identify relevant planning applications within the designated red line boundary of the planning application site.

In July 2025 an updated planning search was conducted using GCC online planning portal, along with the Commission online case search function to identify relevant planning applications within the designated red line boundary of the planning application site.

Only one application lies within the site boundary and may have affected this planning application. This application is Pl Ref. 2460938 with the following development description:

> *"to construct a dwelling house with a wastewater treatment plant, percolation area, and all associated site works. Gross floor space of proposed works: 292.00 sqm"*

This application was submitted to Galway County Council on 25th July 2024. It was flagged by Galway County Council to the Commission that the application lay within the boundary of the proposed Laurclavagh Wind Farm. GCC issued a request for Further Information (FI) on 7th November 2024. FI point 2 related to the Proposed Wind Farm SID application and afforded the applicant the opportunity to put forward appropriate mitigation measures to ensure residential amenity would be protected should the wind farm application be granted. The FI request was not responded to by the applicant within the 6-month period and as a result the application was deemed withdrawn by Galway County Council.

2.8 Cumulative Impact Assessment

The comprehensive list of projects included in the cumulative impact assessment (i.e. within the 25km study boundary from the location of the Proposed Wind Farm) was updated in June 2025 and is provided in Appendix 2-3a of this report.

3. SITE SELECTION AND ALTERNATIVES

There are no updates to this Section of the EIAR.

4. DESCRIPTION OF THE PROPOSED PROJECT

4.5 Site Drainage

4.5.1 Introduction

The Proposed Wind Farm site is located within an area of free draining agricultural land, which is distal to surface watercourses. The nearest surface watercourse, the Ballinduff stream, is located 2.6km

west of the Proposed Wind Farm site. From a drainage design perspective, the key points of note regarding this site are:

- The absence of surface watercourses within the site. There are no recorded drainage ditches or streams and there are no groundwater features such as turloughs within the Proposed Wind Farm site;
- Rainfall within the Proposed Wind Farm site infiltrates to ground through the sandy, gravelly clay subsoils. The permeability of these subsoils is variable across the Site (refer to Section 9.3.7.3.3 of the EIAR), however the permeability is sufficiently high that all rainfall infiltrates to ground and there is no surface water runoff from the site;
- 26 no. infiltration tests were performed at the Proposed Wind Farm site. The results of the infiltration tests show that permeability varies across the Site, with permeability ranging between <0.1m/h (<2.7×10-5 m/s) to more than 20 m/h (<5×10^{-3} m/s). The mean infiltration rate from the tests is ~ 2m/h (5×10^{-4} m/s);
- This mean infiltration rate is considered representative of the overall site;
- The average annual rainfall at the site is 1,226mm, which equates to a rainfall depth of 3.8×10^{-5} m/s across the site, more than one order of magnitude lower than the mean infiltration rate from the 26 no. permeability tests; and,
- This mean infiltration rate (5×10^{-4} m/s) is a sufficient permeability to allow all rainfall during the annual 24-hour extreme rainfall event (35.4mm) to infiltrate to ground across the site, even accounting for the reduced permeability from hardstanding areas.

4.5.2 Drainage Design Principles

Runoff control and drainage management are key elements in terms of mitigation against effects on the underlying groundwater aquifer (surface water effects will not occur due to the lack of surface watercourses as detailed above).

Two distinct methods will be employed to manage drainage water within the Proposed Project. The first method involves '*keeping clean water clean*' by avoiding disturbance to natural drainage and recharge patterns. The second method involves collecting any drainage/runoff waters from works areas within the Proposed Wind Farm site that might carry silt or sediment, and nutrients, to route them along collector drains within which treatment (settlement) and recharge can occur, and outfall to infiltration areas and subsequent infiltration through the subsoil. As per the prevailing natural conditions at the Proposed Wind Farm site, there will be no direct discharges to surface waters. During the construction phase all runoff from works areas (i.e., potential dirty water) will be attenuated and treated to a high quality prior to being allowed to slowly percolate to ground through the infiltration areas and along the collector drains themselves.

4.5.3 Drainage Design

A drainage design for the Proposed Project, incorporating all principles and measures outlined in the drainage design description in the EIAR, was included in Appendix 4-6 to the EIAR. Minor updates to the drainage design have been made to the drainage design following he request for FI by the Commission, and these updates are included in Appendix 4-6a of The Report.

4.5.3.7 Drainage Design Calculations

The design of the proposed infiltration areas is shown within Drawing Detail D501 included within the Drainage design drawings (refer to EIAR Appendix 4-6). A representative calculation for the capacity of the proposed infiltration areas is included below, which uses the mean infiltration rate for the site (5×10^{-4} m/s), which is applied over the area of Turbine T2 (refer to Drawing D101 FI as included in Appendix 4-6a) as an example.

Clean surface water will be collected within the upstream interceptor drain (blue dashed line in Drawing D101 FI) and directed to level spreaders to infiltrate to ground. Any surface water runoff from the construction works area downgradient of this interceptor drain will be collected within the downstream interceptor drain (pink dashed line on Drawing D101 FI). The total construction works area between the upstream and downstream interceptor drains, where the hardstand is located is 9,900 m^2.

As the construction works will be relatively short-term, the 1 in 10 year 24-hour rainfall event is used as the extreme rainfall event which may occur during this period. This return period represents a rainfall depth of 54.8mm. Under this scenario, an infiltration area with the following dimensions satisfies the criteria set out in BRE365 (refer to **Table 4-1 below** for infiltration area calculations):

Infiltration area dimensions = 8.85m (l) × 3.5m (w) × 1m (d)

A revised drawing (D501_V2 FI) showing the standard design for the infiltration areas to be used during the construction phase is included in Appendix 4-6a of The Report.

This design is proposed as the standard design to be used across the Proposed Wind Farm site. We accept that this design represents the mean conditions across the site, however it is considered applicable to the site for the following reasons:

- There is no potential for storm water runoff to reach downstream watercourses;
- Currently (pre-development) all rainfall infiltrates to ground, therefore the design of the construction phase drainage is intended to mimic the existing drainage (infiltration) regime; and,
- The proposed design will ultimately ensure that there are no negative effects on either the hydrological or hydrogeological environment and there is no potential for construction phase drainage to affect downgradient flood risk.

Table 4-1 Infiltration area calculation to BRE365

Infiltration Area Size Assessment — Laurclavagh Ltd.

Project Laurclavagh Renewable Energy Development, Co. Galway
Appendix V BRE365 Infiltration Area Design

Site specific info: Green
Storm specific info: Orange
Required input in Red
Result in Blue

A50=	12.3		**Site Area =**	9900	m*2
V =	9.3	m*3	**f=**	5.00E-04	m/s
O =	533.30	m*3	**Storm Duration =**	86400	s
I =	542.5	m*3	**Rainfall =**	54.8	mm
S = I - O =	9.2	m*3			

%FREE V= 0.3
Effective Depth = 1 m
Width = 3.5 m
L = 8.85 m

S = V 0.1 The soakpit has adeqaute dimensions when the free volume provided (V) equals the storage required (S)
(using the goal seek command set C26 to value of 0.1 by changing L21)

DESIGN OK

T50 = 0.2090 hours For a valid design the time for the soakway to half empty from fulll should be less than 24hours

DESIGN OK

4.7.2 Proposed Grid Connection

4.7.2.9 Cable Installation and Watercourse/Service Crossings

Appendix 4-8a Addendum Grid Connection Infrastructure and Appendix 4-9 Watercourse Crossings of this Report provide further detail on the specific crossing methodology at each grid connection and the watercourses and culverts to be crossed respectively. Table 4-1 below provides a culvert survey summary for each proposed crossing location, and the corresponding crossing methodology proposed.

Table 4-2a Culvert Survey Summary and Crossing Methodology

Watercourse Crossing Reference No.	Watercourse Type	Width of Culvert (m)	Cover from Road Level to Top of Culvert (m)	Crossing Type Description	Watercourse Crossing Type	Extent of in-channel works
WC1	Double concrete pipe crossing	1.8(2x0.9)	3.27	High water levels flowing through this bridge which had a small channel which appeared to be quite overgrown with vegetation. There is sufficient separation distance to accommodate the standard trefoil cable passing over the watercourse without any amendment to the trench or ducting profile	Option A	None. No in-stream works required.
WC2	Clearspan Bridge	12.5	1.6	The River Clare is a fast flowing channel. This existing crossing is along the N83 National Road, with a footpath along the bridge. The original bridge structure appeared to be a stone-arch bridge which had a newer clearspan structure built on top. The laying of cables under the existing watercourse by directional drilling ensures that no contact will be made with the watercourse during the works.	Option D	None. No in-stream works required
WC3	Stone-Arch Bridge	2.1	0.3	This stone arch bridge passed over a watercourse with stagnant water and a high level of vegetation. Sufficient cover will be achieved from the top of the bridge to the road on this watercourse crossing to lay the cables in a flat formation on top of the existing crossing. This scenario ensures that the cable trench will have no impact on the watercourse	Option C	None. No in-stream works required

WC4	Concrete Pipe	1.05	1.72	Fast-flowing stream, much lower than the existing road level. There is sufficient separation distance to accommodate the standard trefoil cable passing over the watercourse without any amendment to the trench or ducting profile	Option A	None. No in-stream works required

4.10 Decommissioning

As stated in Section 4.10 of Chapter 4: Description of the Proposed Project of the EIAR, as noted in the Scottish Natural Heritage report (SNH) *Research and Guidance on Restoration and Decommissioning of Onshore Wind Farms* (SNH, 2013) reinstatement proposals for a wind farm are made approximately 30 years in advance, so within the lifespan of the Proposed Project, technological advances and preferred approaches to reinstatement are likely to change. According to the SNH guidance, it is therefore:

> *"best practice not to limit options too far in advance of actual decommissioning but to maintain informed flexibility until close to the end-of-life of the wind farm".*

Appendix 4-7: Decommissioning Plan of the EIAR details the environmental management framework to be adhered to during the decommissioning phase of the Proposed Project. As noted in the Decommissioning Plan, this Decommissioning Plan will be reviewed and updated prior to commencement of decommissioning works to take account of the relevant conditions of the planning permission and current health and safety standards at the time of decommissioning. The final Decommissioning Plan will be agreed in writing with the Planning Authority prior to the commencement of the decommissioning phase.

The treatment and recycling of blades will be in accordance with best practice at the time of decommissioning. Turbines onsite will be removed from site in accordance with Developer policy, whereby all elements of the turbines will be recycled and reused, and no components will be sent to landfill. Current methodology for the decommissioning of the turbine blades is set out below:

- Blades will be segmented into approximately 9 pieces using an excavator mounted shear;
- Technicians will remove root rings and any other associated metal for recycling;
- The construction crew will ensure that there are no contaminants present (e.g. oils, brake dust, grease rubber hoses);
- Blade segments will then be lifted via telehandler to a suitable container for transport (e.g. 40 cubic yard RORO skips and/or trailer mounted articulated bulk carriers);
- Segments will then be transported to suitable licenced processing facilities, such as Barna Recycling Transfer Station (W0106), The City Bin Co. Recycling Centre (W0148) or Galway Metal Company Ltd. (P1006) to be shredded;
- The shredded output will be used in a suitable licenced cement co-processing or a waste-to-energy facility.

Figure 4-33 below illustrates the turbine removal process. The methodology for the removal of turbines from the site is detailed in below. The turbines will be disassembled with a similar model of crane that was used for their erection i.e. blades will be removed from the nacelle, the nacelle will then be removed from the top of the tower, and the tower sections will then be removed. A crane will be used to remove the blades from the hub. The blades will then be decommissioned following the methodology set out in Section 4.3.1.1 The turbine components will be separated and removed offsite. The turbine materials will be transferred to a suitable recycling or recovery facility.

Enabling Works:

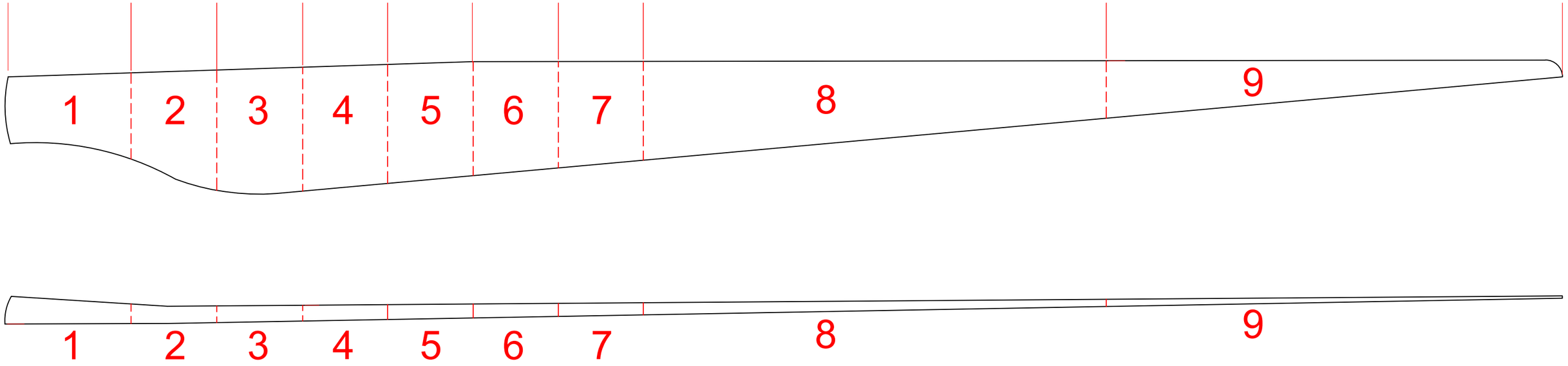
- The temporary construction compounds will be established;
- Vegetation and scrub clearance along with some levelling works will be carried out at the turbine hardstand areas and access roads as necessary;
- Improvements to existing roads

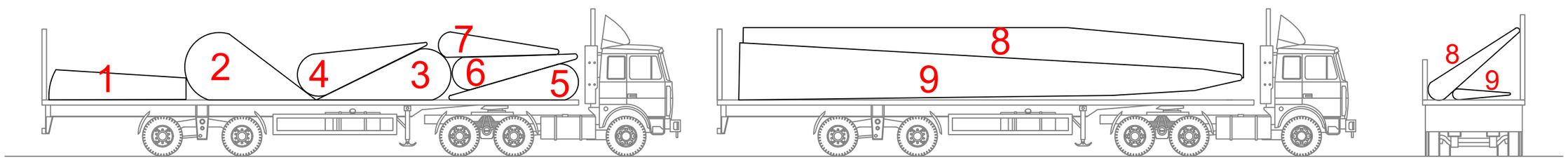
Removal of the Turbines:

- Appropriate running surface for cranes will be constructed;
- Dismantle turbines as per the methodology outlined above;

As is in line with Developer company policy, none of the turbine components will be sent to landfill after being removed from site. As outlined in above, all turbine components will be broken down before their removal from site and will be reused in varying capacities.

The turbine nacelle and tower sections are metallic and can therefore also be recycled. The tower will be broken out into its original tower sections and will be transported offsite to a suitable licenced or waste processing facility, such as those listed above.





DRAWING TITLE:
Turbine Blade Decommissioning Detail

PROJECT TITLE:
Laurclavagh Renewable Energy Development

DRAWING BY: KD	CHECKED BY: KB
PROJECT No.: 210627	DRAWING No.: Fig 4-33
SCALE: N.T.S @ A3	DATE: 19/08/2025

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5. POPULATION AND HUMAN HEALTH

5.3.7.1 Equine Industry

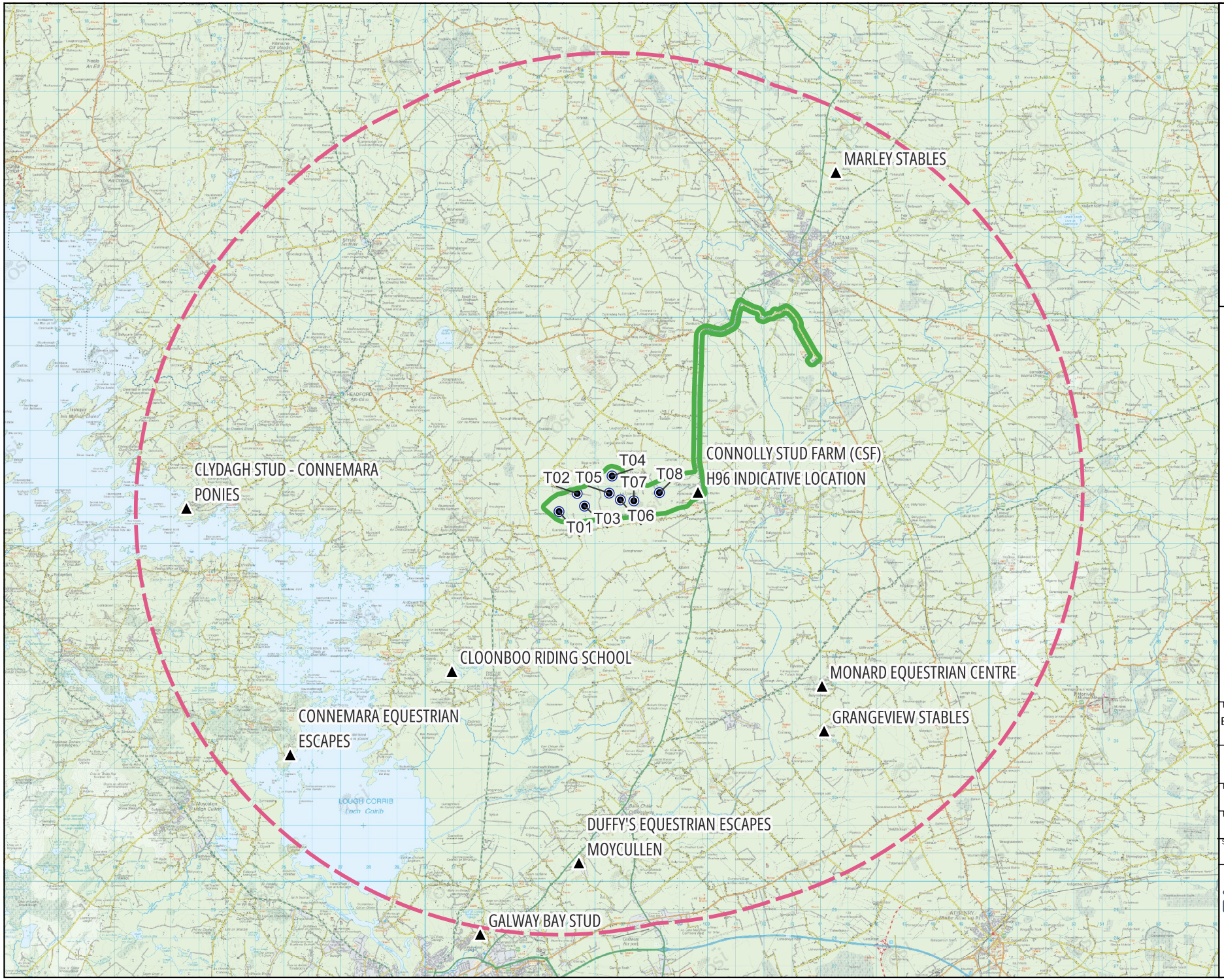
There are a number stud farms, stables, bloodstock farms and equestrian facilities identified within the wider vicinity of the Proposed Wind Farm. The closest registered equestrian facilities to the Proposed Wind Farm are detailed in Table 5-1 below. Figure 5-7 below shows equestrian facilities within the vicinity of the Wind Farm.

Table 5-1 Equine Facilities within the vicinity of the Proposed Project

Equestrian Facility Name	Distance to Nearest Proposed Turbine (Direction)
Connolly Stud Farm (CSF) (Indicative location H96)	1.38km from T08 (East)
Clonboo Riding School	6.9km from T01 (Southwest)
Monard Equestrian Centre	9.1km from T08 (Southeast)
Grangeview Stables	10.3km from T08 (Southeast)
Duffy's Equestrian Centre	12.5km from T06 (South)
Connemara Equestrian Escapes Moycullen	12.9km from T01 (Southwest)
Marley Stables Tuam	13.1km from T08 (northeast)
Clydagh Stud Farm – Connemara Ponies	13.2km from T01 (West)
Galway Bay Stud	15.1km from T01 (South)

A submission on the application made by a third party identifies Connolly Stud Farm or CSF as a proximate farm to the Proposed Project, along the L61461, however the exact location of the stud farm is unavailable. In the absence of the exact location, the identified dwelling in the submission is assumed for the purposes of the precautionary assessment. The property selected is approximately 1.38km west of the closest proposed turbine and is identified as property 'H096' in the shadow flicker and noise assessment tables.

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.



Map Legend

- EIAR Site Boundary
- Proposed Turbine Locations
- Equine Facilities
- 15km Buffer of Proposed Wind Farm

N

Drawing Title
Equestrian Facilities within the vicinity of the Proposed Wind Farm

Project Title
Laurclavagh Renewable Energy Development

Drawn By	Checked By
KB	SC
Project No.	Drawing No.
210627	Figure 5-7
Scale	Date
1:175,000	2025-08-27

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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).*

5.3.7.1.1 *Guidance*

In the absence of national policy or guidance in relation of the development of wind farms near stud farms/equestrian centres, or routes used by horses, the guidance document created by the British Horse Society (BHS), an equine charity, *'Advice on Wind Turbines and Horses – Guidance for Planners and Developers'*[18] has been considered.

The British Horse Society policy statement states the following in relating to the siting of wind turbines in the vicinity of equine businesses:

> *The BHS strongly recommends that the views and concerns of local equestrians should be recognised and taken into account when determining separation distances and that normally a minimum separation distance of 200m or three times blade tip height (whichever is greater) will be required between a turbine and any route used by horses or a business with horses.*

The British Horse Society has also produced a document aimed at horse riders and carriage drivers, '*Equestrian Access through Wind Farms in Scotland*'. This document notes that:

> *BHS has received many more reports of horses being unphased by wind turbines than of adverse reactions, and very few where the horse's response has not eased with familiarity and sensitive handling. In some parts of the country, wind farms provide welcome new opportunities for off-road riding and carriage driving."*

[18] *British Horse Society (2015). Advice on Wind Turbines and Horses – Guidance for Planners and Developers.*

As mentioned previously, the closest stud farm or equestrian facility is located approximately 1.38km from the nearest proposed turbine. The proposed turbines and closest equestrian centre are at a distance beyond that of the British Horse Society's recommended minimum separation distance of 200 metres as noted above. The minimum separation distance from proposed turbines exceeds the 555 metres separation distance (based on the recommended three times the turbine blade tip height 185 metres) between a turbine and any business with horses.

As stated above, there has been no peer-reviewed research carried out in Ireland on the impacts of wind farms on the equine industry. There is no reference to wind turbine effects on equine activities in the Guidelines (DEHLG, 2006). or the Draft Guidelines (DHPLG, 2019). There is no published research specifically relating to the effect of wind turbines on horses or horse activity. The Marshall Day Acoustics study '*Summary of Research of Noise Effects on Animals*' (2014) concluded that:

- **Horses in stables** - *"A case study by Huybregts from Marshall Day Acoustics observes that horses in stables exposed to LAeq, 15min of 54-70dB generally show little response to music noise unless the noise is particularly impulsive... Huybregts (2008)."*
- ***Breeding mares*** - *"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."*
- **Race horses** - *"Race horses are known for being high-strung. However, Marshall Dav 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)."*

Furthermore, the Marshall Day (2014) study finds that horses exhibit adaptation, acclimation and habituation after repeated exposure to noise and visual stimuli and suggests that noise has minimal effects on animals; *"once animals become habituated to noise, especially when it is steady and associated with clearly nonthreatening activity, they suffer very little adverse response"*.

It is noted that in a previous case before the Commission (formerly An Bord Pleanála) (Case Ref. PL16.221313; Mayo County Council Refs. 00/1954 and 06/2476), concerns were raised regarding the interaction between horses and the proposed wind farm, which is located on an estate that also operates an equestrian centre. The Inspector's Report (Section 10.8) did not consider the interaction between horses and turbine developments to be an issue. In addition, on another occasion in relation to concerns that a proposed wind farm development in Co. Kildare (ABP-300746-18) would have a potentially significant adverse effect on the equine industry, the Board found that:

> *"The Board noted the Inspector's recommendation to refuse permission on the grounds that the proposed development would have a potentially significant adverse effect on the equine industry – mainly through reputational damage. While this industry is undoubtedly of major significance in the economy of County Kildare the Board disagreed with the Inspector's view and noted the lack of any specific evidence that wind turbines pose a threat to the welfare of horses and declined to cite the matter as a reason for refusal of permission"*

Conclusion

On a precautionary basis, working on the assumption that every inhabitable dwelling owns a horse or horses, the closest inhabitable dwelling is located over 760 metres from the nearest proposed turbine location. As mentioned previously, the closest know stud farm/equestrian facility is Connolly Stud Farm located approximately 1.38km east of the closest proposed turbine. In both instances, the proposed turbines are at a distance beyond that of the British Horse Society's recommended minimum separation distance of 555 metres (based on three times the turbine blade tip height of 185 metres) between a turbine and any business with horses. The closest public roadway is approximately 900m from the

nearest turbine (T08), and there are no identified horse trekking routes within the vicinity of the proposed turbines.

On a precautionary assumption, one known stud farm is located within the Shadow Flicker Study Area (1.63km), this property is identified as House ID no. H096. As identified in Section 5-9 of this Report, no exceedance in daily shadow flicker will occur at House ID no. 96 and the assumed location for Connolly Stud Farm shows no exceedances of the Guidelines threshold of 30 minutes per day or 30 hours per year.

All relevant properties have been assessed for the potential for noise impacts, and as identified in Section 12.3.6. the predicted operational noise levels at all the Noise Assessment Locations and Noise Sensitive Receptors lie below the Guidelines daytime and night time Noise Limits, and there will be no significant residual direct or indirect effects.

5.4 Tourism

Tourism is one of the major contributors to the national economy and is a significant source of full time and seasonal employment. Key Tourism Facts 2023[19], pertaining to domestic and international tourism volumes for Ireland, was published by Fáilte Ireland in October 2024 for the year 2023.

5.4.1 Tourism Revenue

5.4.1.1 Overseas Tourism and Revenue

In 2023, out-of-state (Overseas and Northern Ireland) tourist expenditure amounted to 5,980.1 million euro. Domestic tourism trips amounted to 3,121 million. Central Statistics Office's official count of direct employment in 'Accommodation and food service activities', a category which includes hotels, restaurants, bars, canteens and catering, was 204,600 in Q4 2023 and rises to 206,900 when including seasonal and casual employment in the industry[20].

Key Tourism Facts 2023, published in 2024 does not provide the same level of detail in terms of tourist numbers and expenditure as previous years of the same report as a result of a change in the CSO's data collection methodology, however, it does note that:

> *"Every €1m of tourist expenditure helps to support 22 employees in tourism industries."*

The Republic of Ireland is divided into seven tourism regions. Table 5-2 shows the total revenue and breakdown of overseas tourist numbers to each region in Ireland during 2023 ('*Key Tourism Facts 2023*, Fáilte Ireland, October 2024).

Table 5-2 Revised Overseas Tourists Revenue and Numbers 2023 (Source: Fáilte Ireland)

Region	Total Revenue (€m)	Total Number of Non-Domestic (Overseas) Tourists (000s)
Dublin	2,289	3,870
Mid-East/Midlands	502	755

[19] *Fáilte Ireland (October 2024) Key Tourism Facts 2023. Available at: https://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/3_Research_Insights/FI_Key-Tourism-Facts-2023_v1-October-1.pdf?ext=.pdf*

[20] *Failte Ireland Key Tourism Facts 2023, October 2024. Available at: https://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/3_Research_Insights/FI_Key-Tourism-Facts-2023_v1-October-1.pdf?ext=.pdf*

South-East	283	521
South-West	962	1,321
Mid-West	487	724
West	**723**	**1,112**
Border	337	462
Total	**5,583**	**8,765**

The West Region, in which the Proposed Project is located, comprises Counties Galway, Mayo and Roscommon. This Region benefited from approximately 12.7% of the total number of overseas tourists to the country and approximately 13% of the total tourism income generated in Ireland in 2023.

This Section of the Report should be read in conjunction with the information previously detailed in the corresponding Section of the EIAR.

5.4.1.2 Domestic Tourism and Revenue

Table 5-3 presents the regional breakdown of domestic tourist numbers and revenue to the West during 2023 (Fáilte Ireland, 2024). Fáilte Irelands latest domestic tourism publications provide a county-by-county breakdown of key tourism information[21]. 1.2 million domestic tourists visited Galway in 2023, generating €236 million in Revenue, with Hiking, Walking, Nature Reserves, Gardens, Heritage/Interpretive Centres and Houses and Castles and touring around by car among the top activities for domestic tourists in the county.

Table 5-3 Domestic Tourism Revenue and Numbers 2023 (Source: Fáilte Ireland)

Region	Total Revenue (€m)	Total Number of-Domestic Tourists (000s)
Dublin	490	2,416
Mid-East/Midlands	351	1,965
South-East	371	1,993
South-West	839	3,031
Mid-West	300	1,433
West	**426**	**1,951**
Border	343	1,520
Total	**2,630**	**11,893**

[21] *Fáilte Ireland (October 2024). Galway Key Tourism Facts 2023. Available at: https://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/Research/Key%20Tourism%20Facts%20and%20Figures%202023/FI_Key-Tourism-Facts-2023_Galway.pdf?ext=.pdf*

The West Region benefited from approximately 16.4% of total domestic tourist numbers and 16.2% of associated expenditure in Ireland in 2023.

5.7 Property Values

In 2023 CERIS published a working paper entitled *'Wind Turbines and House Prices Along the West of Ireland: A Hedonic Pricing Approach'*.[22] This paper looked at wind turbine developments in Donegal, Leitrim, Sligo, Mayo, Galway, Kerry and Cork and associated property values. This working paper utilised satellite imagery to identify individual turbines and sourced its housing data from www.daft.ie; while the published price on Daft is not equivalent to the final agreed sale price, it was assumed that the listing and transaction prices are correlated. The findings of this research revealed a potential decrease in property values of -14.7% within a 0-1km radius of a wind turbine. However, the sample size of only 225 houses within this range does not adequately represent the broader landscape of Irish rural housing and the distribution of wind turbines. The author states that there are '*no significant reductions in house prices beyond 1km'* and that the effects seen within the 1km band were not persistent and diminished over the operational lifetime of the turbines. Considering that this is a working paper, based on a small sample size where local conditions have the potential to disproportionately impact on the local housing market, further research is required before relying on its findings.

In September 2023, the Energy Policy Journal published 'Commercial wind turbines and residential home values: new evidence from the universe of land-based wind projects in the United States.'[23] This study targeted urban counties in the United Stated with populations over 250,000 persons, and found that on average, after a commercial wind energy project is announced, houses located within 1 mile of a proposed wind energy project experience a decrease in value of 11% relative to homes located within 3-5 miles of the proposed wind energy project. The decline in property values was found to recover post construction with property value impacts becoming relatively small (~2%) and statistically insignificant 9 years or more after project announcement (roughly 5 years after operation begins). This suggests that the housing market is reacting negatively to the expectation of likely impacts (after announcement) and the heightened activity during construction, but after operation begins, those negative perceptions and related home price impacts appear to fade.

As identified in Section 5.6 in the EIAR, extensive research in the United States provides a broader perspective. The 2009 and 2013 studies by the Lawrence Berkeley National Laboratory (LBNL) analysed thousands of home sales near wind farms and found no measurable, consistent impact on property values. A 2023 study published in *Energy Policy* reported temporary value decreases post-announcement but found these effects faded once the wind farms became operational. In the UK, studies commissioned by RenewableUK (2014) and Climate Exchange (2016) concluded that wind farms do not have a consistent negative impact on property prices. Instead, county-wide market trends drive local house prices rather than the presence of wind farms.

The most recent review which has been published in July 2025 by RenewableUK '*Do wind farms affect house prices*?'[24] looks at the research which has been conducted in recent years to assess the concerns brought upon by the growing development of renewable energy infrastructure (wind turbines and above ground grid infrastructure) across the UK. The review concludes that there are a complex number of factors influencing house prices which play a much more significant role than the presence

[22] *Centre for Economic Research on Inclusivity and Sustainability (2023) Wind Turbines and House Prices Along the West of Ireland: A Hedonic Pricing Approach.* <https://www.universityofgalway.ie/media/researchsites/ceris/files/WP-2023-01.pdf>

[23] *Energy Policy (2023) Commercial wind turbines and residential home values: new evidence from the universe of land-based wind projects in the United States. Available at:* https://www.sciencedirect.com/science/article/pii/S0301421523004226

[24] *RenewableUK (July 2025). Blog post: Do wind farms affect house prices?. Available at:* https://www.renewableuk.com/news-and-resources/blog/do-wind-farms-affect-house-prices/

of wind farm of above ground electricity infrastructure. Based on the review of available research across the UK, there is no supporting evidence which supports the hypothesis that renewable energy infrastructure negatively affects long-term property values in the UK.

The literature described above demonstrates that there is insufficient evidence from the scientific literature and studies conducted to determine that there is the potential for a significant effect on property values as a result of the Proposed Wind Farm.

Property Values and Grid Infrastructure

In May 2016, EirGrid conducted a literature review and evidence-based field study on the effects of high voltage transmission development on patterns of settlement and land use. The objectives of EirGrid Evidence Based Environmental Studies Study 9: Settlement and land use were to:

- To gather information on patterns of settlement and land use near to existing transmission infrastructure.
- To establish the effects of existing transmission infrastructure on patterns of settlement and land use.
- To review land use planning policy in various Development Plans to determine whether any policy change has arisen as a result of the construction and operation of existing transmission projects.

A literature review of transmission projects from around the world was carried out, including review of Environmental Impact Assessments (EIAs). To investigate effects of transmission projects on patterns of land use and settlement, 31 case studies were chosen; 17 with existing overhead line (OHL) circuits, 10 with substations and 4 in construction. Sites were located in rural, rural/urban and urban areas. Land uses included agricultural, commercial and amenity. Four control Sites had no infrastructure. Coexistence, development density, planning policy and planning application history were all investigated. Planning and land use policy over the last twenty years was reviewed to see if it has influenced, or been influenced, by recent programmes of transmission infrastructure development. This study has established no evidence of any significant impact arising from the construction or existence of transmission infrastructure in terms of patterns of settlement and land use; however, transmission infrastructure can be a local physical constraint on development.

5.9 Shadow Flicker Assessment Results

5.9.1 Daily and Annual Shadow Flicker

Appendix 2-1 Community Report of the EIAR details the consultation which was carried out by Laurclavagh Ltd. with the local community in respect of the Proposed Project. Initial consultation began with the local community within approximately 2km of the area of the site, at the early stages of project design in 2022. Introductory information provided at the time of first contact included a site location map of the potential developable area, and an overview of properties within the vicinity of this area. As part of this initial notification to the local community, each property was given a house number on first contact to ensure consistency between design updates and allow for easy recognition for householders when the final EIAR was completed, house numbering did not change from the initial numbering given to house holders at this time, from when the Proposed Project was in initial design stages, to the final EIAR Assessment. Any new sensitive receptors which were not initially accounted for were given a consecutive number, rather than a renumbering of the entire housing list.

This has resulted in the non-liner numbering of houses which can be seen in the EIAR, including in Table 5-10, where for example H075 is 904m from the nearest turbine (T08), H076 is 1520m from the nearest turbine (T08) and H077 is 909m from the nearest turbine (T02).

Following the RFI by ACP, a review was conducted of Table 5-10 of the EIAR. In this review, it was found that H213 and 2 no. additional sensitive receptors, H121 and H126 were excluded due to typographical error in Table 5-10 in the EIAR. 1 no. additional planning application was identified within 1.63km and has been included as property no. H852 on the updated dwellings list and the revised map Figure 5-3a. It is located next to H124 and is 1150m from the nearest turbine (T01). The predicted shadow flicker results for these sensitive receptors are provided in Table 5-4 below.
It should be noted that, any additional sensitive receptors within the Shadow Flicker Study Area that were not included in the initial or updated assessment will be dealt with in line with the next nearest sensitive receptor. This will not alter the predicted effects of the EIAR or the Report. The Shadow Flicker Assessment results in the EIAR and the Report provide a comprehensive assessment of predicted shadow flicker for a range of distances and directions from the Proposed Wind Farm, which are representative of the entire Shadow Flicker Study Area. Should any additional sensitive receptors or planning permission applications come to the attention of the Commission, they should be considered to have been assessed to a sufficient degree. To provide better context to this, whilst H852 was found following a planning review of sensitive receptors, it was reasonably represented by H124 which is immediately adjacent. The predicted maximum daily Shadow Flicker for H852 is 00:35:24 minutes (refer to Table 5-4 of this Report), while the predicted maximum daily shadow flicker for H124 is 00:38:24 minutes (refer to Table 5-10 of the EIAR). As an exceedance of the daily shadow flicker Guidelines limits is predicted for H852, a mitigation strategy for same is provided in Table 5-5 below.

In the event that planning permission is granted for the Proposed Project, an updated survey of sensitive receptors within the shadow flicker study area will be included as part of the operational shadow flicker assessment, which will be carried out within the first year of operation. Any new sensitive receptors which are identified in the updated survey, will be considered in the operational shadow flicker assessment, and the mitigation measures outlined in Section 5.9.3.14 of the EIAR will be employed at the potentially affected properties to ensure the daily and annual shadow flicker thresholds will not be exceeded. The clarifications provided here have no bearing on the statement of effect of Shadow Flicker outlined in the EIAR.

Drawing Title
Shadow Flicker Assessment Area

Project Title
Laurclavagh Renewable Energy Development

Drawn By: KB
Checked By: WOC
Project No.: 210627
Drawing No.: Figure 5-6a
Scale: NTS
Date: 03/09/2025

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Table 5-4 Additional Maximum Potential Daily & Annual Shadow Flicker – Proposed Laurclavagh Renewable Energy Development

House ID	ITM Coordinates (Easting)	ITM Coordinates (Northing)	Description	Distance to Nearest Turbine (metres)	Nearest Proposed Turbine No.	Max. Daily Shadow Flicker: Pre-Mitigation (hrs:min:sec)	Max. Annual Shadow Flicker: Pre-Mitigation (hrs:min:sec)	Max. Annual Shadow Flicker Adjusted for Average Regional Sunshine (hrs:min:sec)	Proposed Turbine(s) Giving Rise to Daly Shadow Flicker Exceedance	Mitigation Strategy Required (Daily)	Mitigation Strategy Required (Annual)
H121#	538842	742936	Dwelling	1038	T08	00:27:00	15:22:12	4:04:00	N/A	No	No
H126#	537702	744704	Dwelling	1065	T08	00:55:12	70:55:12	18:45:51	4,6,8	Yes	Yes
H213#	533986	744226	Dwelling	1314	T01	00:28:12	28:07:48	7:26:34	N/A	No	No
H852*	533704	743673	Dwelling***	1150	T01	00:35:24	22:39:36	5:59:44	T1	Yes	Yes

****Planning Permission*
#Sensitive Receptor omitted from EIAR due to typographical error

Table 5-5 Additional Shadow Flicker Mitigation Strategy for Daily Shadow Flicker Exceedance - Turbine Numbers and Dates

Property No.	Max. Daily shadow Flicker: Pre-Mitigation (hrs:min:sec)	Max. Annual Shadow Flicker Adjusted for Average Regional Sunshine (hrs:min:sec)	Turbine(s) Producing Shadow Flicker Exceedance	No. of Days 30min/day Threshold is Exceeded	Days of Year When Mitigation May be Required (Day No's)*	Post-mitigation Maximum Daily Shadow Flicker (hrs:mins:sec)	Post-mitigation Maximum Annual Shadow Flicker (hrs:min:sec)
H852	00:35:24	05:59:44	1	25 days	43-54, 291-303	≤00:28:00	≤30:00:00

Section 5.10.3.7of the EIAR outlines the mitigation strategies which may be employed at the potentially affected sensitive receptors to ensure the daily and annual shadow flicker thresholds as outlined in the Guidelines (DEHLG, 2006) will not be exceeded. The same mitigation strategies, outlined in Section 5.9.3, could be taken further to achieve stricter shadow flicker controls, should the shadow flicker requirements of the Department of Housing, Planning and Local Government '*Draft Revised Wind Energy Development Guidelines'*[25]; referred to hereafter as the Draft Guidelines (DHPLG, 2019)) be adopted in advance of a planning decision being made on the Proposed Wind Farm.

5.9.2 Cumulative Shadow Flicker

For the assessment of cumulative shadow flicker, any other existing, permitted or proposed wind farms are considered where the project's ten times rotor diameter shadow flicker study area are located within the Shadow Flicker Study Area of ten times the rotor diameter for the Proposed Project. As identified in Section 2.1.1 above, the closest wind farm remains the proposed Lemanaghan Wind Farm located 16.3km southwest of the Proposed Wind Farm at its closest point and as such the ten times rotor diameter shadow flicker study for this proposed project would not overlap with that of the Proposed Project ten times rotor diameter Shadow Flicker Study Area. Therefore, there is no change from Section 5.7.6.2 in the EIAR as it remains that no cumulative shadow flicker assessment is required.

5.10 Likely Significant Effects and Associated Mitigation Measures

5.10.3 Operational Phase

The following impact assessment sections of the EIAR pertaining to Population and Human Health have been considered and additional detail provided where applicable in accordance with guidance as set out in Section 1.1 above.

5.10.3.1.4 *Property Values*

Pre-Mitigation Impacts

Proposed Wind Farm

As noted in Section 5.6 above, the available scientific literature demonstrates that there is insufficient evidence from the scientific studies conducted to determine that there is the potential for a significant effect on property values as a result of the Proposed Wind Farm. The impact assessment on property values outlined below takes a precautionary approach and assumes that based on the inconclusive evidence summarised above in Section 5.6, there is the potential for short-term slight impacts on property values located within 1km of the proposed turbines during the early operational phase of the Proposed Wind Farm.

Grid Connection

As noted in Section 5.6 above, the conclusions from available EirGrid studies indicate that property values (residential and agricultural) show no correlation with the presence of grid infrastructure in the area, with opinions on nearby grid infrastructure diminishing over time. In some cases, property values

[25] *Department of Housing, Local Government and Heritage (2019). Draft Revised Wind Energy Development Guidelines December 2019.*

were demonstrated to increase however, causation with grid infrastructure cannot be determined. There is no potential for impact on property values in the area.

Mitigation and Monitoring Measures

- All mitigation relevant to property values, outlined above and the corresponding chapters: Chapter 5, Population and Human Health, Chapter 10 Air Quality, Chapter 12 Noise and Vibration, Chapter 14 Landscape, and Chapter 15 Material Assets, will be implemented in order to reduce insofar as possible, impacts on property values at properties located in the vicinity of the Proposed Project. Please refer to Chapter 18 Schedule of Mitigation and Monitoring Measures for a full list of measures.
- The Proposed Wind Farm has been designed in accordance with the parameters set out in the Guidelines (DEHLG, 2006) and with cognisance of the draft Guidelines (DHPLG 2019), adhering to the required setback distances from sensitive receptors set out in those documents.

The available scientific literature on the topic is inconclusive, with large scale studies conducted in the UK concluding that property values are generally driven by market conditions rather than proximity to wind farms. These studies comprise a much larger sample size than then only Irish study on the topic, a working paper, where the small sample size has the potential to result in individual circumstances having had an outsized bearing on the conclusions drawn from the study.

The available literature that does identify a short-term decrease in property values all note that the decrease in value reduces and becomes statistically insignificant, in general, 5 years after the commencement of the operational phase.

Residual Effect

It can be concluded that there is the potential for a short term negative not significant impact on property values from the operational phase of the Proposed Wind Farm.

Significance of Effects

The effect on property values due to the Proposed Wind Farm is not significant.

6. BIODIVERSITY

6.4 Baseline Ecological Survey Results

6.4.1 Description of Habitats and Flora within the Ecological Survey Area

Updated multidisciplinary walkover surveys were undertaken at the Proposed Wind Farm site and along the Proposed Grid Connection underground cabling route on the 19th of August 2025 in order to ground truth and ascertain if there have been any changes to the baseline data recorded and submitted with the original EIAR. No significant changes with regards to habitats or faunal records are reported compared to that reported within the original EIAR.

A series of updated habitat maps have now been submitted. Figure 1a shows an overall Habitat Map at a scale of 1:15,000. The remaining figures show small-scale sections of the Proposed Wind Farm site at a scale of 1:1250. These maps are provided in Appendix 6-6 Habitat Map Pack of The Report.

6.4.2 Fauna in the Existing Environment

Updated faunal surveys, including badger surveys, were conducted within the Proposed Wind Farm site on the 19th of August 2025. No change in status of the existing badger setts as described in Section 6.4.2.1 of the original EIAR as submitted, are reported. No additional evidence of significant faunal activity within the Site was recorded.

6.4.2.2 Otter

Updated faunal surveys were conducted along the Proposed Grid Connection underground cabling route on the 19th of August 2025, which included survey for otter. During updated 2025 otter surveys of the watercourses along the Proposed Grid Connection underground cabling route, no evidence of otter was found.

6.4.2.3 Bats

Updated faunal surveys were conducted along the Proposed Grid Connection underground cabling route on the 19th of August 2025. These included more detailed bat roost inspections of the existing crossing structures along the Proposed Grid Connection using endoscope and thermal imaging under NPWS survey/roost disturbance licence. No evidence of bat roosts was found during original baseline surveys in 2023, and no evidence of bat roosts were found during the updated 2025 surveys. The structures were re-assessed for bat roosting potential in line with updated bat survey guidelines (Collins 2023[26]) as set out in Table 6-1 below:

Table 6-1 Bat Roost Suitability of Crossings along the Proposed Grid Connection Underground Cabling Route

Crossing ID	ITM	Culvert type	Photo	Bat Roost Potential
WC1	540063 749583	Two concrete pipes and stone wall		No evidence of bats found. Gaps in crevices in lower section of bridge. Upper section has been repointed on both sides. Gaps were inspected with thermal camera and endoscope. *Low* bat roost potential.
WC2	540920 749751	Clearspan bridge over the Clare River		No evidence of bats found. Stone-arch bridge with a new clearspan concrete structure built on top, no evidence of bat use or gaps that could be used by bats. *Negligible* suitability.

[26] *Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition). The Bat Conservation Trust, London.*

WC3	541950 749970	Single stone arch		No evidence of bats found. Well pointed stone arch with heavy vegetation cover. No gaps identified that could be used by bats. *Negligible* bat roost potential.
WC4	543287 749508	Pipe culvert		No evidence of bats found. Solid concrete pipe culvert - No bat roost potential. *Negligible* suitability.
MC1	541711 750265	Motorway crossing		No evidence of bats found. *Negligible* suitability for roosting bats

6.5 Ecological Impact Assessment

6.5.2 Likely Significant Effects During Construction Stage

6.5.2.1 Effects on Habitats During Construction

The figures provided in Appendix 6-7 (Habitat Loss and Replanting Map Pack) are now provided at a scale of 1:2500 which show the habitat loss (hedgerow and treeline) associated with the Proposed Project. The linear habitat loss is as a result of location of infrastructure as well as the prescription of bat buffers around the proposed turbines as per NatureScot**Error! Bookmark not defined.** guidelines.

There will be no loss of woodland habitat as a result of the Proposed Project.

The figures also show the extent of proposed hedgerow and treeline replanting (note these are potential areas from which 3600m will be selected in agreement with landowners).

The figures also show the construction phase fencing prescribed as mitigation to protect woodland and calcareous heath located within the vicinity of the Proposed Project footprint.

6.5.2.2 Effects on Fauna During Construction

6.5.2.2.4 *Impacts on Lesser Horseshoe Bat Roosts*

Data in relation to lesser horseshoe bat roosts within 10km of the Proposed Wind Farm was requested by NPWS and Bat Conservation Ireland (BCI) in November 2023. Eleven roost records, including five lesser horseshoe bat roosts, were provided (Appendix 6-2 Bat Report, Table 4-1); however, no record of the roost in question was received. Additionally, an updated request to BCI in July 2025 did not reveal any new roost records.

A review of landscape features did not reveal the presence of any caves within the Proposed Wind Farm site. The nearest confirmed cave is over 5km away which is outside the core foraging range (i.e. 2.5km) of lesser horseshoe bat. There are three other karst features on the GSI database[27] located outside the EIAR site boundary which are marked as caves, although these are recorded as unconfirmed with 'unknown' details suggesting they may be souterrains. Two manmade subterranean sites were identified and inspected within the Proposed Wind Farm site (Appendix 6-2, Table 4-4); however, neither structure presented suitable features for roosting bats.

Lesser horseshoe bat roosts in proximity to the site have been fully considered. The Proposed Project has been designed such that there will be no net loss of linear habitat for commuting and foraging bats and no loss of bat roosts. Approximately 3.6km of linear habitat will be added to mitigate for the loss of approximately 1.8km of linear features, which will result in a 100% net gain in linear habitat features within the Proposed Wind Farm site. Lesser horseshoe bat is a low collision risk species, furthermore, a range of mitigation measures to reduce the potential for collision has been implemented as set out in Section 6.1 of the Bat Report as submitted with the planning application as well as an operational monitoring plan. There is therefore no potential for significant effect to the local lesser horseshoe bat population and there is no requirement to update the assessment.

The potential for the Proposed Project to result in likely significant effect to the designated Qualifying Interest (QI) Lesser Horseshoe Bat roost has been considered in the revised Natura Impact Statement (NIS) provided. Section 5.1.1.1 of the revised NIS assesses the potential for adverse effect on the QI Lesser Horseshoe Bat roost as follows,

According to the site-specific conservation objectives[28], Lough Corrib SAC has been selected for this species because of the presence of one summer roost (id. 217). This roost is mapped as being located to the north of the Lough, over 25km away from the Proposed Project site. Given the distance between the Proposed Project and the QI roost, as well as the likely remoteness of the Proposed Project from any potential auxiliary roosts connected with the QI roost, there is no potential for adverse effect on this species.

Therefore, there is no potential for adverse effect to the QI Lesser Horseshoe Bat roost as a result of the Proposed Project.

6.5.3 Likely Significant Effects During the Operational Phase Stage

6.5.3.2 Effects on Fauna During Operation

6.5.3.2.2 *Impacts on Other Fauna Species*

[27] *IE GSI Groundwater Data Ireland ITM Viewer (Geological Survey Ireland, 2025)*
[28] *https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000297.pdf*

The EIAR identified the following faunal species as Key Ecological Receptors (KERs) in the context of the Proposed Project and carried out a full impact assessment and applied mitigation where required: badger, otter, and bats.

As discussed in Section 6.4.3 of the submitted EIAR, the potential for the Proposed Project to result in impacts on other protected fauna, besides those recorded within the Proposed Project site during ecological surveys undertaken, and other species identified as being KERs, has been considered. As stated in the EIAR (Table 6-14),

The recorded evidence suggests that the Proposed Project site is not utilised by populations of higher than local significance and no potential for significant effects have been identified at the population level. Due to the small footprint and nature of the Proposed Project, they are unlikely to be significantly affected by the Proposed Project. For this reason, other faunal species are not considered further in this EIAR. Significant effects are not anticipated.

This is based on the ecological faunal surveys carried out by MKO at the Site, which did not identify a population of the listed species of more significance than at the local level. While it is possible that pine martin, shrews, dormouse, hedgehog, butterfly species and other insects, snails and worms, as well as a range of bird species, are either known to occur at the Site or are likely to occur at the Site, it is concluded that there is no potential for significant effect on these species. Habitat loss associated with the Proposed Project, which will have a relatively small footprint in the context of the wider landscape, will be restricted to species poor agricultural grasslands with some hedgerow loss. Given the proposed Biodiversity Management and Enhancement Plan (BMEP) in place, which will provide a 100% net gain of native hedgerow, and the creation of species rich calcareous grasslands which will provide increased, linked-up areas of foraging for fauna, there is no potential for significant effects on the listed species as a result of the Proposed Project.

6.5.3.2.3 Horizontal Directional Drilling Impacts on Fauna

Updated faunal surveys were conducted along the Proposed Grid Connection underground cabling route on the 19th of August 2025. These included updated otter surveys and updated bat roost inspections of water crossing structures. Bat roost inspections were conducted using endoscope and thermal imaging under NPWS survey/roost disturbance licence. No evidence of bat roosts was found. There is no requirement for a derogation licence.

As described in Table 6-13 of the EIAR, no evidence of bat roosting was found in the bridge structure over the Clare River where HDD is proposed. The structure is a stone arch covered by a concrete bridge, with limited roosting potential and was prescribed *Negligible* suitability during updated surveys conducted.

No structural works are required for the bridge. Excavations associated with launch and reception pits will be set back from the bridge. In addition, the crossings are subject to existing traffic conditions. Noise and vibration from HDD drilling are not likely to be out of character with that associated with existing traffic conditions. In addition, the HDD works are temporary. No evidence of roosting bats was found in any of the water crossing structures inspected along the Proposed Grid Connection underground cabling route during 2023 or 2025 surveys. There is no potential for significant effect to fauna as a result of HDD works.

As stated in Section 6.5.2.2.1 of the EIAR as submitted,

During the roost inspection surveys undertaken of these structures, no bat roosts were found. Negligible to low bat roost suitability was identified in the structures. The methodology for the crossing of these structures would avoid any impacts on potential roosting sites within these structures.

No otter holts were identified in the vicinity of the HDD works area and the potential for disturbance to otter has been fully assessed in the Section 6.2.1.2 of the revised NIS.

It has been concluded that there is no potential for significant effects to any faunal species as a result of the proposed HDD works across water courses and the M17 crossing and no additional mitigation is necessary.

6.5.3.2.2 Insect Attraction to Turbines

The potential for insects and in turn bats to be attracted to turbines has been considered in preparation of this Report. A full suite of baseline surveys has been completed at the site as detailed in the original EIAR. The Proposed Wind Farm has been designed in accordance with industry guidance (NatureScot) to avoid the most significant areas of faunal habitat (i.e. woodlands, mature treelines and species rich habitats) which may be used by commuting and foraging bats. Additional mitigation to prevent potential bat attraction to turbines including the removal and maintenance of a vegetation-free bat buffer, as well as blade feathering is included. Blade feathering will be implemented at night when wind speeds are below the cut-in speed of the proposed turbine. This coincides with periods when bats are known to be most active i.e. lower wind speeds and has been shown to significantly reduce bat fatalities (by up to 50%) in some studies (NIEA, 2021). In addition, an adaptive mitigation and monitoring plan has been designed in line with relevant industry guidance, as outlined in Appendix 6-2, Section 6 of the Bat Report as submitted with the original EIAR.

6.5.3.2.3 Wake Effects on Fauna

The potential for wake effects from turbines to impact fauna has been considered. The Proposed Project has avoided key areas of value of fauna including badger and high value habitats that support insects and other species. The footprint of the Proposed Project is restricted to highly manged agricultural grassland. A bat impact assessment was carried out in the submitted EIAR in Chapter 6 Biodiversity. The potential for impact from wake effects such as barotrauma and collision mortality is assessed in Section 6.5.3.2.1 of the submitted EIAR. This impact has been assessed in line with NatureScot guidelines and based on the bat surveys, undertaken in line with the guidance, carried out at the Proposed Wind Farm site. A range of mitigation measures have been prescribed to ensure that there is no potential for significant effect on bats including blade feathering, implementation of bat vegetation buffers around turbines, and an adaptive operational mitigation monitoring plan.

Potential effects of wake which could indirectly impact fauna such as micrometeorology are considered here. Downward turbulence from turbines can alter the surface-atmosphere exchange of energy. This can lead to an increase in near surface air temperature and land surface temperature, particularly in grasslands. However, it has been concluded that overall, wind farm impacts on land surface temperature are small in magnitude compared to the background inter-annual variability[29]. Temperature-related effects do not occur at all wind farms. Effects exhibit seasonal variations, and depend on site characteristics, environmental conditions, and local factors such as topography and land use.

As discussed above, the footprint of the Proposed Project has been designed through an iterative process to avoid high value and species rich habitats and key infrastructure is restricted to species poor agricultural grassland. The areas of highest value for fauna have also been avoided. It is concluded that there is no potential for likely significant impact to fauna as a result of wake effects.

6.6 Cumulative Impact

The cumulative impact assessment has been undertaken in accordance with Guidelines on the Information to be Contained in Environmental Impact Assessments (EPA 2022) and European Commission (2021) Methodological guidance on Article 6(3) and 6(4) of the Habitats Directive.

[29] *Slawsky, L.M.; Zhou, L.; Baidya Roy, S.; Xia, G.; Vuille, M.; Harris, R.A. Observed thermal impacts of wind farms over northern Illinois. Sensors 2015, 15, 14981–15005. [CrossRef]*

Consideration has been given to Case Law C-392-96. The judgement states,

Thus, a Member State which establishes criteria and/or thresholds taking into account only of the size of projects, without also taking their nature and location into consideration, exceeds the limits of the discretion under Article 2(2) and 4(2) of the Directive. This is true also where a Member State establishes criteria and/or thresholds at a level such that, in practice, all projects of a certain type are exempted in advance from the requirement of an impact assessment...Not taking account of the cumulative effect of projects means in practice that all projects of a certain type may escape the obligation to carry out an assessment when, taken together, they are likely to have significant effects on the environment within the meaning of Article 2(1) of the Directive.

The nature and location of the Proposed Project as well as the nature and location of other projects in the vicinity have been taken into consideration during the cumulative impact assessment. A long list of planning applications in the vicinity of the Proposed Project has been considered and provided in Appendix 2-3 of the EIAR and Appendix 6 of the NIS as submitted. An updated long list is also considered in the revised NIS in Appendix 6a and in Appendix 2-3a of the Report. The list considered small, non – EIA projects and the cumulative impact assessment has not been restricted to projects of a similar size or nature to the Proposed Project. Assessment material for the cumulative impact assessment was gathered through a search of relevant online Planning Registers and the EIA portal, reviews of relevant EIAR, NIS, (or historical EIS) documents, planning application details and planning drawings, and served to identify past and future projects, their activities and their environmental impacts.

The geographical location of the Proposed Project relative to other projects has been considered and the geographical extent of the area considered has taken account of the key receptors and impact pathways identified as part of the Proposed Project. The cumulative impact assessment procedure was carried out according to the identified impact pathways and Key Ecological Receptors including birds, bats and hydrology, amongst others. NatureScot guidelines have been applied with respect to the cumulative impact assessment of the Proposed Wind Farm project on bats and birds.

The land-uses surrounding the Proposed Project are also considered as set out in Section 6.6.2.4 of the EIAR and Section 8.1.3.3 of the NIS.

Therefore, a full cumulative impact assessment has been carried out of the Proposed Project.

6.6.1.1 Cumulative Impact of Noise on Biodiversity

The Proposed Wind Farm site in its existing state is a highly modified agricultural environment which is regularly subject to anthropogenic noise in the form of farming activities and livestock management and machinery. The Site is also adjacent to a public road network including the N83 National Road.

The construction phase of the Proposed Project has the most potential to produce anthropogenic noise and add to cumulative noise effects. As discussed in Section 12.5.2.1.1 within the Noise Chapter of the submitted EIAR, noise mitigation measures have been prescribed to ensure that noise levels remain within the limits during construction and operation of the Proposed Project. There will be no blasting as part of the Proposed Project. The construction phase will be relatively short term and localised. Staff and machinery will be restricted to dedicated construction access routes.

The predicted operational noise levels of the turbines will be within the relevant best practice noise criteria curves for wind farms at all locations. Mitigations measures including noise monitoring and the provision of curtailment if required are prescribed for the operation of the Proposed Project within Chapter 12 of the EIAR.

Given the nature of the existing environment at the Proposed Wind Farm site, within a highly managed agricultural setting, as well as the Proposed Grid Connection along existing public roads, and the

recorded populations of fauna within the Site, no potential for cumulative effects as a result of noise disturbance to fauna are predicted.

7. BIRDS

This Addendum to the Birds Chapter of the EIAR includes an outline of the scope of surveys since the EIAR was submitted, the results and an updated impact assessment for relevant species. The additional survey data has been provided as surveying was ongoing at the Proposed Wind Farm.

7.2 Assessment Approach and Methodology

7.2.4 Field Surveys

Surveying has been ongoing at the Proposed Wind Farm site from October 2023 to March 2025 – data presented in EIAR Addendum Appendix 7-2a and 7-4a. Methodologies for these surveys followed those described in the EIAR as submitted, which included:

- Vantage Point Surveys
- Breeding Walkover Surveys
- Winter Walkover Surveys
- Breeding Raptor Surveys
- Waterbird Distribution and Abundance Surveys
- Hen Harrier Roost Surveys

7.3 Baseline Ornithological Conditions

7.3.7 Field Survey Results

Further field surveys were undertaken during the survey period, October 2023 to March 2025, consisting of two winter seasons and one breeding season. A summary of the results of these further surveys is provided below for each of the KORs identified in the EIAR as submitted.

The results of the updated survey data are not significantly different from the results from the EIAR as submitted.

7.3.7.1 Golden Plover

Survey	Total number of records	Average and peak count per observation	Activity of note
Vantage Point Surveys	26	34 (125)	The majority of observations comprised birds travelling, circling and foraging. There were seven observations of birds dropping to the ground within 500m of the Proposed Wind Farm site, comprising flock sizes of between 2 – 82 birds.
Winter Walkover Surveys	9	21(42)	There were seven observations of between 1 and 42 birds recorded travelling and calling over the Proposed Wind Farm site and an additional two observations recorded utilizing habitats on Proposed Wind Farm site
Waterbird Distribution and	2	33 (60)	There were two observations of birds flying between 5.7km and 8km from the Proposed Wind Farm site.

Survey	Total number of records	Average and peak count per observation	Activity of note
Abundance Surveys			
Incidental Records	9	58 (200)	The majority of observations were of flocks in flight over the Proposed Wind Farm site with one observation landing in a field within 700m of the Proposed Wind Farm site.

7.3.7.2 Hen Harrier

Survey	Total number of records	Average and peak count per observation	Activity of note
Vantage Point Surveys	1	1 (1)	Single observation of an individual travelling low over the Proposed Wind Farm site.
Hen Harrier Roost Survey	2	1 (1)	Two individual birds were observed travelling – one on site and one approximately 5km away.

7.3.7.5 Peregrine

Survey	Total number of records	Average and peak count per observation	Activity of note (including months observed)
Vantage Point Surveys	7	1 (1)	There were seven observations of individual birds recorded travelling, hunting and perched on Proposed Wind Farm site.
Winter Walkover Surveys	1	1 (1)	There was one observation of an individual bird recorded travelling over the Proposed Wind Farm site.
Incidental Records	5	1 (2)	There was one observation of an individual bird recorded travelling over the Proposed Wind Farm site and an additional four observations of individuals hunting, perched and calling up to 5km from the Proposed Wind Farm site.

7.3.7.6 Whooper Swan

Survey	Total number of records	Average and peak count per observation	Activity of note
Vantage Point Surveys	3	5 (9)	There were two observations of one and six birds recorded travelling over the Proposed Wind Farm site with an additional observation of nine birds travelling within 500m of the Proposed Wind Farm site.
Winter Walkover Surveys	2	3 (4)	Two observations were recorded of birds travelling over the Proposed Wind Farm site, comprising groups of two and four individuals, respectively.
Waterbird Distribution and Abundance Surveys	5	22 (115)	There were 34 observations recorded between 2.5km and 5.5km from the Proposed Wind Farm site, with flock sizes ranging from 2 to 115 birds. Most records related to foraging activity.
Incidental Records	4	25 (70)	Incidental observations included four flocks ranging from 1 to 70 birds, with two recorded over the Proposed Wind Farm site and two additional

Survey	Total number of records	Average and peak count per observation	Activity of note
			records approximately 500m and 6km from the Proposed Wind Farm site.

7.3.7.7 Black-headed Gull

Survey	Total number of records	Average and peak count per observation	Activity of note
Vantage Point Surveys	29	3 (8)	There were 27 observations of flocks ranging from one to eight birds recorded travelling over the Proposed Wind Farm site, with a further two records of groups (two and seven birds) utilising on-site habitats.
Breeding Walkover Surveys	4	3 (6)	There were four observations of between one and six birds recorded travelling over and utilising habitats on the Proposed Wind Farm site.
Winter Walkover Surveys	2	6 (8)	There were two observations comprised of three and eight birds recorded travelling over and forging on the Proposed Wind Farm site.
Waterbird Distribution and Abundance Surveys	76	21 (150)	A total of 76 records were documented between 2km and 7km from the Proposed Wind Farm site, with individual observations ranging from 1 to 150 birds. The majority of observations were recorded as foraging, roosting, or travelling.
Incidental Records	16	7 (47)	A total of 16 incidental observations, involving between 1 and 47 birds, were recorded both on-site and up to 6km away from the Proposed Wind Farm site, with the majority of the birds observed travelling, foraging, and calling.

7.3.7.8 Common Gull

Survey	Total number of records	Average and peak count per observation	Activity of note
Vantage Point Surveys	17	5 (17)	There were 17 observations of between 1 and 17 birds travelling over the Proposed Wind Farm site and up to 300 meters from the site boundary.
Breeding Walkover Surveys	1	6	A single observation of an individual travelling over the Proposed Wind Farm site
Waterbird Distribution and Abundance Surveys	29	107 (226)	A total of 29 observations were recorded between 1.6km and 7.7km away from the Proposed Wind Farm site, involving between 1 and 226 birds, with the majority of observations roosting, foraging, flying, or resting.
Incidental Records	4	60 (81)	Five incidental observations, involving between 1 and 120 birds, were recorded on-site and up to 800 meters from the Proposed Wind Farm site. All observations were recorded foraging, travelling, or roosting.

7.3.7.10 Lesser Black-backed Gull

Survey	Total number of records	Average and peak count per observation	Activity of note
Vantage Point Surveys	132	4 (80)	A total of 132 observations, involving between 1 and 80 birds, were recorded on-site and up to 800 meters from the Proposed Wind Farm site boundary. The majority of observations were noted as travelling, with the rest recorded as calling, soaring, circling or foraging.
Breeding Walkover Surveys	13	4 (25)	There were 13 observations, involving between 1 and 25 birds, recorded on-site and up to 600 meters from the Proposed Wind Farm site. All observations were recorded foraging and travelling
Winter Walkover Surveys	12	4 (27)	There were 12 observations, involving between 1 and 27 birds, recorded within the Proposed Wind Farm site. The majority of observations were noted as travelling, with the rest recorded as foraging, soaring, or perching.
Waterbird Distribution and Abundance Surveys	60	15 (170)	A total of 60 observations, involving between 1 and 170 birds, were recorded between 1.1 km and 8.3 Km from the Proposed Wind Farm site. The majority of observations were of birds roosting, travelling, foraging, resting, and swimming.
Incidental Records	59	4 (28)	There were 59 incidental observations, involving between 1 and 28 birds, recorded on-site and up to 7 Km from the Proposed Wind Farm site, with all observations noting birds travelling

7.3.7.12 Kestrel

Survey	Total number of records	Average and peak count per observation	Activity of note
Vantage Point Surveys	57	1 (2)	There were 57 observations, each involving between one and two birds, recorded within the Proposed Wind Farm site, with the predominant activities being travelling and hunting. There were also signs of breeding activity, with an adult carrying prey and a food pass being observed. Breeding activity is discussed in further detail in the response to submissions.
Breeding Walkover Surveys	4	1 (1)	There were four observations of birds within the Proposed Wind Farm site, with the majority of the activity being hunting, and one instance of mobbing.
Winter Walkover Surveys	5	1 (1)	There were five observations of individual birds hunting, travelling, perched, and being mobbed, recorded on-site and up to 200 meters from the Proposed Wind Farm site.
Incidental Records	17	1 (2)	There were 17 observations of between one and two birds recorded on-site and up to 6.5km from the Proposed Wind Farm site, with the majority of them noted as hunting, travelling, or perched.

7.3.7.13 Lapwing

Survey	Total number of records	Average and peak count per observation	Activity of note
Vantage Point Surveys	2	4 (6)	Two observations of groups of two and six birds travelling within the Proposed Wind Farm site were recorded in October 2024
Waterbird Distribution and Abundance Surveys	18	65 (180)	There were 18 observations of between 1 and 180 birds, foraging, roosting, or travelling, recorded between 3km and 7.6km from the Proposed Wind Farm site.
Incidental Records	1	60 (81)	One incidental observation was made of a group of 52 lapwing travelling approximately 5.6km from the Proposed Wind Farm site.

7.3.7.14 Snipe

Survey	Total number of records	Average and peak count per observation	Activity of note
Vantage Point Surveys	15	4 (18)	There were 15 observations of between one and 18 birds, recorded on-site and up to 200 metres from the Proposed Wind Farm site. All observations were recorded travelling, calling, or flushed.
Winter Walkover Surveys	11	2 (6)	There were 11 observations of between one and seven birds recorded within the Proposed Wind Farm site, with the birds either travelling or flushed, and the majority of these observations occurred in October 2024.
Incidental Records	9	2 (4)	There were nine observations of between one and four birds, recorded on-site and up to 8.8km from the Proposed Wind Farm site, with all observations recorded travelling or calling

7.3.7.16 Buzzard

Survey	Total number of records	Average and peak count per observation	Activity of note
Vantage Point Surveys	45	1 (3)	There were 45 observations of between one and three birds recorded on-site and up to 400 metres from the Proposed Wind Farm site, with activities including travelling, displaying, soaring, calling, and being mobbed.
Breeding Walkover Surveys	10	1 (1)	There were 10 observations of individual birds travelling, soaring, calling, and mobbed, recorded on-site and up to 300 metres from the Proposed Wind Farm site
Winter Walkover Surveys	5	1 (1)	There were five observations of individual birds travelling, hunting, perched, and flushed within the Proposed Wind Farm site
Breeding Raptor Surveys	16	1 (2)	Sixteen observations of between one and two birds were recorded on-site and up to 3.2km from the Proposed Wind Farm site, with behaviours including travelling, calling, soaring, and hunting.

Survey	Total number of records	Average and peak count per observation	Activity of note
			Evidence of breeding activity included two observations of birds carrying prey—one on-site and one approximately 2km away—and an observation of chicks begging around 2.2km from the site.
Incidental Records	22	1 (1)	There were 22 incidental observations of individual birds travelling, perched, flying, and mobbed, recorded on-site and up to 6.5km from the Proposed Wind Farm site

7.3.7.17 Sparrowhawk

Survey	Total number of records	Average and peak count per observation	Activity of note
Vantage Point Surveys	18	1 (1)	There were 18 observations of individual birds recorded on-site and up to 600m from the Proposed Wind Farm site. The majority of observations were recorded travelling. With some observations hunting, soaring, mobbed or perched.
Breeding Walkover Surveys	3	1 (1)	There were three observations of individual birds recorded on-site and up to 400 metres from the Proposed Wind Farm site. Two observations were recorded travelling and one observation indicated breeding activity through the carrying of prey.
Winter Walkover Surveys	1	2 (2)	There was one observation of two birds recorded travelling and displaying over the Proposed Wind Farm site.
Breeding Raptor Surveys	3	1 (1)	A total of three observations of individual birds was recorded; travelling and perched on site and up to 300m from the Proposed Wind Farm site.
Incidental Records	9	1 (1)	There were nine observations of individual birds traveling, hunting, or perched, recorded on-site or up to 6.5 kilometres from the Proposed Wind Farm site.

7.5 Potential Impacts

An updated collision risk assessment has been carried out, incorporating the data presented in the EIAR as submitted, and the updated 1.5 years of survey data (see Appendix 7-6a – Updated Collision Risk Assessment). An updated impact assessment is therefore provided below for relevant species. In the specific case of black headed gull, there has been no significant change to the collision risk impact, either from an individual project or a cumulative perspective. This is discussed in greater detail in the updated NIS.

The results of the updated 1.5 years of survey data are not significantly different from the results from the EIAR as submitted and, as such, they corroborate the findings of the EIAR as submitted.

7.5.2 Effects on Key Ornithological Receptors during Construction and Operation

7.5.2.1 Golden Plover (Winter)

This text provides additional information on golden plover collision risk.

Golden Plover Choice of Reference Population

To identify the relevant reference population, the key question that needs to be answered is where were the golden plover that were recorded onsite coming from and what population does that associate them with, i.e. the Lough Corrib SPA alone or the wider county population that includes the SPA. Why this is important when considering collision risk is outlined as follows.

A collision risk impact assessment is informed by the predicted number of collisions, however, a meaningful impact assessment cannot be undertaken with the predicted number of collisions alone. Context is needed. For example, one predicted collision for a population of one would be catastrophic whereas the same number of collisions is less important for a large population. In deciding what is an appropriate reference population for the impact assessment, a key consideration is whether the birds encountered onsite are part of a discrete local population or a larger population present throughout (suitable habitat) in the wider surroundings. Several other factors are typically considered, such as the behaviour of the species in question (are they a wide-ranging species), their habitat preference, whether the habitat is abundant and whether there is connectivity within the habitat. A relevant section in the impact assessment guidance produced by Percival (2003) outlines how "one issue in this process concerns the precise area or bird population against which the degree of impact should be judged. For protected SPAs this is usually quite straightforward, comprising simply the populations for which that site has been designated". However, there is a requirement to consider what proportion of the individuals recorded onsite are associated with the SPA if the proposed wind farm is located outside the SPA, e.g. all, some or none.

As stated in the NIS and Chapter 7 of the EIAR there is potential connectivity between the golden plover encountered at the Proposed Wind Farm site and the Lough Corrib SPA population. The question is, whether all golden plover encountered within the Proposed Wind Farm site were associated with the SPA or were they part of the larger county population (that includes the SPA). The NIS and EIAR's position is that the birds encountered at the site include birds from the SPA and birds from the wider county population. The rationale for this position is in line with Percival (2003) guidance (please see EIAR Chapter 7 Section 7.2.5 for guidance summary) and is as follows:

There are wintering golden plover in the county that are not associated with the Lough Corrib SPA, as evidenced by the results from the Irish Wetland Bird Survey (I-WeBS), for which golden plover have been recorded at 20 additional sites in the county outside of Lough Corrib SPA (as detailed in Section 7.4.1.1 of the EIAR as submitted).

Wintering golden plover is a mobile and widespread species (as per the Bird Atlas 2009-11) that utilises widespread habitat types (e.g. agricultural grassland) throughout much of Ireland (including Co Galway). It is, therefore, unlikely the birds encountered at the Proposed Wind Farm site form part of a distinct local population and reasonable to conclude that there is some exchange of individuals in suitable habitat within the county. Furthermore, the species is particularly abundant during the winter season in the western midlands of Ireland, including the east Co. Galway region (as per the Bird Atlas 2009-11).

There is also the potential for foraging golden plover from the Lough Corrib SPA to visit the Proposed Wind Farm site. The maximum foraging range of wintering golden plover is 12km (Gillings and Fuller,

1999). The Proposed Wind Farm site does not adjoin the Lough Corrib SPA, but it is within foraging range: the separation distance is ~3.6km.

There is abundant suitable habitat (e.g. agricultural grassland) throughout Galway, particularly to the east of Lough Corrib.

There is nothing unique about the agricultural grassland within the Proposed Wind Farm site, it is, therefore, reasonable to assume that the occurrence of golden plover within the grassland of the Proposed Wind Farm site is indicative of similar occurrences throughout similar habitats in other areas of the county. Particularly in the abundant agricultural grassland to the east of Lough Corrib.

There is no barrier to connectivity within this (largely contiguous) suitable habitat, it is therefore reasonable to assume that there is an exchange of individuals within the county.

The evidence of waterbird distribution and abundance surveys shows golden plover to be numerous in the wider surroundings of the Proposed Wind Farm site. Please see EIAR Appendix 7-4 Table 7-4-2 and associated figure 7.4.2). Birds were recorded in Lough Corrib but also within the network of wetland/turloughs and grassland sites to the north of the Proposed Wind Farm site, including Lough Hackett, Belclare Turlough, Turloughnaroyer and Bohercull Turlough. It should be noted that the birds encountered at these wetland sites are likely only a fraction of the birds that are present in grassland habitats in the wider surroundings of the Proposed Wind Farm site[30]. This is due to the foraging ecology of wintering golden plover that favours agricultural grasslands and other terrestrial habitats when foraging.

In summary, it is considered that the balance of evidence strongly suggests that at most only some of the golden plover recorded within the Proposed Wind Farm site are associated with the Lough Corrib SPA wintering population for which the site is designated. As stated in the EIAR, the birds encountered at the Proposed Wind Farm site are part of the larger county population that includes the SPA. It therefore follows that only a portion of the predicted collisions are associated with the SPA population.

Golden Plover Revised Collision Risk Assessment

A revised collision risk assessment was undertaken that incorporates data from a further 1.5 years of bird surveys. There is no significant change to the impact assessment conclusion from the revised collision risk assessment for wintering golden plover at the county level (i.e. low (Percival, 2003)/long-term slight negative (EPA, 2022) - see EIAR Addendum Appendix 7-5a for further detail).

As outlined in detail above, the best available evidence strongly suggests that the birds encountered at the Proposed Wind Farm site are part of the larger county population that includes the SPA. That is to say, only a portion of the birds encountered at the Proposed Wind Farm site are likely associated with the SPA. Notwithstanding this, consideration has been given to the potential collision risk for the SPA population alone.

As a first step, it was necessary to assume the falsehood that all golden plover encountered at the Proposed Wind Farm site and the associated collision risk are associated with the SPA population alone. To undertake the analysis, the predicted rate of collisions at the Proposed Wind Farm site (3 birds) was considered in the context of the Lough Corrib SPA population[31] (2,088) alone. Using this figure as the reference population, the predicted collisions at the Proposed Wind Farm site (as per EIAR Addendum Appendix 7-5a) would increase the annual mortality rate of the SPA population by 0.54% (this is a negligible collision rate). However, as previously discussed, the actual increase in

[30] As per Burke et al., (2018) in relation to the golden plover count, "these estimate must be treated as conservative on the bases that they are widely disturbed in a variety of wetland and non-wetland habitats that are under-sampled during I-WeBS.".
[31] NPWS (2023) Conservation Objectives: Lough Corrib SPA 004042. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage

mortality for the SPA population is highly likely to be considerably less than this, as only a portion of the golden plover recorded onsite are likely associated with the SPA. Therefore, no significant collision risk effects or adverse effects are predicted for the Lough Corrib SPA population of golden plover.

The above serves to further corroborate the finding of no significant collision risk effects for wintering golden plover as provided in the EIAR as lodged and no adverse effect for the golden plover of the Lough Corrib SPA. Notwithstanding this, a comprehensive suite of commencement/pre-construction and operational phase monitoring is proposed in Appendix 7-7 of the EIAR. The proposed monitoring programme was not proposed in response to any identified significant effect but rather 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 recommendations that may inform additional mitigation or adaptation if required.

7.5.2.2 Hen Harrier (Winter)

This section provides additional information on hen harrier collision risk. The collision risk from the revised collision risk assessment has been calculated at a rate of 0.001 collisions per year, or one bird every 1,683 years. That is to say, no collisions are predicted to occur over the 30- year life-time of the Proposed Project. It therefore follows that no significant collision risk effects are predicted for either the Lough Corrib SPA or the county population. It further follows that if there are no collisions predicted to occur during the 30- year life-time of the Proposed Project, such a low rate of predicted collisions (effectively zero) could not contribute to a significant cumulative effect. Therefore, no significant collision risk effects are predicted from either an individual project or a cumulative perspective.

7.5.2.3 Common Gull (Winter)

Breeding Common Gull Collision Risk

Concerns were raised regarding the potential for significant collision risk effects on breeding common gull, which are SCI species of the Lough Corrib SPA. This is addressed for both the breeding and non-breeding seasons as the suggestion was that some of the non-breeding/wintering birds could be part of the breeding population.

Breeding Season

As outlined in the Lough Corrib SPA site-specific conservation objectives, there is a population of 137 pairs of common gull breeding on the lough[32]. Primarily in the mid and upper parts of the lough. However, as evidenced by a comprehensive suite of surveys, these birds only very rarely visit the Proposed Wind Farm site. In four years of vantage point surveying, a single bird on a single occasion was recorded during the breeding season. Please see EIAR Section 7.3.7.8 and Appendix 7-6a of this Report for further details. Owing to this extremely low rate of occurrence within the Proposed Wind Farm site, no significant collision risk is predicted for common gulls during the breeding season and no adverse effect is predicted for the Lough Corrib SPA population.

Winter Season

A revised collision risk assessment has been undertaken for all KORs, including wintering common gull, incorporating data from a further 1.5 years of bird surveys (please see EIAR Addendum Appendix

[32] *https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004042.pdf*

7-6a for further information). There have been no significant changes in the predicted collisions to any KOR from this revised collision risk assessment, including common gull.

The collision risk for wintering common gull is not predicted to result in significant effects or adverse effects for the breeding common gull population that is an SCI for the Lough Corrib SPA based on the following rationale:

- The common gull encountered at the Proposed Wind Farm site during the winter are unlikely to be the same birds that breed within the Lough Corrib SPA. During the winter, much of the Irish breeding population leaves Ireland and there is a large influx of common gull into Ireland from continental Europe (Vernon J. D. R. 1969[33] and Hutchinson C.D. 1989[34]).
- Likely, the common gulls that were encountered at the Proposed Wind Farm site are immigrant individuals wintering in Ireland. Common gull is considerably more numerous during the winter (non-breeding season) than during the breeding season. As outlined in Article 12 reporting, there are nearly five times more common gulls in the winter months. Article 12 reporting further states that the reported winter population is likely an underestimate. This broader abundance during the winter months likely explains how the species could be effectively absent from the Proposed Wind Farm site in the breeding season but present in the winter months.

In summary, no significant or adverse (collision risk) effects are predicted for the breeding common gulls of the Lough Corrib SPA.

Common Gull Barrier Effect

Concerns were raised regarding the potential for significant barrier effects on breeding common gull, which are SCI species of the Lough Corrib SPA.

As evidenced by a comprehensive suite of surveys, common gull were effectively absent from the Proposed Wind Farm site during the breeding season. In four years of vantage point surveying, a single bird on a single occasion was recorded during the breeding season. Please see EIAR Section 7.3.7.8 and Appendix 7-4a of the EIAR addendum for further details. Owing to this extremely low rate of occurrence within the Proposed Wind Farm site, no significant displacement or barrier effect is predicted for common gulls. As such, no mitigation is required.

7.5.2.10 Kestrel (All seasons)

Kestrel Nest Site

Clarity was sought as to whether or not a kestrel nest site on an observer's land was included in surveys and the associated impact assessment.

In short, yes this breeding territory was identified during surveys as outlined in EIAR Appendix 7-5 and again in 2024 during the more recent surveys[35] (please see Appendix 7-5a for details). The observer's land is within the viewshed of Vantage Point 2 (please see EIAR Figure 7-1 for location details). In both cases, it is the more northern territory mapped that overlaps, approximately, with the observer's land. As outlined in Section 7.5.2.10 of the EIAR, the identified breeding territories were taken into consideration in the associated impact assessment. In summary, no significant habitat loss, disturbance,

[33] *J.D.R. Vernon (1969) Spring migration of the Common Gull in Britain and Ireland, Bird Study, 16:2, 101-107, DOI: 10.1080/00063656909476226*
[34] *Hutchinson, C.D. (1989) Birds in Ireland. Poyser, Calton*
[35] *Further surveying has been ongoing at the Proposed Wind Farm site from October 2023 to March 2025 – data presented in EIAR Addendum Appendix 7-2a and 7-4a.*

displacement or collision risk effects were predicted. Please see Section 7.5.2.10 of the EIAR for further details.

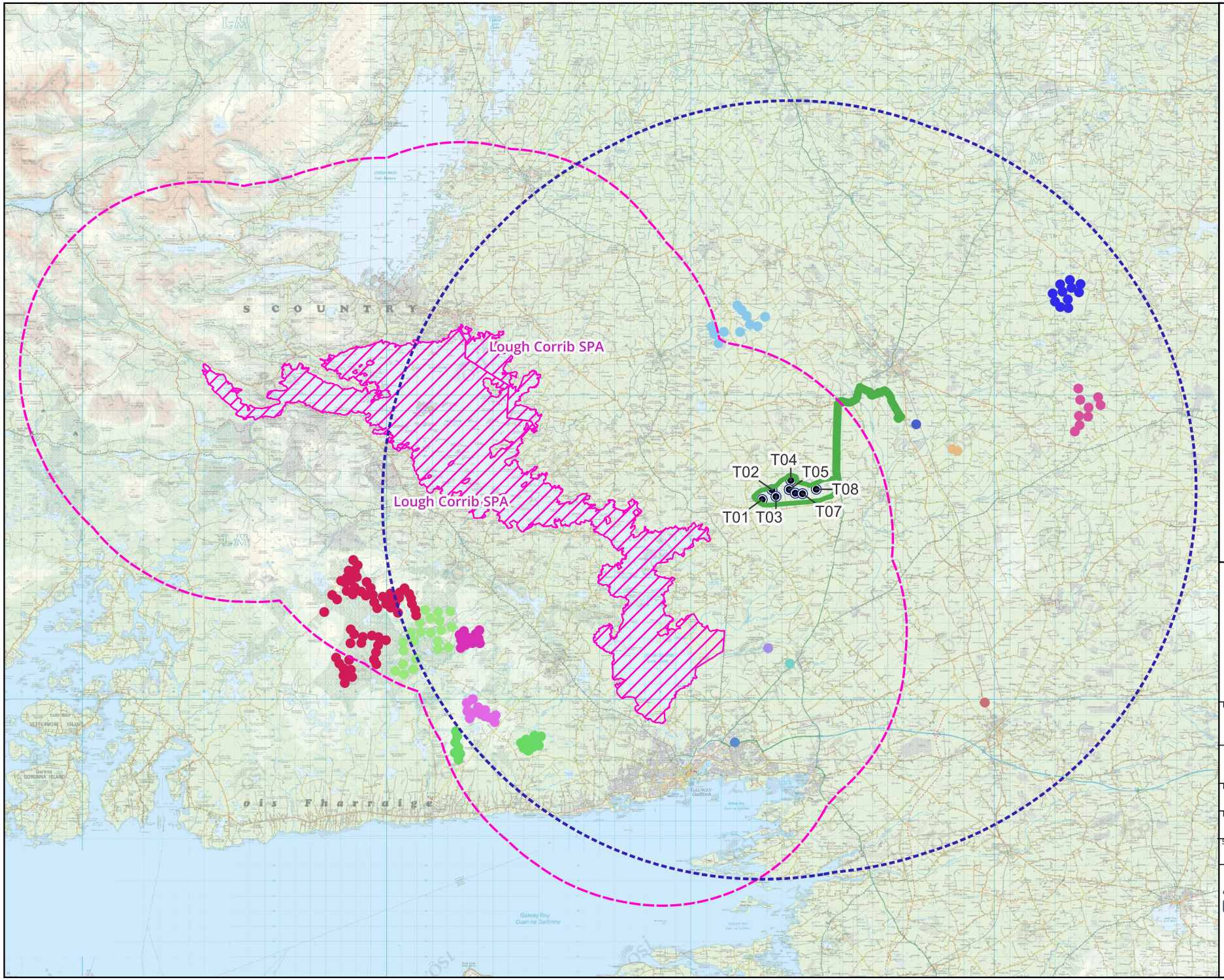
7.9.2 Assessment of Cumulative Effects – Proposed Wind Farm

Golden Plover Cumulative Collision Risk Effects

To undertake the requested cumulative assessment of collision risk for golden plover from the Lough Corrib SPA it was first necessary to identify where the SCI species is likely to encounter turbines. As outlined in the SPA Conservation Objectives the golden plover from the site forage in terrestrial habitats. During the winter season, foraging birds can travel 12km (Gillings and Fuller, 1999). Therefore, turbines that occur in suitable terrestrial habitats within the foraging range are most likely to be encountered. While the Department criticise the use of arbitrary reference areas, such as a 25km radius of the proposed turbines as per Section 7.9.1.2 of the EIAR, to evaluate impacts on SPA qualifying species like the golden plover, this 25km radius of the proposed turbines overlaps with the majority of the suitable terrestrial habitat within the foraging range of the SPA. Notwithstanding this, as it was requested, a review of wind farms within 12km of the SPA was undertaken. As previously outlined, there is abundant suitable habitat (e.g. agricultural grassland) throughout Galway, particularly to the east of Lough Corrib. And within this habitat, as outlined in Figure 4 below, there is a very low density of turbines. This area included two single turbines (Montiagh and Summerfield) at the southern end of Lough Corrib and the proposed Shancloon Wind Farm (Pre-Planning Stage - ABP Ref ABP 317307). Shancloon Wind Farm is approximately 12km from the Lough Corrib SPA. At such low densities of turbines, significant rates of collisions are unlikely. The rationale for this assessment is as follows.

- The two single turbines are not located particularly close to Lough Corrib, owing to their scale and distance from the SPA, impacts are predicted to be effectively zero.
- There are no reports yet on the proposed Shancloon Wind Farm planning file and as it is c.12km from the Lough Corrib SPA at the outer edge of sites with potential connectivity to the SPA. If it is very conservatively assumed (for the purposes of the cumulative assessment) that there is a similar rate of collisions at that wind farm as the Proposed Wind Farm (i.e. as per revised CRM - EIAR Addendum Appendix 7-5a: 3.049 collisions annually) predicted impacts would remain negligible. That is, if the rates of collisions were 3.049 and 3.049 respectively for each development per year it would mean that the combined losses would increase the annual mortality of the county population (c.4,423) by 0.51%. The predicted collision risk is negligible as per Percival (2003) criteria. As only a portion of the predicted collisions are likely to be associated with the SPA population, no adverse effects are predicted.
- While the 1% increase in background mortality referenced in Percival (2003) is often set as the threshold for judging significance, it is likely quite conservative. The threshold likely originates from a hunting threshold set by the European Commission (and referenced in EC, 2008)[36] and was not intended to indicate that all increases in mortality above 1% were significant. Among other reasons, the threshold was set at 1% by the European Commission because such losses are so low that they are within the margin of error from a mathematical point of view in population dynamics modelling studies. This context further limits the potential for significant cumulative collision risk effects to result or adverse effects on the SPA population of golden plover. The origin of the 1% threshold is summarised above and discussed at length in the recently permitted Castlebanny Wind Farm EIAR[37].

[36] *EC (2008). Guidance Document on Hunting under Council Directive 79/409/EEC on the Conservation of Wild Birds "The Birds Directive" Birds Directive". European Commission.*
[37] *https://castlebannyplanning.ie/*



Map Legend

- EIAR Site Boundary
- Proposed Turbine Locations
- Proposed turbine Location 25km Buffer
- Lough Corrib SPA
- Lough Corrib SPA 12km Buffer

Wind Energy Development within 12km of Lough Corrib SPA or 25km of Proposed Wind Farm

- Exisiting Ardderroo Wind Farm
- Proposed Clonberne Wind Farm
- Exisiting Cloonlusk Wind Farm
- Proposed Cooloo Wind Farm
- Exisiting Galway Wind Park
- Exisiting Knockalough Wind Farm
- Exisiting Knockranny Wind Farm
- Exisiting Leitir Guingaid Leitir Peic (LGLP) Wind Farm
- Proposed Shancloon Wind Farm
- Exisiting Atlantic Enterprises Ltd. Single
- Permitted Cloonascragh Single
- Exisiting Montiagh South Single
- Permitted Park Athenry Single
- Exisiting Summerfield Single

Drawing Title
Wind energy Development Within 25km as per Table 2-7

Project Title
Laurclavagh Renewable Energy Development

Drawn By	Checked By
KB	PC
Project No.	Drawing No.
210627	Figure 5-7
Scale	Date
1:325,000	2025-09-02

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The west side of Lough Corrib has a much higher density of turbines than the east. As provided in Figure 3 above, these turbines are concentrated in the forestry and blanket bog to the west of Oughterard, Co. Galway. These wind farms are within the potential foraging range (c.12km) of the Lough Corrib SPA and include Knockranny Wind Farm (Permitted), Lettergunnet Wind Farm, Letterpeak Wind Farm, Knockalough Wind Farm, Ardderroo Wind Farm and the Galway Wind Park. As outlined in EIAR Section 7.9.1.2.2, Knockranny Wind Farm, Ardderroo Wind Farm, Lettergunnet Wind Farm and Letterpeak Wind Farm identified golden plover as key ornithological receptors. Their EIS/EIARs include the following information:

- The Ardderroo Wind Farm (ABP Ref. 303086) is sited in a conifer plantation with very little suitable open habitat for golden plover. In two years of vantage point surveying golden plover were recorded on five occasions, although no flights were onsite. Collision risk was assessed to be effectively zero.
- On Knockranny Wind Farm (Pl Ref.13/829, Alterations proposed under Pl Ref. 23/225) golden plover were recorded during surveys however the potential for collisions was considered to be low.
- On Lettergunnet and Letterpeak Wind Farms (LGLP) (Pl ref. 10/1214 & 0/1225) Wind Farm only small numbers of wintering golden plover were recorded. No significant collision risk was predicted.

There are no other wind farms with the potential to significantly impact this species within 12km of the SPA.

As these wind farms do not occur in habitats that are likely to be visited by this species in large numbers or with any regularity, (e.g. they are not agricultural grassland) no significant collision risk is predicted. Collision rates are likely to be so low for this species on these sites as to be effectively zero.

In summary, following a review of wind farms within 12km of the Lough Corrib SPA the above findings serves to further corroborate the finding of no significant cumulative collision risk effects for golden plover as provided in the EIAR as lodged (Section 7.9.2.1 of the EIAR) and as per the NIS no adverse effect for the golden plover of the Lough Corrib SPA.

Cumulative Assessment of Red Listed Species

It was requested that there be a quantification of cumulative impacts on red-listed bird species using the land of the Proposed Wind Farm site over the decades. Red-listed species are those species of the highest conservation concern in Ireland due to their declining populations. This information is reported in Gilbert, G., Stanbury, A. and Lewis, A. (2021). Birds of Conservation Concern in Ireland 4: 2020-2026. *Irish Birds,* 43:1-22[38].

The following red-listed key ornithological species were recorded to use the Proposed Wind Farm site: golden plover, black-headed gull, kestrel, lapwing and snipe. As the same information was requested for hen harrier it is also included in this response text.

As outlined in Section 7.5.2 of the EIAR, the land lost to the development footprint is small (i.e. 13.8ha or 1.46% of Site area) relative to the total area within the Site. Habitat loss impacts can extend beyond the development footprint through disturbance and displacement. The area of disturbance/displacement is potentially avoided to a distance equal to or less than 500m (Pearce-Higgins *et al.* 2009), depending on the species. And to a distance of between 250-750m for hen harrier (Pearce-Higgins *et al.* 2009, Ruddick and Whitfield 2007). The area within 250m, 500m and 750m of the turbines is 156ha, 506ha and 855ha, respectively. Notwithstanding this, in order for there to be a significant habitat loss effect, there needs to be the loss of a scarce resource either on an individual project basis or cumulatively. In the present case, this is not the situation.

[38] *Available at: https://birdwatchireland.ie/birds-of-conservation-concern-in-ireland/*

The Proposed Wind Farm site is dominated by improved agricultural grassland. As outlined in Section 6.4.1.1.1 of the EIAR, all turbines (T1- T8), the temporary construction compound, substation, met mast and all internal site access tracks are located within improved agricultural grassland. These are species-poor grassland communities with relatively little recognised conservation value. It is not anticipated that there would be a land use change over the decades of the lifetime of the Proposed Wind Farm, i.e. the land would continue to be managed as improved agricultural grassland in the presence or absence of the Proposed Wind Farm. Improved agricultural grassland is one of the most abundant habitat types at a county and national level. Particularly so to the east of Lough Corrib. This abundance severely limits the potential for ecologically significant habitat loss effects to result on an individual project basis or cumulatively. Furthermore, not only the quantity of the habitat but also the quality is important. Improved agricultural grassland is typically considered of low ecological value. As previously stated, there is little conservation value within the areas of improved agricultural grassland.

In summary, it is proposed to construct a wind farm including all turbines (T1- T8), the temporary construction compound, substation, met mast, all internal site access tracks within improved agricultural grassland, which is a habitat of little ecological value and among the most abundant habitat types in Ireland. These specifics of the Proposed Wind Farm site and wider context severely limit the potential for ecologically significant effects to result on an individual project basis or cumulatively. As such, no significant cumulative effects are predicted for any key ornithological receptor species, including golden plover, black-headed gull, kestrel, lapwing and snipe, or hen harrier. The above quantification of habitat loss, discussion of quality of habitats and wider context serve to further corroborate the finding of no significant cumulative effects for golden plover, black-headed gull, kestrel, lapwing, snipe and hen harrier as provided in the EIAR as submitted (Section 7.9.2 of the EIAR).

8. LAND, SOILS AND GEOLOGY

8.1 Likely and Significant Effects on Land, Soils and Geology

8.1.2 Construction Phase - Likely Significant Effects and Mitigation Measures

8.1.2.8 Potential Effects due to rock blasting

There is no blasting proposed as part of the Proposed Project.

Residual Effect: There will be no residual effects, as blasting will not occur.

8.1.2.9 Potential Effects due to works near underground gas pipelines

As part of the Proposed Project, it will be necessary to complete excavation works near existing underground gas pipelines during the construction Phase. There is 1 no. crossing of this pipeline proposed, located between T3 and T5 near the centre of the site at E536244, N743608. The crossing will be completed as a flat bed crossing over the cable.

During the operational phase, medium voltage power lines will run through the site, between the turbines and the on-site substation. The electrical cabling will cross over the gas pipeline at the location listed above. In terms of the potential effects on the land and soils environment, the primary risk is through contamination of the soil and subsoil by hydrocarbons in the event of compromising an underground gas pipeline. As such mitigation measures will be put in place to ensure that there will be

no effects on the pipeline. Mitigation measures to prevent any effects on the underground gas pipelines are provided by Gas Networks Ireland within a guidance document for construction works near pipelines[39] which are included below.

Pathways: Migration of gas through soil and subsoil pore space.

Receptors: Soil and subsoil

Pre-Mitigation Potential Effect: Negative, significant, indirect, medium-term, likely effect on soil and subsoil.

Prior to the commencement of any works near the mapped gas pipelines, the following mitigation measures will be implemented:

- During the early stages of planning of the works contact will be made with Gas Networks Ireland Dial before you dig service and the relevant process followed as outlined in Gas Networks Ireland's "Code of Practice for working in the Vicinity of the Transmission Network (AO/PR/127);
- A safe distance will be maintained between the electrical installation/infrastructure and the buried pipeline;
- If the safe distance cannot be met, works will only begin once a risk assessment of the works has been completed and presented to GNI, with a subsequent written approval from GNI to proceed;
- Where a cable is to cross over a gas pipeline as at E536244, N 743608, the crossing methodology will be agreed with Gas Networks Ireland prior to the works; and,
- The electrical cabling will be installed 450mm below ground, while the gas transmission pipeline is installed at 1535mm below ground level.

Residual Effect: The mitigation measures outlined above will ensure that there will be no effect on the underground gas transmission pipeline during the construction phase of the Proposed Project, nor will there be any effect on the integrity of the pipe during the operational phase. As such, there will be no pathway for effects on the land, soils and geological environment. The residual effect will be a negative, imperceptible, direct, medium term, unlikely effect on the land and soils.

Significance of Effects: For the reasons outlined above, no significant effects on the land, soils and geological environment will occur during the works near the gas transmission pipeline.

9. WATER

9.4 Likely and Significant Effects and Mitigation Measures

9.4.2 Construction Phase – Likely Significant Effects

9.4.2.14 Potential Effects on surface watercourses from Horizontal Directional Drilling

The proposed locations where horizontal directional drilling will be utilised are:

- WC2 – Bridge crossing over River Clare

[39] *Gas Networks Ireland- Guidance for developing electrical infrastructure near gas transmission pipelines (April 2023)*

- Crossing under M17 motorway

The Proposed Grid Connection underground cabling route includes 1 no. new watercourse crossing at the River Clare, which will use HDD as the crossing methodology. The new proposed crossing over the River Clare is located at WC2, situated near E140951, N249733, adjacent to an existing bridge.

The crossing under the M17 motorway is not located near a watercourse, with the nearest river being the Sulleen river located 350m east of the crossing, with no small streams or ditches located near the crossing point. As such, the M17 crossing is not considered sensitive in terms of potential effects on the hydrological/hydrogeological environment, given the lack of any surface water connections and distances involved to nearby watercourses.

Section 4.7.2.9.4 of Chapter 4 of the EIAR details the methodology to be followed when using the HDD method of duct installation along the Proposed Grid Connection underground cabling route.

Pathways: Runoff and surface water flowpaths.

Receptors: River Clare, Glennafosha stream and associated downstream designated sites (Lough Corrib SAC).

Pre-Mitigation Potential Effect: Negative, moderate, indirect, temporary, unlikely effect on downstream surface water flows and surface water quality.

In addition to the mitigation measures incorporated in the EIAR (and Appenidces such as Appendix 4-5 CEMP) for the Proposed Grid Connection underground cabling route to ensure that there are no effects on downstream surface water quality as a result of the Proposed Grid Connection underground cabling route, prior to the commencement of cable trenching or crossing works the following temporary mitigation measures will be installed:

- No in-stream works are proposed, the drilling works will be done over a dry period, and if works occur outside the months of July to September (as required by IFI for in-stream works) the Applicant will be cognisant of the salmon spawning season, and will inform the IFI);
- The crossing works area will be clearly marked out with fencing or flagging tape to avoid unnecessary disturbance;
- There will be no storage of material / equipment or overnight parking of machinery inside the hydrological buffer zone;
- The area around the batching, pumping and recycling plant will be bunded using terram (as it will clog) and sandbags in order to contain any spillages;
- Drilling fluid returns will be contained within a sealed tank / sump to prevent migration from the works area;
- Spills of drilling fluid will be cleaned up immediately and contained in an adequately sized skip before been taken off-site;
- Daily monitoring of the compound works area, the water treatment and pumping system and the percolation area will be completed by a suitably qualified person during the construction phase.
- All necessary preventative measures will be implemented to ensure no entrained sediment, or deleterious matter is discharged to the watercourse, In the event that works are giving rise to sediment or deleterious matter discharging to watercourses, the ECoW or supervising hydrologist will stop all works. The source of the sediment, or deleterious matter will be identified and additional drainage measures will be installed in advance of works recommencing

Residual Effect: Proven and effective measures to mitigate the risk of releases of sediment have been proposed above and will break the pathway between the potential sources and the receptor. The

residual effect will be a negative, imperceptible, direct, short term, unlikely effect on surface water flows and surface water quality.

Significance of Effects: For the reasons outlined above, no significant effects on surface water flows and surface water quality in the River Clare/Glennafosha stream will occur and as such there will be no negative effects on downstream designated sites (Lough Corrib SAC).

9.4.2.15 Potential Effects due to works near underground gas pipelines

As part of the Proposed Project, it will be necessary to complete excavation works near existing underground gas pipelines during the construction Phase. There is 1 no. crossing of this pipeline proposed, located between T3 and T5 near the centre of the site at E536244, N743608 . The crossing will be completed as a flat bed crossing over the cable.

During the operational phase, medium voltage power lines will run through the site, between the turbines and the on-site substation, and continuing on along the Proposed Grid Connection route. The electrical cabling will cross over the gas pipeline at the location listed above. In terms of the potential effects on the land and soils environment, the primary risk is through contamination of the soil and subsoil by hydrocarbons in the event of compromising an underground gas pipeline. As such mitigation measures will be put in place to ensure that there will be no effects on the pipeline. Mitigation measures to prevent any effects on the underground gas pipelines are provided by Gas Networks Ireland within a guidance document for construction works near pipelines[40] which are included below.

Pathways: Groundwater pathways through soil, subsoil and bedrock pore space.

Receptors: Underlying groundwater aquifer (Clare-Corrib GWB)

Pre-Mitigation Potential Effect: Negative, significant, indirect, medium-term, unlikely effect on groundwater quality in the Clare-Corrib GWB.

Prior to the commencement of any works near the mapped gas pipelines, the following mitigation measures will be implemented:

- During the early stages of planning of the works contact will be made with Gas Networks Ireland Dial before you dig service and the relevant process followed as outlined in Gas Networks Ireland's "Code of Practice for working in the Vicinity of the Transmission Network (AO/PR/127);
- A safe distance will be maintained between the electrical installation/infrastructure and the buried pipeline;
- If the safe distance cannot be met, works will only begin once a risk assessment of the works has been completed and presented to GNI, with a subsequent written approval from GNI to proceed;
- Where a cable is to cross over a gas pipeline as at E536244, N743608, the crossing methodology will be agreed with Gas Networks Ireland prior to the works; and,
- The electrical cabling will be installed 450mm below ground, while the gas transmission pipeline is installed at 1535mm below ground level.

Residual Effect: The mitigation measures outlined above will ensure that there will be no effect on the underground gas transmission pipeline during the construction phase of the Proposed Project, nor will there be any effect on the integrity of the pipe during the operational phase. As such, there will be no pathway for effects on the groundwater environment. The residual effect will be a negative, imperceptible, direct, medium term, unlikely effect on the groundwater environment.

[40] *Gas Networks Ireland- Guidance for developing electrical infrastructure near gas transmission pipelines (April 2023)*

Significance of Effects: For the reasons outlined above, no significant effects on the hydrological or hydrogeological environment will occur during the works near the gas transmission pipeline.

10. AIR QUALITY

Following the publication of updated guidance as listed below, MKO have updated their Air Quality assessment methodology. This section of the Report provides an updated Air Quality chapter that aligns with the requirements of the new guidance and is intended to replace Chapter 10: Air Quality of the EIAR..

10.1.3 Relevant Guidance and Legislation

The air quality assessment is carried out in accordance with the EIA Directive 2011/92/EU as amended by Directive 2014/52/EU and having regard, where relevant, to guidance listed in Section 10.1.3 of the EIAR and updated guidance as listed below:

- Air Quality in Ireland Report 2023 (EPA, 2024)[41].
- European Environment Agency (2024) Europe's Air Quality Status 2024.[42]
- Guidance of the Assessment of Dust from Demolition and Construction (IAQM, 2024).

10.1.1 Air Quality Standards

The Ambient Air Quality Standards Regulations 2022 (S.I. No. 739/2022) remains aligned to the CAFÉ Directive and diverts to the CAFÉ Directive for the Limit values outlined in Table 10-1, the Assessment Thresholds in Table 10-2, the Ozone limits and Assessment Thresholds in Table 10-3 and Table 10-4 respectively.

Table 10-1 Revised Limit Values of the CAFÉ Directive 2008/50/EC (Source: https://airquality.ie/information/air-quality-standards)

Pollutant	Limit Value Objective	Averaging Period	Limit Value (ug/m3)	Basis of Application of Limit Value	Attainment Date
Sulphur dioxide (SO_2)	Protection of human health	1 hour	350	Not to be exceeded more than 24 times in a calendar year	1st Jan 2005
Sulphur dioxide (SO_2)	Protection of human health	24 hours	125	Not to be exceeded more than 3 times in a calendar year	1st Jan 2005
Sulphur dioxide (SO_2)	Protection of vegetation	Calendar year	20	Annual mean	19th Jul 2001
Sulphur dioxide (SO_2)	Protection of vegetation	1st Oct to 31st Mar	20	Winter mean	19th Jul 2001
Nitrogen dioxide (NO_2)	Protection of human health	Calendar year	40	Annual mean	1st Jan 2010

[41] *Environmental Protection Agency: Air Quality in Ireland 2023. (2024) Available at: https://www.epa.ie/publications/monitoring--assessment/air/air-quality-in-ireland-2023.php#:~:text=Summary%3A%20Air%20quality%20in%20Ireland,based%20WHO%20guidelines%20in%202023*

[42] *European Environmental Agency, Europe's Air Quality Status 2024. Available at: https://www.eea.europa.eu/publications/europes-air-quality-status-2024*

Nitrogen dioxide (NO_2)	Protection of human health	1 hour	200	Not to be exceeded more than 18 times in a calendar year	1st Jan 2010
Nitrogen monoxide (NO) and nitrogen dioxide (NO_2)	Protection of ecosystems	Calendar year	30	Annual mean	19th Jul 2001
Particulate matter 10 (PM_{10})	Protection of human health	24 hours	50	Not to be exceeded more than 35 times in a calendar year	1st Jan 2005
Particulate matter 10 (PM_{10})	Protection of human health	Calendar year	40	Annual mean	1st Jan 2005
Particulate matter 2.5 ($PM_{2.5}$) Stage 1	Protection of human health	Calendar year	25	Annual mean	1st Jan 2015
Particulate matter 2.5 ($PM_{2.5}$) Stage 2	Protection of human health	Calendar year	20	Annual mean	1st Jan 2020
Lead	Protection of human health	calendar year	0.5	Annual mean	1st Jan 2005
Carbon Monoxide	Protection of human health	8 hours	10,000	Not to be exceeded	1st Jan 2005
Benzene	Protection of human health	calendar year	5	Annual mean	1st Jan 2010

Table 10-2 Assessment Thresholds from CAFE Directive 2008/50/EC

Pollutant	Limit Value Objective	Averaging Period	Limit Value ($\mu g/m^3$)	Basis of Application of Limit Value
Sulphur dioxide (SO_2)	Upper assessment threshold for the protection of Human Health	24 hours	75	Not to be exceeded more than 3 times in a calendar year
Sulphur dioxide (SO_2)	Lower assessment threshold for the protection of human health	24 hours	50	Not to be exceeded more than 3 times in a calendar year
Nitrogen dioxide (NO_2)	Upper assessment threshold for the protection of human health	1 hour	140	Not to be exceeded more than 18 times in a calendar year

Pollutant	Limit Value Objective	Averaging Period	Limit Value ($\mu g/m^3$)	Basis of Application of Limit Value
Nitrogen dioxide (NO_2)	Lower assessment threshold for the protection of human health	1 hour	100	Not to be exceeded more than 18 times in a calendar year
Particulate matter 10 (PM_{10})	Upper assessment threshold	24 hours	35	Not to be exceeded more than 35 times in a calendar year
Particulate matter 10 (PM_{10})	Lower assessment threshold	24 hours	25	Not to be exceeded more than 35 times in a calendar year
Lead (Pb)	Upper assessment threshold	Calendar Year	0.35	-
Lead (Pb)	Lower assessment threshold	Calendar Year	0.25	-
Carbon Monoxide (CO)	Upper assessment threshold	8 hours	7000	-
Carbon Monoxide (CO)	Lower assessment threshold	8 hours	5000	-
Benzene (C_6H_6)	Upper assessment threshold	Calendar Year	3.5	-
Benzene (C_6H_6)	Lower assessment threshold	Calendar Year	2	-

Ozone is set out differently in the CAFE Directive in that it sets target values and long-term objectives for ozone rather than limit values. Table 10-3 presents the target values and long-term target value for ozone and Table 10-4 details the threshold values for Ozone.

Table 10-3 Target values for Ozone defined in Directive 2008/50/EC

Objective	Parameter	Target Value for 2010	Long- term Objective
Protection of human health	Maximum daily 8-hour mean	120 $\mu g/m^3$ not to be exceeded more than 25 days per calendar year averaged over 3 years	120 $\mu g/m^3$
Protection of vegetation	AOT40* calculated from 1-hour values from May to July	18,000 $\mu g/m^3.h$ averaged over 5 years	6,000 $\mu g/m^3.h$

** AOT40 is a measure of the overall exposure of plants to ozone. It is the sum of the excess hourly concentrations greater than 80 µg/m3 and is expressed as µg/m3 hours.*

Table 10-4 Threshold for Ozone Defined in Directive 2008/50/EC (source: https://airquality.ie/information/air-quality-standards and Directive 2008/50/EC)

Pollutant	Averaging Period	Threshold
Information Threshold	1-hour average	180 µg/m^3
Alert Threshold	1-hour average	240 µg/m^3

10.1.1.1 Air Quality and Health

In September 2024, the EPA published 'Air Quality in Ireland 2023' which reports that although Ireland met the current EU legal air quality limits in 2023, monitoring results were higher than the more stringent health-based WHO air quality guidelines for a number of pollutants including: particulate matter (PM), nitrogen dioxide (NO_2), sulphur dioxide (SO_2) and ozone (O_3). The main sources of these pollutants are the burning of solid fuel in towns and villages and traffic in cities. People's health and the health of the environment is impacted by these pollutants. Ireland's ambition in the 'Clean Air Strategy for Ireland' (discussed below) is to move towards alignment with the WHO Air Quality guidelines, this will be challenging but will have a significant positive impact on health. Despite comparing favourably with many other European countries, Ireland's 2023 monitoring results, if similar trends continue, would exceed the soon-approaching 2026 targets.

The European Environmental Agency (EEA) Report, 'Europe's Air Quality Status 2024 report highlights the negative effects of air pollution on human health. The report assessed that poor air quality in Europe accounted for premature deaths of approximately 238,000 people in the 27 EU Member States in 2020[43]. In 2020 in the European Union, 96% of the urban population was exposed to levels of fine particulate matter above the health-based guideline level set by the World Health organisation. Furthermore, in 2020 damaging levels of nitrogen deposition to ecosystems were exceeding in 75% of the total ecosystems that are in the EU-27. This represents a fall of 12% since 2005. The estimated effects on the population in Europe of exposure to NO_2 and O_3 concentrations in 2020 were around 49,000 and 24,000 premature deaths, respectively. From this, 490 Irish deaths were attributable to fine particulate matter ($PM_{2.5}$), 50 Irish deaths were attributable to nitrogen oxides (NO_2) and 70 Irish deaths were attributable to Ozone (O_3) (Source: *'Air Quality in Europe – 2022 Report',* EEA, 2022).

The EEA published a briefing[44] on Europe's air quality status in April 2023. This briefing presented the status of concentrations of pollution in ambient air in 2021 and 2022 for regulated pollutants in relation to both EU air quality standards and the 2021 WHO guideline levels. The assessment shows that, in spite of constant improvements, exceedances of air quality standards are common across the EU, with concentrations well above the latest WHO recommendations. PM_{10}, NO_2 and O_3 emissions, along with others including sulphur oxides, carbon monoxide, benzene and lead are produced during fossil fuel-based electricity generation and traffic in various amounts, depending on the fuel and technology used. Whilst there is the potential of such emissions to be generated from the construction, operational and decommissioning phases of the Proposed Project, mitigation measures will be implemented at the Site to reduce the impact from dust and vehicle emissions, which are discussed in Section 10.2.3 below.

The EEA published a briefing on Europe's air quality status in April 2024[45]. This briefing presented the status of concentrations of pollution in ambient air in 2022 and 2023 for regulated pollutants in relation to both EU air quality standards and the 2021 WHO guideline levels. The assessment shows that, in spite of constant improvements, exceedances of air quality standards are common across the EU, with

[43] *https://www.eea.europa.eu/publications/air-quality-in-europe-2022/*
44 Europe's air quality status 2023 briefing. <https://www.eea.europa.eu/publications/europes-air-quality-status-2023>
[45] *Europe's air quality status 2024 briefing. https://www.eea.europa.eu//publications/europes-air-quality-status-2024*

concentrations well above the latest WHO recommendations. These emissions, along with others including sulphur oxides (SO_x) are produced during fossil fuel-based electricity generation in various amounts, depending on the fuel and technology used, emissions from industry and power plants, vehicles emissions and transport fuels.

More recently a few key messages are outlined in the 'Air Quality Status Report 2025' published on the 09/04/2025 on the European Environment Agency web site [46] These are:

- EU air quality standards are still not fully met across Europe, despite ongoing overall improvements.
- Since 2011, all countries have reduced exposure of their urban population to fine $PM_{2.5}$ particles, the most harmful pollutant from a health perspective. Nevertheless, the vast majority (94%) of the EU urban population remains exposed to $PM_{2.5}$ concentrations above the World Health Organization guideline level, highlighting the need for additional measures to reduce the associated health risks.
- Many locations already have air quality concentrations below the new EU 2030 standards. But in order to meet these new standards everywhere, and based on current progress, additional measures to improve air quality, especially in cities, are likely to be needed.

A 2024 EPA report *'Ireland's State of the Environment Report'* [47] states that the pollutants of most concern are Fine Particulate matter ($PM_{2.5}$.), Nitrogen Dioxide (NO_2) and Ammonia (NH_3). The EPA 2024 report goes on to state that:

> *"The planned transition to more renewable energy sources, and away from combustion-sourced heating systems to electrification, is a shift that could see greenhouse gas emissions from industry significantly decrease.*
>
> *As a consequence of meeting these growing demands primarily with oil, natural gas, coal and peat, our energy system is highly dependent on fossil fuels. Ireland has made some progress in transforming the electricity system through the deployment of wind farms, with renewable energy currently providing more than 40% of electricity used. However, electricity represents only one-fifth of Ireland's energy use, and our transport and heating systems remain heavily reliant on fossil fuel systems, with lock-ins that need to be addressed.*
>
> *While Ireland's renewable energy share has increased from 10.7% in 2018 (reported in the last State of the Environment Report) to 13.1% in 2022, this is the lowest level in the EU (well below the EU average of 23.0%), and Ireland is not on track to meet the EU-wide binding target of 42.5% renewable energy share by 2030. Reaching the target of 80% renewable electricity by 2030, while ensuring a stable energy supply, will require new capacity, a more flexible grid and increased interconnectivity (EC, 2024).*
>
> *Established technologies, such as wind energy, solar photovoltaics and bioenergy, will be key in meeting short-term emission reduction targets (i.e. 2030), whereas significant growth in offshore wind infrastructure is expected to be the key essential element of future energy systems."*

The EPA also published a report in May 2025 providing details of emissions of air pollutants in Ireland in the period 1990 to 2023 and projected emissions of these pollutants for 2030[48]. The Key findings of the report with respect to assessment of targets are:

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[46] *https://www.eea.europa.eu/en/analysis/publications/air-quality-status-report-2025*
[47] *Environmental Protection Agency (2024). Irelands State of the Environment Report 2024)* <https://www.epa.ie/our-services/monitoring--assessment/assessment/irelands-environment/state-of-environment-report-/
[48] *Environmental Protection Agency (EPA). (2025). Ireland's Air Pollutant Emissions 1990–2030.* <https://www.epa.ie/publications/monitoring--assessment/climate-change/air-emissions/EPA-Air-Pollutant-Final-Report.pdf>

- Ireland is compliant with current and future emission reduction commitments for ammonia (NH3), non-methane volatile organic compounds (NMVOC), sulphur dioxide (SO2), nitrogen.
- oxides (NOx) and fine particulate matter (PM2.5).
- Ammonia emissions are projected to be in compliance out to 2030.
- An adjustment to NMVOC emissions is required in order to meet the required emission reduction commitment made in 2023.

The Proposed Project therefore represents an opportunity to further harness Ireland's significant renewable energy resources, with valuable benefits to air quality and in turn to human health. The consumption of fossil fuels for energy results in the release of particulates, sulphur dioxide and nitrogen dioxide to our air. The use of wind energy, by providing an alternative to electricity derived from coal, oil or gas-fired power stations, results in emission savings of carbon dioxide (CO_2), oxides of nitrogen (NO_x), and sulphur dioxide SO_2, thereby resulting in cleaner air and associated positive health effects.

Whilst there is the potential of such emissions to be generated from the construction, operational and decommissioning phases of the Proposed Project, mitigation measures will be implemented at this Site to reduce the impact from dust and vehicle emissions, which are discussed in Section 10.2 below.

Since the publication of the Clean Air Strategy 2023, the Clean Air strategy for Ireland *First Progress Report* 2024 was released. This report detailed the significant progress that has been made on the actions in the strategy since its publication in April 2023. The key takeaways that have been implemented since the publication of the strategy include, the operational use of the Air Pollution Act 1987 (Solid Fuels) which has seen significant air quality improvements made in areas prone to burning solid fuels, however it is too premature to quantify the exact impacts. The strategy saw a push for the submission of Ireland's second National Air Pollution Control Programme completed in May 2024 and the development of new public awareness campaigns. The strategy has furthermore increased the frequency and financial supports given to local authorities to conduct sulphur testing[49].

10.1.3 Air Quality Zones

10.1.3.2 Air Quality Data Review

The EPA publishes Air Monitoring Station Reports for monitoring locations in all four Air Quality Zones. The most recent report on air quality in Ireland, 'Air Quality in Ireland 2023' was published by the EPA in 2024[50]. The EPA reports provide SO_2, PM_{10}, NO_2 and O_3 concentrations for areas in Zone D. These are detailed in the Section 10.1.3 below.

10.1.3.3 Dust

The Institute of Air Quality Management in the UK (IAQM) guidance document '*Guidance on the Assessment of Dust from Demolition and Construction*' (2024) (hereafter referred to as 'IAQM 2024 Guidance') was considered in the dust impact assessment. The guidance document outlines an assessment method for predicting the impact of dust emissions from construction activities based on the scale and nature of the works and the sensitivity of the area to dust impacts. This methodology has been used to predict the likely risk of dust as a result of the construction phase works, operational phase activities and decommissioning phase. The use of UK guidance is considered best practice in the absence of applicable Irish guidance. The major dust generating activities are divided into four types within the IAQM 2024 Guidance to reflect their different potential impacts. These are:

[49] *Clean Air Strategy For Ireland First Progress Report 2024*
[50] *Environmental Protection Agency: Air Quality in Ireland 2022. Available at: https://www.epa.ie/publications/monitoring--assessment/air/air-quality-in-ireland-2023.php#:~:text=Ireland%20met%20the%20current%20EU,and%20ozone%20(O3)*

- Demolition (There are no demolition works required for any phase of the Proposed Project);
- Earthworks;
- Construction;
- Trackout - The transport of dust and dirt from the construction / demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. This arises when Heavy Goods Vehicles (HGVs) leave the construction / demolition site with dusty materials, which may then spill onto the road, and/or when HGVs transfer dust and dirt onto the road having travelled over muddy ground on site.

The magnitude of dust generating activities is divided into 'Large', 'Medium' or 'Small' scale depending on the nature of the activities involved. The IAQM 2024 Guidance provides example definitions for the scale of the activities, and these are applied for this development as outlined in Table 10-5

Table 10-5 Description of magnitude for nature of activities

	Large	Medium	Small
Demolition	Total building volume >75,000 m^3, potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >12 m above ground level	Total building volume 12,000 m^3 – 75,000 m^3, potentially dusty construction material, demolition activities 6-12m above ground level	Total building volume <12,000 m^3, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <6 m above ground, demolition during wetter months
Earthworks	Large: Total site area >110,000 m^2, potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >6m in height	Total site area 18,000 m^2 – 110,000 m^2, moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 3m - 6m in height	Total site area <18,000 m^2, soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <3 m in height
Construction	Total building volume >75,000 m^3, on site concrete batching, sandblasting	Total building volume 12,000 m^3 – 75,000 m^3, potentially dusty construction material (e.g. concrete), on site concrete batching	Total building volume <12,000 m^3, construction material with low potential for dust release (e.g. metal cladding or timber)
Trackout	>50 HDV (>3.5t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100 m	20-50 HDV (>3.5t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50 m – 100 m	<20 HDV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50 m

	Large	Medium	Small
	Note: A vehicle movement is a one way journey. i.e. from A to B and excludes the return journey. HDV movements during a construction project vary over its lifetime, and the number of movements is the maximum not the average		

The earthwork requirements as outlined in Chapter 4 of the EIAR results in the classification of the Proposed Wind Farm as 'Large' for Earthworks and Construction activities. The Proposed Grid Connection falls under the classification of 'Medium' for Earthworks and Construction due to the lower volumes of construction material required. The number of heavy-duty vehicle movements per day, as outlined in Section 14.1 in Chapter 14 Material Assets of the EIAR, results in the classification of the Proposed Wind Farm as 'Large' and Proposed Grid Connection as 'Medium' for Trackout activities.

The magnitude of each activity is combined with the overall sensitivity of the area to determine the risk of dust impacts from site activities.

10.1.3.3.1 *Defining the Sensitivity of the Area*

For the purposes of this assessment, high sensitivity receptors are residential properties and dust sensitive ecological habitats. Commercial properties and places of work are regarded as medium sensitivity while low sensitivity receptors are places where people are present for short periods or do not expect a high level of amenity.

The IAQM 2024 Guidance has outlined three types of effects to be considered:

- Sensitivities of People to Dust Soiling Effects
- Sensitivities of People to the Health Effects of PM_{10}
- Sensitivities of Receptors to Ecological Effects

Sensitivities of People to Dust Soiling Effects

Dust soiling effects can occur for a distance of 250m from Proposed Project works areas, but the majority of deposition occurs within the first 50m (IAQM 2024 Guidance). Table 10-6 below identifies the sensitivity of an area to dust soiling effects on people and their properties, relative to different receptor sensitivities.

Table 10-6 Sensitivity of the Area to Dust Soiling Effects on People and Property. Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024)

Receptor Sensitivity	Number Of Receptors	Distance from source (m)			
		<20	<50	<100	<250
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Sensitivities of People to the Health Effects of PM_{10}

When assessing sensitivity of people to the health effects of PM_{10}, the IAQM 2024 Guidance recommends the use of sensitivities bands based on whether or not the receptor is likely to be exposed to elevated concentrations of PM_{10} over a 24-hour period. Table 10-7 below identifies the sensitivity of an area to human health effects of PM_{10}, relative to different receptor sensitivities.

Table 10-7 Sensitivity of the Area to Human Health Impacts. Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024)

Receptor Sensitivity	Annual Mean PM_{10} concentration	Number Of Receptors	Distance from source (m)			
			<20	<50	<100	<250
High	>32 µg/m^3	>100	High	High	High	Medium
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
	28-32 µg/m^3	>100	High	High	Medium	Low
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
	24-28 µg/m^3	>100	High	Medium	Low	Low
		10-100	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	<24 µg/m^3	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low

Receptor Sensitivity	Annual Mean PM_{10} concentration	Number Of Receptors	Distance from source (m)			
			<20	<50	<100	<250
Medium	>32 µg/m^3	>10	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	28-32 µg/m^3	>10	Medium	Low	Low	Low
		1-10	Low	Low	Low	Low
	24-28 µg/m^3	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
	<24 µg/m^3	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Low	-	≥1	Low	Low	Low	Low

Sensitivities of Receptors to Ecological Effects

Dust deposition due to demolition, earthworks, construction and trackout has the potential to physically and chemically affect sensitive habitats and plant communities. Table 10-8 below identifies the sensitivity of an area to ecological impacts.

Table 10-8 Sensitivity of the Area to Ecological Impacts. Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024)

Receptor Sensitivity	Distance from source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

There are no sensitive habitats, as described by the IAQM 2024 Guidance within 50m of the Proposed Wind Farm. Therefore, dust impacts on ecological receptors in relation to the Proposed Wind Farm have been scoped out from this assessment.

Defining the Risk of Impacts

The dust emission magnitude is combined with the sensitivity of the area to determine the risk of impacts with no mitigation applied. The matrices in Table 10-9, Table 10-10 and Table 10-11 provide a method of assigning the level of risk for each activity.

Table 10-9 Risk of Dust Impacts - Earthworks (IAQM, 2024)

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table 10-10 Risk of Dust Impacts - Construction

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table 10-11 Risk of Dust Impacts - Trackout

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

The risk of dust impacts for the Earthworks, Construction and Trackout activities from the Proposed Project is set out in Section 10.3 below.

EPA classification terminology as presented in Table 1-2 of Chapter 1 of the EIAR have been correlated with the equivalent risk rating from Table 10-12 below.

Table 10-12 Correlation of Impact Classification Terminology (EPA, 2022) to Risk Rating

EPA Term	EPA Description	Risk Rating
Imperceptible	An effect capable of measurement but without significant consequences	Negligible

EPA Term	EPA Description	Risk Rating
Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities	Low
Moderate	An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends	Medium
Significant	An effect, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment	High

10.1.4 Baseline Air Quality

The air quality zone for the Site was selected, followed by a review of EPA collated baseline air quality data namely Sulphur Dioxide (SO_2), Particulate Matter (PM_{10}), Nitrogen Dioxide (NO_2), Carbon Monoxide (CO) and Ozone (O_3) for the selected air quality zone to determine the representative levels of such emissions for the Proposed Project.

The EPA has designated four Air Quality Zones for Ireland:

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

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

10.1.4.1 Sulphur Dioxide (SO_2)

The Sulphur dioxide data from Cork Harbour, Kilkitt, Askeaton, Edenderry and Letterkenny in 2023 is presented in Table 10-13.

Table 10-13 Sulphur Dioxide Data for Zone D Sites in 2023

Parameter	Measurement (ug/m^3)
Annual Mean	4.3 µg/m^3
Hourly values > 350	0
Hourly max (Average)	80.9 µg/m^3
Daily values > 125	0
Daily max (Average)	23.2

During the monitoring period there were no exceedances of the daily limit values for the protection of human health. As can be observed from Table 10-13 the average maximum hourly value recorded during the assessment period was 80.9 µg/m^3. In addition, there were no exceedances of the annual mean limit for the protection of ecosystems. It is expected, based on professional judgement that SO_2 values at the Site are similar or lower than those recorded for the Zone D sites above.

10.1.4.2 Particulate Matter (PM_{10})

Sources of particulate matter include vehicle exhaust emissions, dust from soil and road surfaces, construction works and industrial emissions. The Air Quality in Ireland 2023 report[51] provides annual mean PM_{10} concentration for sixteen Zone D towns: Tipperary Town, Carrick-on-Shannon, Askeaton, Enniscorthy, Birr, Macroom, Castlebar, Cobh Carrignafoy, Claremorris, Kilkitt, Cavan, Roscommon Town, Edenderry, Mallow, Longford, Cobh Cork Harbour and Killarney Particulate matter (PM_{10}) data for 2023 is presented in Table 10-14.

Table 10-14 Average Particulate Matter (PM_{10}) Data for Zone D Sites in 2023

Parameter	Measurement (ug/m3)
Annual Mean	10.9 µg/m^3
% Data Capture (Average)	91.3%
Values > 50 ug/m^3	Max 6 (Edenderry)
Daily Max (Average)	44.2 µg/m^3

The daily limit of 50 µg/m^3 for the protection of human health was exceeded on 40 days, which is greater than the PM_{10} daily limit for the protection of human health of a max 35 days >50 µg/m^3 applicable from 2005. The greatest number of exceedances occurred at Edenderry where the PM_{10} daily limit was exceeded on 10 no. occasions. In the Air Quality in Ireland 2023 report, it notes that there were breaches in the levels of particulate matter (PM), which in Ireland, mainly comes from the burning of solid fuel, such as coal, peat, and wood to heat our homes. It is expected, based on professional judgement, that PM_{10} values at the Site is similar or lower than those recorded for the Zone D sites above.

10.1.4.3 Nitrogen Dioxide (NO_2)

Nitrogen dioxide data for Birr, Castlebar, Carrick-on-Shannon, Edenderry, Emo Court and Kilkitt in 2023 is presented in Table 10-15.

Table 10-15 Average Nitrogen Dioxide Data for Zone D Sites in 2023

Parameter	Measurement
Annual Mean (Average)	8.1 µg/m^3
NO_2 Values >200	0
Values > 140 (UAT)	1
Values >100 (LAT)	4
Hourly Max. (Average)	67.6 µg/m^3

The annual NO_2 value was below the annual mean limit value for the protection of human health of 40 µg/m^3. The lower assessment threshold of 100 µg/m3 was exceeded 4 no. times during the monitoring period in Emo Court, Co. Laois and the upper assessment threshold of 140 µg/m^3 was exceeded once during the monitoring period, also in Emo Court, Co. Laois. Both did not exceed the 18 days limit during the monitoring period. In 2022, no other monitoring locations in Zone D had exceedances in the lower and upper assessment thresholds of 100 and 140 µg/m^3. The average hourly max. NO_2 value

[51] *EPA (2024). Air Quality in Ireland 2023.*

of 67.6 µg/m^3 measured during the monitoring period was below the hourly max threshold of 200 µg/m^3. It is expected based on professional judgement that NO_2 values at the Site is similar or lower than those recorded for the Zone D sites above.

10.1.4.4 Carbon Monoxide (CO)

The EPA Report provides rolling 8-hour carbon monoxide concentrations for Birr, a Zone D site. Carbon Monoxide data for 2023 is presented in Table 10-16.

Table 10-16 Carbon Monoxide Data for Birr – Zone D Site in 2023.

Parameter	Measurement
Annual Mean	0.6 mg/m^3
Median	0.6 mg/m^3
% Data Capture	99.8%
Values > 10	0
Max	2.2 mg/m^3

The average concentration of carbon monoxide was 0.6 mg/m^3. The carbon monoxide limit value for the protection of human health is 10,000 µg/m^3 (or 10 mg/m^3). On no occasions were values in excess of the 10 mg/m^3 limit value set out in Directive 2008/50/EC. It is expected based on professional judgement that the CO value at the Site is similar or lower than those recorded for the Zone D site above.

10.1.4.5 Ozone (O_3)

The EPA report provides rolling 8-hour ozone concentrations for seven Zone D sites, Emo Court, Kilkitt, Carnsore Point, Mace Head, Castlebar, Valentia and Malin Head. Ozone (O_3) data for 2023 is presented in Table 10-17. As can be observed from Table 10-17 there were 10 no. exceedances of the maximum daily eight-hour mean limit of 120 µg/m^3. The CAFE Directive stipulates that this limit should not be exceeded on more than 25 days per calendar year averaged over 3 years. It would be expected on professional judgement that O_3 values at the Site would be similar or lower than those recorded for the Zone D sites below.

Table 10-17 Average Ozone Data for Zone D Sites in 2022.

Parameter	Measurement
Annual Mean	61.5µg/m^3
Median	72.8 µg/m3
% Data Capture	95.5%
No. of days > 120 µg/m^3	10 days

10.1.4.6 Dust

There are no statutory limits for dust deposition in Ireland. However, EPA guidance suggests that a deposition of 10 mg/m^2/hour can generally be considered as posing a soiling nuisance. This equates to 240 mg/m^2/day. The EPA recommends a maximum daily deposition level of 350 mg/m^2/day when measured according to the TA Luft Standard 2002. This limit value can also be implemented with regard to dust impacts from construction activities associated with the Proposed Project.

The extent of dust generation at any site depends on the type of activity undertaken, the location, the nature of the dust, i.e., soil, sand, etc., and the weather. In addition, dust dispersion is influenced by external factors such as wind speed and direction and/or, periods of dry weather. Construction dust has the potential to be generated from on-site activities such as excavation and backfilling. Construction traffic movements also have the potential to generate dust as they travel along the haul route.

The potential dust-related effects on local air quality and the relevant associated mitigation measures during the construction, operational and decommissioning phases of the Proposed Project are presented in Sections 10.2.3 below.

10.2 Likely and Significant Impacts and Associated Mitigation Measures

10.2.2 Construction Phase

10.2.2.1 Exhaust Emissions: Construction of Proposed Project Infrastructure

Significance of Effects

There are no updates to the assessment as per the EIAR and based on the assessment there will be no significant effects on air quality from exhaust emissions during the construction phase of the Proposed Project.

10.2.2.3 Dust Emissions: Construction of Proposed Project Infrastructure

Identification of Effect

Proposed Wind Farm

The IAQM 2024 Guidance methodology for *the Assessment of Dust from Demolition and Construction* as discussed in Section 10.2.1.2 above is used to assess the potential risk to high sensitivity receptors from dust deposition. Dust deposition impacts can occur for a distance of 250m from Proposed Project works areas, but the majority of deposition occurs within the first 50m (IAQM 2024 Guidance). The high sensitivity receptors were identified using a constraints mapping process, and detailed and updated planning searches which informed the project sensitive receptor dataset.

- There are 4 no. high sensitivity receptors within 20m of the Proposed Wind Farm footprint;
- There are 6 no. high sensitivity receptors within 50m of the Proposed Wind Farm footprint;
- There are 10 no. high sensitivity receptors within 100m of the Proposed Wind Farm footprint;
- There are 21 no. high sensitivity receptors within 250m of the Proposed Wind Farm footprint.

Table 10-18 below identifies the sensitivity of the area surrounding the Proposed Project footprint of the Proposed Wind Farm to dust soiling effects, as described in Section 10.2.1.2 above.

As per the criteria in Table 10-18 below the overall sensitivity of the area to dust soiling impacts is considered to be '**Medium**'

Table 10-18 Sensitivity of the Area to Dust Soiling Effects on People and Property. Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024)

		Distance from source (m)

Receptor Sensitivity	Number Of Receptors	<20	<50	<100	<250
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table 10-19 below identifies the high sensitivity receptors in the area surrounding the Proposed Project footprint of the Proposed Wind Farm to the health effects of PM_{10}, as described in Section 10.2.1.2 above. The annual mean PM_{10} concentration of Zone D in Ireland is 11 µg/m^3. The overall sensitivity of the area to human health effects of PM_{10} is considered to be Low.

Table 10-19 Sensitivity of the Area to Human Health Impacts from the Proposed Wind Farm construction works. Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024)

Receptor Sensitivity	Annual Mean PM_{10} Concentration	Number Of Receptors	Distance from source (m)			
			<20	<50	<100	<250
High	<24 µg/m^3 (<14 µg/m^3 in Scotland)	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	<24 µg/m^3 (<14 µg/m^3 in Scotland)	>10	Low	Low	Low	Low
		1-10				
Low	-	≥1	Low	Low	Low	Low

Table 10-20 below identifies the sensitivity of ecological receptors in the area surrounding the development footprint of the Proposed Wind Farm to dust effects from construction and demolition, as assessed in Section 9.2.4.3 of the previously submitted EIAR. As no habitats within the vicinity of the decommissioning area were defined as sensitive to effects by dust soiling, the risk is **Negligible** and any effects will not be significant.

Table 10-20 Sensitivity of the Area to Ecological Impacts. Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024)

Receptor Sensitivity	Distance from source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

As identified in Section 10.2.1.2 above, the Proposed Wind Farm is classified as 'Large' for Earthworks, Construction and Trackout activities. Therefore, when combined with the sensitivity of the area, using Tables 10-6 to 10-8 above as guidance, the pre-mitigation risk of impacts from the Proposed Wind Farm is summarised in Table 10-21 below.

Table 10-21 Summary Dust Risk Table for Proposed Wind Farm Activities

Potential Impact	Dust Emission Magnitude			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	N/A	Low Risk	Low Risk	Low Risk
Human Health	N/A	Low Risk	Low Risk	Low Risk
Ecological	N/A	N/A	N/A	N/A

The overall risk of dust emissions impacts with no mitigation applied for the major dust generating activities during the construction phase of the Proposed Wind Farm is **'Low'**. Therefore, the potential effects of dust from the construction phase of the Proposed Wind Farm are considered to be equivalent to short-term, slight, negative effects.

Proposed Grid Connection

The construction of the Proposed Grid Connection (permanent 110kV substation, temporary construction compound, underground grid connection cabling) will give rise to dust emissions. Aggregate materials for the construction of the proposed onsite substation and temporary construction compound will be sourced from local licenced quarries.

The number of high sensitive receptors within 250m from the Proposed Grid Connection works areas and their likely risk of dust impacts during the construction works, as highlighted in the IAQM 2024 Guidance methodology discussed above are as follows:

- There are 23 no. high sensitivity receptors located within 20m from the Proposed Grid Connection footprint;
- There are 87 no. high sensitivity receptors located within 50m of the Proposed Grid Connection footprint;
- There are 110 no. high sensitivity receptors located within 100m of the Proposed Grid Connection footprint;
- There are 147 no. high sensitivity receptors located within 250m of the Proposed Grid Connection footprint;

Table 10-22 below identifies the sensitivity of the area surrounding the development footprint of the Proposed Grid Connection to dust soiling effects, as described in Section 10.2.1.2 above. The overall sensitivity of the area to dust soiling effects is **'High'** due to the number of high sensitivity receptors within 20m of the Proposed Grid Connection.

Table 10-22 Sensitivity of the Area to Dust Soiling Effects from the Proposed Grid Connection construction works on People and Property. Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024)

Receptor Sensitivity	Number Of Receptors	Distance from source (m)			
		<20	<50	<100	<250
High	>100	High	High	Medium	Low

	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table 10-23 below identifies the high sensitivity receptors in the area surrounding the development footprint of the Proposed Grid Connection to the health effects of PM_{10}, as described in Section 10.2.1.2 above. The overall sensitivity of the area to human health effects of PM_{10} is **'Low'.**

Table 10-23 Sensitivity of the Area to Human Health Impacts from Proposed Grid Connection construction works. Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024).

Receptor Sensitivity	Annual Mean PM_{10} Concentration	Number Of Receptors	Distance from source (m)			
			<20	<50	<100	<250
High	<24 µg/m^3 (<14 µg/m^3 in Scotland)	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	<24 µg/m^3 (<14 µg/m^3 in Scotland)	>10	Low	Low	Low	Low
		1-10				
Low	-	≥1	Low	Low	Low	Low

Table 10-24 below identifies the sensitivity of the receptors to ecological effects in the area surrounding the development footprint of the Proposed Grid Connection. The Proposed Grid Connection crosses 4 no. water crossings, all 4 no. of which are EPA/OSI mapped watercourses. The Proposed Grid connection crosses the Lough Corrib SAC (WC2) and the remaining 3 no watercourse crossings are tributaries of the Lough Corrib SAC. As stated in Chapter 9 Water, Section 9.4.2 of the EIAR, the Proposed Grid Connection underground cabling will be emplaced along the road carriageway, therefore no instream works will occur. The overall sensitivity of the areas surrounding the development footprint of the Proposed Grid Connection is considered to be **'Low.'** Further information on the potential effects on water of the Proposed Project can be found in Chapter 9 Water of the EIAR and in Section 9 above of this Report.

Table 10-24 Sensitivity of the Area to Ecological Impacts. Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024)

Receptor Sensitivity	Distance from source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low

Low	Low	Low

As identified in Section 10.2.1.2 above, the Proposed Grid Connection is classified as 'Medium' for Earthworks, 'Medium' for Construction, and 'Medium' for Trackout activities. Therefore, when combined with the sensitivity of the area, using Tables 10-9 to 10-11 above as guidance, the pre-mitigation risk of impacts from the Proposed Grid Connection is summarised in Table 10-25.

Table 10-25 Summary Dust Risk Table for Proposed Grid Connection Activities

Potential Impact	Dust Emission Magnitude			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	N/A	Low Risk	Low Risk	Low Risk
Human Health	N/A	Low Risk	Low Risk	Negligible
Ecological	N/A	Negligible	Negligible	Negligible

The overall risk of dust emissions impacts with no mitigation applied for the major dust generating activities during the construction phase of the Proposed Grid Connection is '**Low**'. Therefore, the potential effects of dust from the construction phase of the Proposed Grid Connection are considered to be equivalent to short-term, moderate negative effects which is not significant.

Please note that the assessment of the potential impact of dust on the ecological receptors included in this assessment (i.e. rivers and streams along the Proposed Grid Connection) follows the methodology set out in the IAQM 2024 Guidance. However, a more detailed ecological impact assessment assessing impacts on these receptors during the construction phase (including effects from dust) is contained in Chapter 6 and Chapter 9 of the EIAR.

Transport to and from the Proposed Project

The transport of turbine components, supporting infrastructure materials, construction and staff vehicles, small volumes of aggregate material and waste removal vehicles to/from the Site, the departure of empty vehicles and/or minor waste volumes (please see CEMP Appendix 4-6 of the EIAR and Appendix 4-6a Addendum CEMP of this Report) from the Proposed Wind Farm site and daily staff movements will also give rise to some localised dust emissions during periods of dry weather. The transport of construction vehicles, aggregate material, waste removal vehicles and construction staff to/from the Proposed Wind Farm for the construction of the Proposed Grid Connection will also give rise to some localised dust emissions during periods of dry weather.

The IAQM 2024 Guidance states that the likely routes the construction traffic will use should also be included in an assessment of dust arising from trackout, and that related construction dust impact increases with respect to the number of movements of HGVs per day, length of unpaved road, distance to receptors and the sensitivity of local receptors.

For the purposes of this assessment of the dust emissions arising from trackout related to the construction of the Proposed Project, the L61461 local road, along which the main construction site entrance is located, and which is the location of proposed road widening works as detailed in Chapter 15 was scoped in for assessment. Beyond the end of this road, at the N83/L61461 junction, construction traffic will disperse and merge with other traffic along different routes to a degree that there will be no potential for significant effects from trackout related dust emissions. The L61461, scoped in for assessment, is an approximately 375m local cul-de-sac road that runs in a northwest-southeast orientation to the west of the Proposed Wind Farm site.

The IAQM 2024 Guidance methodology for *the Assessment of Dust from Demolition and Construction* as discussed in Section 10.2.1.2 above is used to assess the potential risk to high sensitivity receptors from dust deposition. Dust deposition impacts can occur for a distance of 250m from source (in this instance the L61461), but the majority of deposition occurs within the first 50m. The high sensitivity receptors were identified using a constraints mapping process, and detailed and updated planning searches which informed the project sensitive receptor dataset.

- There are 2 no. high sensitivity receptors located within 20m of the L61461;
- There are 6 no. high sensitivity receptors within 50m of the L61461;
- There are 7 no. high sensitivity receptors within 100m of the L61461;
- There are 16 no. high sensitivity receptors within 250m of L61461.

Table 10-26 below identifies the sensitivity of the area surrounding the L61461 to dust soiling effects from trackout, as described in Section 10.2.1.2 above.

As per the criteria in Table 10-26 below, there are 8 no. high sensitivity receptors within 20m of the L61461, and 12 no. high sensitivity receptors within 50m of the L61461. The overall sensitivity of the area to dust soiling impacts is considered to be Medium.

Table 10-26 Sensitivity of the Area to Dust Soiling Effects on People and Property. Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024)

Receptor Sensitivity	Number Of Receptors	Distance from source (m)			
		<20	<50	<100	<250
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table 10-27 below identifies the high sensitivity receptors in the area surrounding the L61461 to the health effects of PM_{10}, as described in Section 10.2.1.2 above. The overall sensitivity of the area to human health effects of PM_{10} is considered to be Low.

Table 10-27 Sensitivity of the Area to Human Health Impacts from the Proposed Wind Farm construction works. Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024)

Receptor Sensitivity	Annual Mean PM_{10} Concentration	Number Of Receptors	Distance from source (m)			
			<20	<50	<100	<250
High	<24 µg/m^3 (<14 µg/m^3 in Scotland)	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low

Medium	<24 µg/m^3 (<14 µg/m^3 in Scotland)	>10 1-10	Low	Low	Low	Low
Low	-	≥1	Low	Low	Low	Low

As identified in Section 10.2.1.2 above, the Proposed Wind Farm is classified as 'Large' for Trackout activities, and the Grid Connection is classified as 'Medium' for Trackout activities. Therefore, when combined with the sensitivity of the area, using Table 10-11 above as guidance, the pre-mitigation risk of impacts from the Proposed Wind Farm and Proposed Grid Connection is summarised in Table 10-28 below.

Table 10-28 Summary Dust Risk Table for Proposed Wind Farm Activities

Potential Impact	Dust Emission Magnitude	
	Trackout (Proposed Wind Farm)	Trackout (Proposed Grid Connection)
Dust Soiling	Medium Risk	Low Risk
Human Health	Low Risk	Low Risk
Ecological	N/A	N/A

The overall risk of dust emissions impacts on the identified 910m stretch of the L61461, with no mitigation applied for the major dust generating activities, during the construction phase of the Proposed Wind Farm is '**Medium'** and for the Proposed Grid Connection is **'Low'**. Therefore, the potential effects of dust from the construction phase of the Proposed Project are considered to be equivalent to short-term, moderate, negative effects which are not significant.

Mitigation & Monitoring Measures for the Proposed Project

It should be noted that the mitigation measures proposed below are unchanged to what is proposed in the EIAR.

- Sporadic wetting of loose stone surface will be carried out during the construction phase to minimise movement of dust particles to the air. In periods of extended dry weather, dust suppression may be necessary along haul roads to ensure dust does not cause a nuisance. Water bowser movements will be carefully monitored to avoid, insofar as reasonably possible, increased runoff.
- All plant and materials vehicles shall be stored in dedicated areas within the Site.
- Areas of excavation will be kept to a minimum, and stockpiling will be minimised by coordinating excavation, spreading and compaction.
- Turbines and construction traffic will be transported to the Site on specified haul routes only.
- The agreed haul route road adjacent to the Site will be regularly inspected for cleanliness and cleaned as necessary.
- The roads adjacent to the Site entrance will be checked weekly or damage/potholes and repaired as necessary.
- The transportation of construction materials from locally sourced quarries to the Site will be covered by tarpaulin where necessary.
- If necessary, excavated material will be dampened prior to transport to the spoil management areas.

- A Construction and Environmental Management Plan (CEMP) will be in place throughout the construction phase (see Appendix 4-5). The CEMP includes dust suppression measures.

Residual Impact

With the implementation of the above, it is considered to be a short-term imperceptible negative impact on air quality brought about by dust emissions generated during the construction activities of the Proposed Project, which is not significant.

With the implementation of the above, the Proposed Wind Farm is considered to have a short-term imperceptible negative effect on air quality brought about by dust emissions generated during the construction activities, which is not significant.

The Proposed Grid Connection is considered to have a temporary slight negative effect on air quality brought about by dust emissions generated during the construction activities, which is not significant.

Significance of Effects

The effects on air quality from dust emissions during the construction phase will be short term, imperceptible negative impact which is not significant.

11. CLIMATE

As stated in the Introduction Section of the Report, where best practice with respect to Chapter structure has evolved since the original submission (March 2024), to ensure maximum clarity and transparency the whole chapter has been updated, to include removal of text in red strikethrough and insertion of text in green are outlined. This approach has been taken with respect to Chapter 11: Climate and it is included as Appendix 11-1 of the Report.

12. NOISE AND VIBRATION

12.3.3.1 .Infrasound/ Low Frequency Noise

Section 12.3.3.1 of the EIAR discusses low-frequency noise in its application to noise assessment. It concludes that:

There is a significant body of evidence to show that the infrasound associated with wind turbines will be below perceptibility thresholds and typically in line with existing baseline levels of infrasound within the environment.

As presented in the response to previous submissions referred to in Section 1.0, the following is committed to by the applicant and will be implemented in full:

In the unlikely event that an issue with low frequency noise is associated with the proposed development once operational, it is recommended that an appropriate detailed investigation be undertaken. Due consideration should be given to guidance on conducting such an investigation which is outlined in Appendix VI of the EPA document entitled Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4) (EPA, 2016). This guidance is based on the threshold values outlined in the Salford University document Procedure for the assessment of low frequency noise complaints, Revision 1, December 2011.

Notwithstanding the above, AWN confirms that low-frequency noise issues due to the operation of the proposed wind turbines are not expected at the noise-sensitive locations.

12.3.4 Operational Phase Vibration

Seismic effects are not expected nor likely from the proposed wind turbines or any other part of the Proposed Project, for any type of ground. There are no known issues of effects of this nature at similar developments.

Section 12.3.4 of the EIAR discusses the vibration in its application to the assessment. It states:

A report published in Germany by the State Office for the Environment, Measurement and Nature Conservation of the Federal State of Baden-Württemberg in 2016, "Low Frequency Noise incl. Infrasound from Wind Turbines and Other Sources", Conducted vibration measurements study for an operational Nordex N117 – 2.4 MW wind turbine. The report concluded that at distances of 300 m and greater from the turbine vibration levels had dropped so far that they could no longer be differentiated from the background vibration levels.

The shortest distance from any turbine in the Proposed Wind Farm to the nearest NSL is in approximately 767m (being the distance from turbine T06 to NSL ref. H001). At that distance, the level of vibration will be significantly below any thresholds for perceptibility. Therefore, vibration criteria are not specified for the operational phase of the Proposed Wind Farm.

As such, no perceptible vibration effects are expected at any noise-sensitive location.

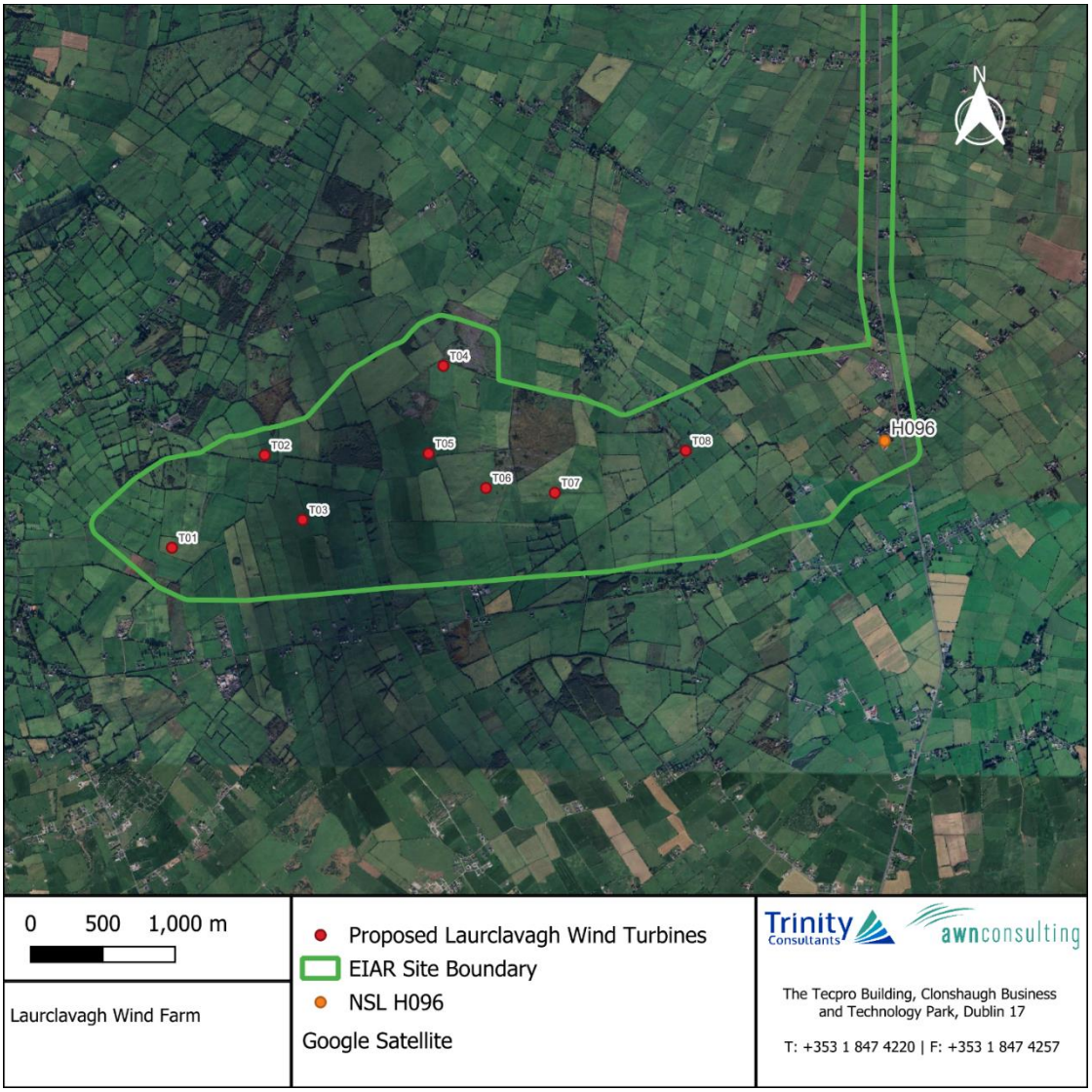

Figure 12-1 Location of H096

The referenced British Horse Society document does not put forward noise levels in decibel terms at which wind turbines do or do not have impacts or effects on horses. It does, however, refer to a recommended *minimum separation distance of 200m or three times blade tip height between a turbine and any route used by horses or a business with horses*. While the recommended setback distance is not specifically related to potential noise impacts, the following comment is noted.

The proposed turbine tip height is 185 m therefore the British Horse Society recommended separation distance is 555 m. Connolly Stud Farm is a distance of over 1.3 km to the nearest turbine; thus this recommendation has been well surpassed in terms of the equine facilities themselves. No established horse trekking routes were identified within the recommended separation distance from the proposed turbines.

12.3.6 Study Area

12.3.6.1 Additional Noise Sensitive Locations (NSLs)

Separately to the ACP Further Information (FI) Request, as stated in 5.9 above, a full review of all sensitive receptors within the shadow flicker and noise study area was carried out. An updated search of Galway County Council planning portal, and nationwide Eircode database was undertaken in July 2025. Given the results of the noise modelling presented in the EIAR, due to their proximity to other

houses which have been assessed, it was identified that any new dwellings outside of 2.5km from the proposed turbines could be screened out for detailed assessment, and subsequent noise modelling.

Within the area at 2.5 km from the proposed turbines, six additional noise-sensitive locations have been identified: one in the townland of Cluidrevagh, three in Manuslynn and two in Anabally. Each group is discussed below:

Cluidrevagh

At Cluidrevagh, one newly permitted house was found, labelled H852 in Figure 12-5 below. This location is 1149.5 m from proposed turbine T01. The nearest noise-sensitive locations in assessed in the EIAR is H124. The predicted noise levels for H124 were 36.4 dB L_{A90} at rated power wind speed, which is within the noise criteria adopted in the EIAR. Therefore, no significant noise impact due to the operation of the proposed turbines is likely at H852.

Figure 12-2 Additional Noise-sensitive Locations at Cluidrevagh

Manuslynn

At Manuslynn, three newly permitted houses, labelled H853, H854 and H855 as shown in Figure 12-6 below, were found. Predicted noise levels at nearby receptors H660 and H674 are below 30dB L_{A90}, therefore no noise impact due to the operation of the proposed turbines is likely at these locations.

Figure 12-3 Additional Noise-sensitive Locations at Manuslynn

Anabally

At Anabally, two newly permitted houses, labelled H856 and H857 in Figure 12-7 below, were found. Levels at nearby receptors H813 and H817 are below 30dB L_{A90}, therefore no noise impact due to the operation of the proposed turbines is likely at these locations.

Figure 12-4 Additional Noise-sensitive Locations at Anabally

Equine Facilities

The following equine facilities have been identified by MKO at the following approximate distances, and are shown in Figure 5-7 above:

- Connolly Stud Farm, at a distance of some 130 m to the proposed site entrance, and at a distance of 1.3 km from the nearest proposed turbine T8;
- Cloonboo Riding School, at 6.8 km from the nearest turbine
- Monard Equestrian Centre, at 8.9 km (this and following distance are to the nearest turbine)
- Grangeview Stables, 10 km
- Duffy's Equestrian Centre at 12.4 km
- Connemarra Equestrian Escapes 12.8 km
- Marley Stables at 12.9 km
- Clydagh Stud at 13.3 km
- Galway Bay Stud 15 km

The majority of equine facilities are at distances over 5 km from the wind farm, at which the proposed turbines are not likely to be audible. The only equine facility within 5km is Connolly Stud Farm, shown in Figure 12-1 in relation to the proposed development.

Connolly Stud Farm is at a distance of 130 m from the site entrance and at a distance of 1.3 km from the nearest turbine. The nearest NSL to this equine facility assessed in the EIAR is H096, at which the predicted wind turbine noise level is 33.2 dB L_{A90}, which is a low level of environmental noise and well within the noise criteria adopted in the EIAR. The location of H096 is shown in Figure 12-4 below..

12.8 Conclusion

This information has been prepared in response to the RFI from to ACP in relation to the planning application for the Proposed Project.

The submitted noise impact assessment is robust and has been carried out in line with current standards and best practice guidelines (i.e. Planning Guidelines for Wind Development 2006 and IOA GPG). The submitted EIAR Noise and Vibration assessment and the response to previous submissions demonstrate that the proposed development can operate within the noise criteria derived from the relevant guidance. This document has reiterated the relevant sections of the EIAR and the Response to Submissions to comprehensively address the concerns raised in ACP's Further Information Request.

13. CULTURAL HERITAGE

There are no updates to this Section of the EIAR.

14. LANDSCAPE AND VISUAL

14.1 Introduction

Item 12 of the ACP RFI request states:

> *"You are requested to consider the impact on historical landscape value and the proposals compatibility with the European Landscape Convention 2004, with attention paid to the Landscape Directive."*

14.1.2 Response to Further Information Request

Chapter 14 of the submitted EIAR and its associated appendices contains a comprehensive LVIA for the Proposed Project conducted by MKO. Chapter 14 is accompanied by EIAR Volume 2 Photomontage Booklet presenting verified photomontage visualisations from 15 no. viewpoints.

The 'Response to Observations Received' submitted on file in 2024 provided further supplementary discussion related to impacts on Knockma Hill, the N83 National Route and the local road network, as well as discussion on landscape sensitivity related to Lough Corrib Scenic Route and amenities; it is considered that these topics have been fully and robustly assessed and therefore these topics are not discussed further here.

European Landscape Convention Overview and Landscape Policy

The European Landscape Convention[52] (ELC) published by the Council of Europe sets out guidelines for the implementation of landscape policy for national and governing bodies. Article 1 defines 'Landscape' as follows:

> *"'Landscape' means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors."*

Article 1 identifies three main terms used for implementing landscape policy as 'Protection', 'Management' and 'Planning'. The ELC includes 'historical landscape value' as a consideration of landscape context. The ELC is a treaty of the Council of Europe, and it is not a European Union Directive. While there is no specific Landscape Directive, the ELC does encourage member states to integrate landscape considerations into applicable national and local policy.

Another document published on the ELC website sets out guidelines for implementing the articles set out by the council at the ELC '*Guidelines for the implementation of the Council of Europe Landscape Convention*'[53]. The document is intended for parties to the convention who wish to draw up and implement a national landscape policy based on the convention. It puts forward proposals taking account of advances and developments in the concept of landscape in Europe and of the diverse existing and practical experience in applying the convention. As stated in the introduction of that document, the guidelines were put forward *"…. with due regard for the freedom, and particularly the creativity, of the authorities of each state to draw up legal, operational, administrative and technical landscape-related instruments and are not legally binding."*

With regards to the above statement, therefore, the national and local authority's landscape policies are the relevant documents for the assessment of the Proposed Project; this is discussed here.

With regard to the background of landscape policy context for the Proposed Project, Ireland signed and ratified the ELC which came into effect on 1 March 2004. It obliges Ireland to implement policy changes and objectives concerning the management, protection and planning of the landscape resulting in the publication of the National Landscape Strategy 2015-2025. Section 3.2 of the National Landscape Strategy sets out different actions in relation to developing a national landscape character assessment. The actions discuss developing policies, increasing awareness, identifying training and educational needs and strengthening public participation.

Action 4 of the National Landscape Strategy sets out the following action for planning authorities:

> *"Landscape Character Assessments will be prepared at local and intra-local authority level, building on the National Landscape Character Assessment, using the Landscape Character Assessment Guidelines. These regional and local landscape character assessments will inform and guide landscape policy, action plans and local authority development plans".*

The Galway County Development Plan 2022–2028 (GCDP) incorporates the objectives of the National Landscape Strategy through detailed landscape character assessment in the GCDP Appendix 4 comprising the official Landscape Character Assessment for Co. Galway. Section 14.5.1.1.3 'Landscape Character Assessment' of the LVIA states that the Proposed Wind Farm site is located in the *Central Galway Complex* Landscape Character Type (LCT) and Landscape Character Unit (LCU)-6a *Black River Basin Unit*. The LVIA included an impact assessment of LCU-6a, reported in both Section 14.8.3.1.3 and in Appendix 14-2. Historic landscape value forms part of the 'key characteristics' of the LCU and was factored into the sensitivity assignment for the impact assessment. Overall, the sensitivity

[52] *Council of Europe Treaty Office, Details of Treaty No.176, available at: https://www.coe.int/en/web/conventions/full-list?module=treaty-detail&treatynum=176*
[53] Guidelines for the implementation of the Council of Europe Landscape Convention, available at: https://www.coe.int/en/web/landscape/guidelines-for-the-implementation-on-the-european-landscape-convention

of the LCU was deemed to be 'Low', the magnitude of change was 'Moderate', and the residual effect on landscape character was 'Slight'. In response to the FI request, further information is provided below to establish the baseline historic value of the landscape of the Central Galway Complex LCT, LCU-6a Black River Basin Unit and the landscape setting where the Proposed Wind Farm is located.

Historic Landscape Value – Central Galway Complex LCT and LCU-6a - Black River Basin Unit

The proposed turbines are sited within an LCT which is not designated as being a historic landscape of county, regional or national renown. The *Central Galway Complex* LCT is described in the GCDP as having what may be considered historical value in terms of its "productive soils" which have long attracted farming and settlement and therefore may be associated with:

> *"...higher concentrations of remains from major periods of land-management, including early Christian, medieval and 16th-19th century estates."*

The LCT description in the GCDP also describes the general potential of the LCT for what may be considered historical value as follows:

> *"This historic pattern of settlement has resulted in elevated concentration of archaeological, architectural and cultural remains. Features from different periods of land management and settlement are often found in close proximity. Examples of sites with many periods include Pallas, Eyrecourt and Garbally Park."*

Appendix 4 of the GCDP (p.37) further describes the *Central Galway Complex* LCT as:

> *"Most of Galway's settlement and agriculture, with associated roads and infrastructure, occur within this busy working landscape. Each period of history has attracted farming and settlement to the fertile, level soils of this landscape. Ringforts, tower-houses, field walls and parklands occur throughout this area, as evidence of these past uses. Today, the rural housing, with associated roads, schools, powerlines, clubs and signposts that create the domesticated landscape character in the environs of towns, villages and smaller settlements that recurs throughout this landscape.*
>
> *The appearance and character of the majority of this landscape type remains dominated by grass-based agriculture. Fields generally have low enclosure, with limestone walls evident in many areas. The wider landscape is punctuated by stands of large mature trees – often remains of parkland landscapes that surrounded large 17th – 19th estate residences."*

The GCDP Appendix 4 divides the county into broad landscape regions based on underlying geology that gave rise to the present landscape characteristics including physical features as well as "patterns of human settlement from prehistory to today." As seen in Figure 14-1 below, the *Central Galway Complex* LCT in which the Proposed Wind Farm is sited is a very broad area; the LCT covers five different LCUs.

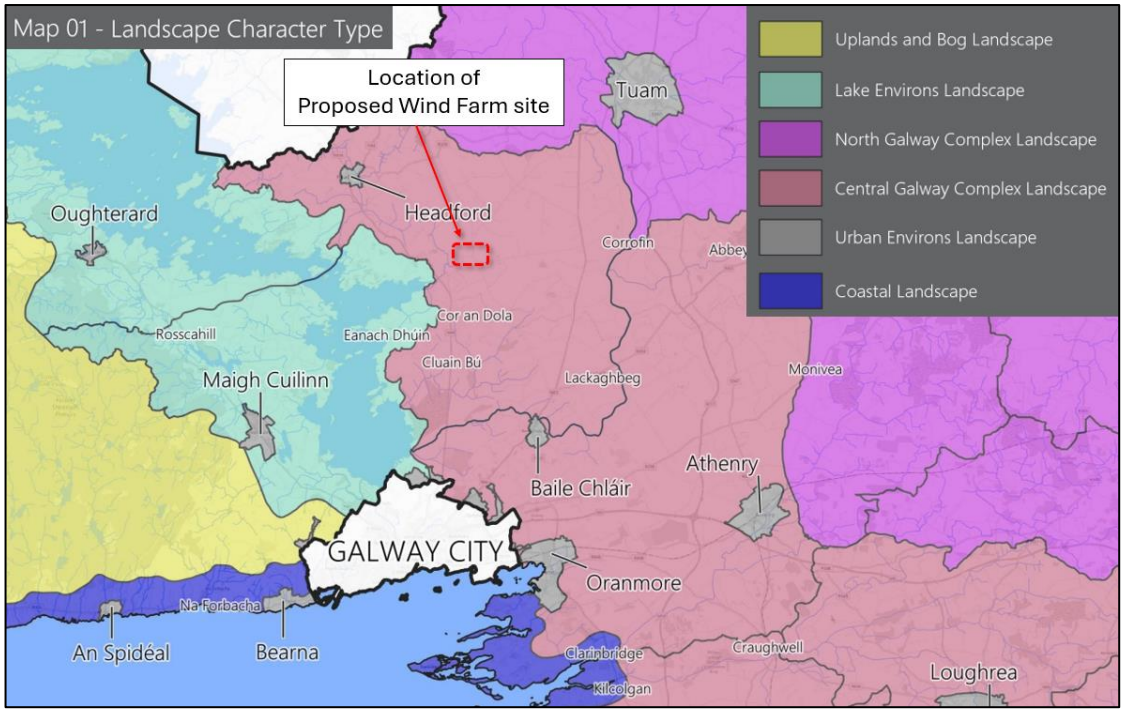

Figure 14-1 Location of Proposed Wind Farm site within LCT, extracted and modified from Map 01 of Galway County Development Plan 2022-28 Appendix 4

The "productive soils" across the LCUs of the *Central Galway Complex* LCT have resulted in a high concentration of remains of land management and features from different time periods. This includes today's modern period, as the land area of the Proposed Wind Farm site and its wider landscape setting continue to be used as a working landscape; this is discussed in Section 14.5.2 and 14.5.5 of the LVIA. It is reported specifically that the LCT (within the Eastern Plains) is characterised by fields, low enclosures and stone walls and contains the majority of Galway's settlements, essentially comprising a heavily modified working landscape.

The relevant LCUs of the *Central Galway Complex* LCT associated with the Proposed Wind Farm site are assessed in Appendix 14-2 LCA Assessment tables and within Section 14.8.3.1.3 of the LVIA. The proposed turbines are located within LCU-6a - Black River Basin Unit. The key characteristics of LCU-6a taken from the GCDP Appendix 4 and stated in Appendix 14-2 of the LVIA are as follows:

- *"Undulating long-occupied working landscape with high levels of settlement. Large regular fields and numerous parkland remnants. Low enclosure except for localised areas of mature parkland trees.*
- *Most of Galway's settlement and agriculture, with associated roads and infrastructure, occur within this busy working landscape.*
- *The appearance and character of the majority of this landscape type remains dominated by grass-based agriculture. Fields generally have low enclosure, with limestone walls evident in many areas. The wider landscape is punctuated by stands of large mature trees."*

The key characteristics for LCU-6a are very similar to those above describing the *Central Galway Complex* LCT. The following paragraphs discuss the wider landscape in terms of its cultural heritage setting and the Proposed Project.

Heritage and Monuments within the Site and Surrounding Area

Chapter 13 Cultural Heritage of the EIAR reports that no National Monuments are located within the Proposed Wind Farm site itself; this is also reported in Section 14.5.3.2 of the LVIA. Referring to figures in Ch.13 of the EIAR, Figure 13-2 is a map indicating that no national monuments or monuments

subject to a preservation order are located within the Proposed Wind Farm site, Figure 13-4 shows 22 recorded moments located within the Proposed Wind Farm site and Figure 13-5 shows one potential unrecorded monument in the Proposed Wind Farm site. Section 13.3.3.3.6 of Ch.13 in the EIAR states that a historic field system is evident within the Proposed Wind Farm site. Some of the low field stone walls which once enclosed the fields have collapsed and are shown in Plate 13-5 of the EIAR. No evidence of any intact stone walls was apparent in the field in areas where the proposed roads or other ancillary Proposed Project infrastructure will be constructed. In addition, the proposed turbines and ancillary infrastructure are setback from the 22 recorded monuments mentioned above and do not physically alter the landscape fabric of any of the monuments. It is noted that the setting and visual connectivity will be altered, which is typical of an evolving working landscape. No significant effects are likely to occur on the recorded and unrecorded monuments.

It is clear that the wider landscape has historically been used as a working landscape, as there are fulachtaí fia, ringforts, parkland remnants such as Castle Hacket, field patterns and cairns evident throughout the LVIA Study Area, delineated as a 20km radius surrounding the proposed turbines. Stone walls, as one of the key characteristics of the *Central Galway Complex* LCT, are evident in multiple viewpoints in the *EIAR Volume 2 Photomontage Booklet*. Extracts from the *Photomontage Booklet* are shown below in Figure 14-2, Figure 14-3 and Figure 14-4 (VP01, VP02 and VP03) to illustrate that the proposed turbines are setback from these stone walls. Stone walls such as these and historical sites such as those listed above are common features of modified working Irish landscapes across the country. Therefore, whilst the historical landscape character of the Proposed Wind Farm site is noteworthy, it is not necessarily unique in terms of cultural heritage features throughout the whole of Ireland.

Figure 14-2 Proposed Photomontage VP01 extracted from the EIAR Volume 2 Photomontage Booklet

Figure 14-3 Proposed Photomontage VP02 extracted from the EIAR Volume 2 Photomontage Booklet

Figure 14-4 Proposed Photomontage VP03 extracted from the EIAR Volume 2 Photomontage Booklet

As stated above, the proposed turbines are located within a working landscape, and the addition of wind turbines is a natural evolution of the modern working landscape in the Republic of Ireland. There is strong government policy supporting the development of onshore wind energy in the current Climate Action Plan 2025[54]. Consequently, wind energy developments will become more commonplace, and in principle, are accepted as required components of the modern working landscapes of Ireland. The focus for the landscape and visual assessment is therefore on the distance, arrangement and location of turbines as well as potential disruption to cultural links, rather than solely on whether turbines are visible or not.

Overall, there will be impacts to the setting of the landscape character which includes features of the LCT such as stone walls etc; however, the impacts are aligned with emerging baseline trends of continued change to working landscapes considering national policies supporting onshore wind energy development and are not significant. It is noteworthy that the potential effects of the Proposed Wind Farm as stated above are reversible, intended to last for the duration of the operational lifetime of the proposed turbines. It is considered that the potential effects to the wider landscape setting and its cultural heritage features would be reversed once the proposed turbines are removed after their lifetime of operation. It should also be noted that the information provided does not change the outcome of the original EIAR impact assessment and the residual landscape effect on LCU-6a remains as 'Slight'.

14.7 Cumulative Context

The Applicant is aware that as of the 25/08/2025 and the 28/08/2025, the newspaper notices have been published on the ACP EIA Portal. It should be noted that Shancloon Wind Farm was assessed cumulatively as part of the EIAR. This assessment was completed based on estimated turbine coordinates, and at the time of writing, the exact turbine coordinates are not publicly available. In the context of the Site there is no material impact to the assessment conducted as part of the LVIA. Due to the distance between the Site and Shancloon wind farm (approx. 9km north of the Proposed Wind Farm,t here is no change to the residual cumulative effect, as defined in the EIAR.

14.9 Conclusion

This Response to Further Information has considered the potential impacts of the proposed turbines on the historical landscape value of the Proposed Wind Farm site and its compatibility with the principles set out in the European Landscape Convention and the landscape directive, as requested under Item No.12 of the ACP Further Information (FI) Request.

The Proposed Wind Farm site lies within a "Low" sensitivity landscape of the Central Galway Complex Landscape Character Type (LCT), specifically within the Black River Basin Landscape Character Unit

[54] *Climate Action Plan (Department of Climate, Energy and the Environment, 2025), available at:* https://www.gov.ie/en/department-of-climate-energy-and-the-environment/publications/climate-action-plan/

(LCU 6a), as identified in the GCDP. This is a historically evolved, long settled, and productive working landscape characterised by extensive agricultural use, dispersed settlement, stone field boundaries, and scattered parkland features. This landscape includes cultural heritage elements such as ringforts, fulachtaí fia, parkland remnants, and field patterns and cairns. These types of historical sites are common features of the working landscape and are found within Irish landscapes across the country. Therefore, whilst there is value to the historical landscape character of the Proposed Wind Farm site, its landscape setting and the landscape of Central Galway Complex LCT, it is not necessarily unique and the assemblage of cultural heritage monuments forming this historic landscape are common of rural working landscapes throughout Ireland. It is not a historic landscape of county, regional or national renown.

As detailed in both Chapter 13 (Cultural Heritage) and Chapter 14 (LVIA) of the EIAR, no National Monuments are located within the Proposed Wind Farm site, and the proposed turbines and associated infrastructure are appropriately setback from recorded and potential unrecorded monuments. While the proposed turbines will introduce a visual change to the setting containing some historical landscape elements, it will not result in any direct physical impacts to the historical features. The expected visual changes will be consistent with the landscape's continued evolution in terms of modified working activities.

In terms of alignment with the **European Landscape Convention (ELC)**, it is demonstrated that the National Landscape Strategy 2015-2025 places the responsibility of adopting the ELC requirements on the local authorities through implementation of planning policy. The LVIA shows that the Proposed Project is compatible with GCDP 2022-2028 planning policy objectives in relation to considering the historical landscape value. The Proposed Project has regard for the cultural and historical features present within the landscape character whilst also supporting the delivery of national climate and sustainability targets. The landscape continues to evolve as a **working landscape**, that is, one in which energy infrastructure is a supported and necessary land use in the national interest. This is consistent with the approach of the **National Landscape Strategy 2015-2025** in promoting the integration of landscape considerations into decision-making and acknowledges the evolving nature of landscape as shaped by ongoing environmental, social, and economic processes.

Overall, it is concluded that while the Proposed Project will result in a degree of landscape and visual change to the existing landscape character, including elements of historical landscape value; these changes are not considered significant from an LVIA perspective. The anticipated effects are reversible, Long-Term in duration, and are consistent with national and local planning policy.

15. MATERIAL ASSETS

15.1 Traffic and Transport

As requested by the Commission, the Traffic and Transport Impact Assessment comprises a standalone document, included as Appendix 5 to the RFI Document.

This Section of the Report sets out all Traffic and Transport additional information to that provided in the EIAR as requested by the Commission in the Further Information Request. It includes the following;

- All additional Traffic and Transport related information provided in the ***Response to Observations Received Report***, and,
- All Traffic and Transport related further information requested by An Comisiún Pleanála (the Commission), to be included as part of an ***EIAR Addendum Report*** in their letter dated 5th March, 2025.

Specific responses to Items 1.1 to 1.10 raised by the Commission in relation to Traffic and Transport are provided in the separate *RFI Document to which this Report is an Appendix to*.

15.1.2 Receiving Environment

15.1.2.3 Proposed Construction Traffic Haul Route

Stone, sand and cement required for the construction of the Proposed Wind Farm and the Proposed Grid Connection infrastructure will be sourced from local, appropriately authorised quarries. Potential quarries are shown on Figure 4-24. All quarries are located to the south of the site and all materials provided by these quarries will approach the site via the TDR. The same will be the case for the smaller turbine components that will also arrive at the port in Galway City. Therefore, all general construction traffic generated during the construction of the Proposed Project will travel to the site via the TDR, shown in Figure 15.1 of the EIAR. No construction traffic will approach the Site from the north.

15.1.4 Proposed Project and Traffic Generation

This Section contains additional Traffic and Transport related information provided in "Response to Observations Received Report".

15.1.4.2 Development Trip Generation – During Construction

The following summary was provided in the ***Response to Observations Report*** in relation the breakdown of HGV trips that will access the Proposed Wind Farm Site via the L-61461 local Road and also with respect to the management of these trips during the construction phase.

Detailed breakdown of HGV trip generation and traffic volumes that will travel on the L-61461

Concrete deliveries on foundation pouring days (8 days) – A total of 640 concrete loads (Table 15-7) or 80 concrete loads for 8 days (384 pcus, Table 15-8 of EIAR) will be delivered to the site per day. Over a 12 hour day (07:00 to 19:00) this will result in 7 HGVs travelling to and from the site per hour. These will be the busiest days for development generated traffic.

General construction days (227 days) – 30 HGV loads (140 pcus, bottom row of Table 15-9 of EIAR) per day. Over a 10 hour period (08:00 to 18:00) this will result in 3 HGVs travelling to and from the site per hour.

Delivery of abnormally sized turbine components (22 nights) – On these 22 nights a convoy of 3 abnormally large loads will be delivered to the site (60 pcus, Table 15-12 of EIAR).

Delivery of smaller turbine components (8 days) – 4 HGV loads (19 pcus, Table 15-13 of EIAR) will be delivered to the site per day. Over the course of the day this will result in 4 HGV travelling to and from the site per day, or on average approximately 1 every 2 hours.

In the construction year 2028 it is forecast that 2-way background traffic volumes on the L-61461 will be 98 vehicles per day with 11 of these movements being HGV movements (ie 5 HGV movements in each direction). (Extracted from Table 15-5 of EIAR).

15.1.9 Abnormal Load Route Assessment

The additional information requested by the Commission is in relation to the following;

- Providing an update of all drawings and figures to take account of the current layout at the N83 / L-61461 junction, and,
- A response to various road safety issues raised in the Response to Observations Received Report and in the FI request issued by the Commission.

The figures from the EIAR have been updated to include the current layout of the N83 / L61461 junction and are included in Appendix 2 Addendum Planning Drawings of the FIR, and appended as Appendix 15-5 of this EIAR Addendum;

- *Figure 15-12a – Location 4 – N83 / L61461 junction, proposed temporary access for abnormally sized loads and standard HGVs during construction*
- *Figure 15-13a – Location 4 – N83 / L61461 junction, proposed temporary access for abnormally sized loads and standard HGVs during construction phase – blade extended artic*
- *Figure 15-14a – Location 4 – N83 / L61461 junction, proposed temporary access for abnormally sized loads and standard HGVs during construction phase – tower extended artic*
- *Figure 15-15a – Location 4 – N83 / L61461 junction, proposed temporary access for abnormally sized loads and standard HGVs during construction phase – tower extended artic*

15.1.12 Likely and Significant Effects and Associated Mitigation Measures

15.1.12.5 Mitigation Measures

15.1.12.5.2 *Management of HGV trips on the L-61461*

The section of the L-61461 that will be impacted by traffic movements generated by the Proposed Project is shown in Figure FI 6, which is provided as Appendix 15-5 of the Report. The information provided includes the following;

- The total length of the section of the L-61461 between the proposed site access and the N83 is approximately 340m (this is updated from 370m stated in the EIAR),
- The section of the L-61461 between the proposed access junction and the connection with proposed temporary link road between the N83 and the L-61461 is approximately 270m, with the section to the east connecting with the N83 approximately 70m in length.
- While it is proposed to widen the carriageway of the western 270m section between the proposed access junction and the connection with proposed temporary link road to a minimum of 5m, the figure indicates 3 sections of the road that are wider (minimum 5.5m up to >10m) due to existing boundary setbacks. These sections range in length from approximately 35m to 70m, and total 165m (or 61%) of the overall 270m length of this section of the L-61461.
- The locations of Flagmen (5 in total) that will be in place at all times when deliveries are made to the site are also indicated (excluding the nights when abnormally sized loads will be made to the site, which will be accompanied by a Garda escort).

Operation of 2-way section between the proposed site access and the proposed temporary link (270m)

The widths of the largest standard delivery vehicles that will access the site will be;

Concrete mixer = 2.390m

Large tipper truck = 2.495m

Large articulated HGV = 2.500m

While many vehicles making deliveries to the site will be able to pass on the 5.0m sections of this road, all will be able to pass on the wider sections which comprise approximately 130m (ie 60m + 35m +35m for section included in western section as shown in Figure FI6 of Appendix 15-6), or almost half of the 270m length of this section of the L-61461. While it is demonstrated that there are sufficient passing opportunities for delivery vehicles to pass on this section of the L-61461 based on the above, it is proposed to regulate trips by means of small managed convoys in order to;

- minimise the potential for deliveries travelling in opposite directions to meet,
- to minimise the impacts to locals living and travelling on the L-61461, and,
- to provide continuous monitoring of the L-61641 to ensure safety for all users.

This will be implemented by means of 3 Flagmen all of which will be in permanent radio contact, with 1 located at either end of this section of the L-61461, and 1 located midway. It is proposed that the Flagmen will hold the HGVs at either end of the road to form convoys of up to a maximum of 2 HGVs before releasing them when it is confirmed by colleagues that the road is clear. The locations where the vehicles will be held will be on the proposed site entrance at the western end and the proposed temporary link road at the eastern end of the L61461.

It is estimated that impacts on this section of the L-61461 will be as follows for the various delivery days during the construction period.

Concrete deliveries on foundation pouring days (8 days) – Based on an assumed 30kph speed it will take 0.54 minutes, or 33 seconds for an HGV to travel the 270m of this section of the L-61461. As set out previously, on these 7 busiest days during the construction period there will be a maximum of 7 HGVs travelling to and from the site per hour. These will travel to and from the site in 3 convoys of 2 HGVs with the remaining HGV traveling alone but still controlled by the Flagmen. One convoy will travel to and from the site in each 15 minute period Based on this it may be determined that the total time that a convoy will travel on the road will be 1.08 minutes of each 15 minute period, resulting in development generated traffic being on the road for 7.2% of the time on these 7 busiest days. For the remaining 92.8% of the time there will be no development generated delivery traffic on the road.

General construction days (227 days) – Using the same principles as above, on the 227 days when general construction will take place on the site there will be a maximum of 3 HGVs travelling to and from the site per hour. These will travel to and from the site in 1 convoy of 2HGVs and with the remaining HGV traveling alone but managed. One convoy will travel to and from the site in each 30 minute period, resulting in development generated traffic travelling on the road for 1.08 minutes of each 30 minute period, or for 3.6% of the total time available in each hour. For the remaining 96.4% of the time there will be no development generated delivery traffic on the road on these 227 days.

Delivery of abnormally sized turbine components (22 nights) – On these 22 nights a convoy of 3 abnormally large loads will be delivered to the site during nighttime hours with no trips made during the day.

Delivery of smaller turbine components (8 days) – On these 8 days 4 HGV loads will be delivered to the site per day with on average one traveling to and from the site every 2 hours.

In summary, as set out above, with the use of a convoy system and staff to control traffic flow, the volumes of deliveries generated on this section of the L-61461 during the construction of the Proposed Project will be easily managed in terms of traffic volumes and the time available. While the additional HGV traffic that will be generated during the construction of the Proposed Project will clearly be

noticeable by residents, with the implementation of the measures above, it is considered that the deliveries may be made via the L-61461 safely, and with minimal disruption to local traffic.

Operation of 1-way section between the proposed temporary link and the N83 (70m)

The section of the L-61461 between the proposed temporary link and the N83 is also shown in Figure FI6. As it is proposed that all inbound deliveries will utilise the proposed temporary link road, there will be eastbound development generated HGV trips on this section only. This link road will provide for 1 convoy of 1 to 2 HGV every 15 minutes for the 7 day concrete foundation pour days, and a convoy of 1 to 2 vehicles in each 30 minute period for the 227 general construction days.

Again, assuming a 30 kph speed it will take each convoy 0.14 minutes or 9 seconds to travel this section of the L-61461. From the junction capacity tests undertaken for the N83 / L-61461 junction set out in Section 15.1.6.4 of the EIAR it was established that for the worst-case trip generation scenario during the PM peak hour, the maximum delay for right turning movements accessing the N83 will be 0.31minutes or 19 seconds. It may therefore be determined that the total maximum time that it could take an eastbound convoy to travel the 70 m on this section of the L-61461, and to gain access onto the N83, and therefore clear the junction will be 0.45 minutes, or 27 seconds. If, as proposed this occurs once every 15 minutes, this will result in this section of the L-61461 being occupied for a maximum of 3.0% of the time during the 7-day concrete foundation pours, and for 1.5% of the time during the 227 general construction days.

It is proposed that the small convoys will be held on the L-61641 at the location just west of the link road by the Flagmen stationed at this location, as shown in Figure FI6. This flagman will be in continual contact with the Flagman located on the N83.

For this section of the L-61461 the key element of the traffic management plan will be to give priority to traffic turning off the N83 travelling westbound on the L-61461 in order to ensure that these movements do not interfere with the traffic flow on the N83. As set out above it is determined that there will be 98 background traffic movements on this section of the L-61461, with 49 of these travelling westbound from the N83. From the traffic surveys it may also be established that a maximum of 15% of the total daily traffic flow on the L-61461 travels during the busiest hours (observed to by the hours 08:00 to 09:00 and 19:00 to 20:00) when a maximum westbound flow of background traffic is determined to be 7 vehicles per hour, or on average one vehicle every 8.6 minutes. Again, if it is estimated that each trip takes 0.14 minutes to clear this section of the L-61461, it may be determined that background westbound trip will occupy the section of the road for 1.6% of the time during the busiest hour.

The aim of the statistical exercise above is to establish the intensity of the traffic that will be generated by the Proposed Project on the L-61461 with respect to the percentage of time that it will be present. In summary, based on one eastbound convoy of development generated deliveries every 30 minutes, or one every 15 minutes for the 7 concrete delivery days, together with a maximum of one westbound vehicle turning of the N83 every 8.6 minutes, it is considered that the Flagmen located at either end of this 70m section of the L-61461 will be able to manage the delivery vehicles generated by the Proposed Project travelling east, to avoid the background traffic movements turning off the N83 and travelling west. With a combined occupancy of 4.6% (ie 3.0% for east bound development traffic, and 1.6% for west bound background traffic) during the busiest hour, it is concluded that the traffic demand will be easily managed by means of Flagmen and the proposed convoy system, with manageable impacts on local traffic.

In addition, the constant presence of Flagman at a maximum distance of 150m apart will ensure that;

- the short convoys of development generated HGV traffic travel when unopposed by oncoming traffic (development generated or local traffic),
- that the convoys travel at appropriate speeds (30 kph),
- local traffic accessing and exiting properties on the L61461 are accommodated, and,

- a safe environment is maintained throughout the construction phase for all residents in vehicles, on bicycles and on foot.

15.1.13 Summary

The relevant information provided in Chapter 15 of the EIAR is compiled into a Traffic and Transport Assessment Report as included as Appendix 5 of the **FI Response Document**. The assessment presents additional details of the junction capacity assessment undertaken for the construction stage of the Proposed Project at the N83 / L-61461 / L-6146 junction, updated to take account of the reduced visibility on the L-61461 approach to the junction. A sensitivity test is also presented based on an extreme precautionary scenario of all construction staff and the maximum number of HGVs for a concrete foundation pour passing through the junction at the same time. The junction was determined to operate within capacity for this scenario.

15.3 Other Material Assets

15.3.1 Existing Built Services and Utilities

The Proposed Project is in compliance with Gas Networks Ireland (GNI) and Health and Safety Authority (HSA) guidelines as listed below:

- GNI Code of Practice for Working in the Vicinity of the Transmission Network. Procedure No: Ao/PR/127. Rev. 3. (May 2021)[55]
- GNI Safety advice for working in the vicinity of natural gas pipelines[56]
- HSA Code of Practice For Avoiding Danger From Underground Services[57]

As stated in Section 3.2.5.2.2 of the EIAR, the final proposed turbine layout takes account of all site constraints and the distances to be maintained between turbines and from houses, roads, etc. The layout is based on the results of all site investigations that have been carried out during the EIAR process. As information regarding the Proposed Wind Farm was compiled and assessed, the number of turbines and the proposed layout have been revised and amended to take account of the physical constraints of the Proposed Wind Farm and the requirement for buffer zones and other areas in which no turbines could be located.

Proposed Layout Iteration No. 1 comprised of 11 no. turbines and was determined on the basis of a desk study. On review of desk-based constraints in relation to the layout, a number of amendments were made, including the dropping of 1 no. turbine due to habitat, housing and underground gas pipeline buffers.

As stated in Chapter 15 Section 15.3.1 the Gas Networks Ireland underground gas pipline travels from north to south through the Proposed Wind Farm site. A scoping response was received from Gas Networks Ireland in November 2023, which can be found in Appendix 2-2 Scoping Responses of the EIAR. It was confirmed in this scoping response from GNI (please note, that this was incorrectly denoted as to be from Bord Gais Networks in the EIAR) that a minimum setback distance relating to deep intrusive groundworks of 2 no. turbine hub heights (103.5m) should be achieved. A designated 207m setback distance relating to deep intrusive groundworks has been applied to this underground

[55] *GNI COP Working in Vicinity of the Transmission Network. Available at: https://www.gasnetworks.ie/sites/default/files/docs/safety/Code-of-Practice-for-Working-in-the-Vicinity-of-the-Transmission-Network.pdf*
[56] *GNI Safety information. Available at: https://www.gasnetworks.ie/sites/default/files/docs/safety/Safety-Advice-for-Working-in-the-Vicinity-of-Natural-Gas-Pipelines.pdf*
[57] *HSA Code of Practice For Avoiding Danger From Underground Services. Available at: https://www.hsa.ie/eng/publications_and_forms/publications/construction/code_of_practice_for_avoiding_danger_from_underground_services.pdf*

pipeline. The Applicant has been able to achieve a 284m setback from the closest turbine (T5) which exceeds the requirements requested by the operator. There are no turbines located within this designated setback distance. GNI noted in their Scoping Response that in addition, telecom lines were laid alongside the gas line to avoid the need for additional trenching works. The Applicant achieved setback distance also allows for avoidance during construction. Based on survey information, and information provided by Gas Networks Ireland, no impacts are likely to occur as the groundworks needed in order to construct the Proposed Wind Farm infrastructure will not interfere with the existing gas pipeline.

In accordance with the GNI Code of Practice for Working in the Vicinity of the Transmission Network. Procedure No: Ao/PR/127. Rev. 3. (May 2021), consultation will be held with GNI prior to commencement of any works in order to obtain formal consent.

In addition, where the proposed road network crosses the gas line, an appropriate crossing has been included in the project design. As stated in Section 15.3.1 of the EIAR, 'Based on information provided by GNI, no impacts are likely to occur as the groundworks needed in order to construct the Proposed Wind Farm infrastructure will not interfere with the existing gas pipeline'.

As detailed in the GNI Scoping Response

> *"Any ducts crossing the pipeline would have to be installed as per the GNI Code of Practice (attached) with 600mm separation between services. If you have more than 1 AC cable at the crossing, then these must also be laid in a trefoil formation. The trefoil arrangement is primarily used in situations where the three phases are carried by individual cables rather than a single three phase cable and the magnetic field produced by each phase is cancelled out which reduces interaction of stray currents on the pipeline CP system.*
>
> *Any new access roads would need to be assessed to see if loadbearing slabbing is required. GNI can assess whether slabbing is required once you confirm that this road will not be trafficked by abnormal loads and would have the same max axel loads as per a standard national road.*
>
> *All works must be carried out in compliance with the attached Code of Practice with the salient points during the construction phase being wayleave demarcation & installing temp construction traffic crossing points."*

The HSA Code of Practice For Avoiding Danger From Underground Services states the below in regard to crossing points at gas pipelines:

> *"Crossing points: In cases where heavy plant and other machinery may have to cross the line of a gas pipe during construction work, the number of crossing points should be kept to a minimum. These points should be clearly indicated and crossings at other positions along the line of the pipe should be prevented. Where the pipe is not adequately protected by an existing road, crossing points should be suitably reinforced with sleepers, steel plates or a specially constructed reinforced concrete raft. The gas network operator will advise on the type of reinforcement necessary"*

As stated in Section 15.1.1.4 of the EIAR, which responds to issues raised by TII during the scoping of the Proposed Project, there will not be any abnormal axle loads associated with any of the delivery vehicles travelling to and from the Proposed Wind Farm site. The delivery vehicles will be abnormal in size only. It is however agreed that a structural assessment will be undertaken on the route at locations to be agreed with the relevant local authorities and TII. While it is proposed that the delivery stage of the Proposed Project will involve abnormally large loads, the axle loadings will not exceed accepted limits.

Section 8.1.1.2 of this Report provides further detail on potential impacts on underground gas pipelines during the construction, operation and decommissioning of the Proposed Wind Farm.

16. MAJOR ACCIDENTS

There are no updates to this Section of the EIAR.

17. INTERACTIONS

There are no updates to this Section of the EIAR.

18. SCHEDULE OF MITIGATION AND MONITORING

All updates to mitigation measures identified in the preceding sections are included in the below table which is to be read in conjunction with the Chapter 18 Schedule of Mitigation and Monitoring of the EIAR.

18.1 EIAR Mitigation Measures

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
Chapter 8: Land, Soils and geology					
Construction Phase					
MM140	Soils and Geology	EIAR Addendum Chapter 8	› No in-stream works are proposed, the drilling works will be done over a dry period, and if works occur outside the months of July to September (as required by IFI for in-stream works) the Applicant will be cognisant of the salmon spawning season, and will inform the IFI); › The crossing works area will be clearly marked out with fencing or flagging tape to avoid unnecessary disturbance; › There will be no storage of material / equipment or overnight parking of machinery inside the hydrological buffer zone; › The area around the batching, pumping and recycling plant will be bunded using terram (as it will clog) and sandbags in order to contain any spillages; › Drilling fluid returns will be contained within a sealed tank / sump to prevent migration from the works area; › Spills of drilling fluid will be cleaned up immediately and contained in an adequately sized skip before been taken off-site; › Daily monitoring of the compound works area, the water treatment and pumping system and the percolation area will be completed by a suitably qualified person during the construction phase. › All necessary preventative measures will be implemented to ensure no entrained sediment, or deleterious matter is discharged to the watercourse, In the event that works are giving rise to sediment or deleterious matter discharging to watercourses, the ECoW or supervising hydrologist will stop all works. The source of the sediment, or deleterious matter will be identified and		

			additional drainage measures will be installed in advance of works recommencing		
Chapter 9: Water					
Construction Phase					
MM141	Water	EIAR Addendum Chapter 9	Additional HDD Mitigation Measures for HDD, along with those outlined in the EIAR are: › No in-stream works are proposed, the drilling works will be done over a dry period, and if works occur outside the months of July to September (as required by IFI for in-stream works) the Applicant will be cognisant of the salmon spawning season, and will inform the IFI); › The crossing works area will be clearly marked out with fencing or flagging tape to avoid unnecessary disturbance; › There will be no storage of material / equipment or overnight parking of machinery inside the hydrological buffer zone; › The area around the batching, pumping and recycling plant will be bunded using terram (as it will clog) and sandbags in order to contain any spillages; › Drilling fluid returns will be contained within a sealed tank / sump to prevent migration from the works area; › Spills of drilling fluid will be cleaned up immediately and contained in an adequately sized skip before been taken off-site; › Daily monitoring of the compound works area, the water treatment and pumping system and the percolation area will be completed by a suitably qualified person during the construction phase. › All necessary preventative measures will be implemented to ensure no entrained sediment, or deleterious matter is discharged to the watercourse, In the event that works are giving rise to sediment or deleterious matter discharging to watercourses, the ECoW or supervising hydrologist will stop all works. The source of the sediment, or deleterious matter will be identified and		

			additional drainage measures will be installed in advance of works recommencing		
MM141	Water	EIAR Addendum Chapter 9	Prior to the commencement of any works near the mapped gas pipelines, the following mitigation measures will be implemented: › During the early stages of planning of the works contact will be made with Gas Networks Ireland Dial before you dig service and the relevant process followed as outlined in Gas Networks Ireland's "Code of Practice for working in the Vicinity of the Transmission Network (AO/PR/127); › A safe distance will be maintained between the electrical installation/infrastructure and the buried pipeline; › If the safe distance cannot be met, works will only begin once a risk assessment of the works has been completed and presented to GNI, with a subsequent written approval from GNI to proceed; › Where a cable is to cross over a gas pipeline as at E536244, N743608, the crossing methodology will be agreed with Gas Networks Ireland prior to the works; and, › The electrical cabling will be installed 450mm below ground, while the gas transmission pipeline is installed at 1535mm below ground level.