Environmental Impact Assessment Report

Cooloo Wind Farm Co. Galway

Chapter 13 – Landscape and Visual

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Planning and Environmental Consultants

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13. LANDSCAPE AND VISUAL

13.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) addresses the potential landscape and visual impacts of the Cooloo Wind Farm, Cooloo, Co. Galway. The emphasis in this chapter is on the likely significant direct and indirect effects of the Proposed Wind Farm on the landscape and visual amenity, including potential cumulative effects.

The assessments in this chapter were informed by site visits, verified photomontages, Zone of Theoretical Visibility (ZTV) mapping, a Route Screening Analysis, and an impact assessment methodology which follows best practice guidance for LVIA. The assessments are supported by one volume and four appendices as follows:

- *EIAR Volume 2: Photomontage Booklet*, presenting existing and cumulative visualisations of the proposed turbines from 15 no. representative viewpoints in the LVIA Study Area.
- *Appendix 13-1: LVIA Methodology*, outlining the detailed methodology and guidance used for the assessments reported in the LVIA.
- *Appendix 13-2: LCA Assessment Tables*, assessing effects on designated Landscape Character Areas (LCAs).
- *Appendix 13-3: Photomontage Visual Impact Assessment Tables*, a visual impact assessment of the 15 no. viewpoints presented in the *Photomontage Booklet*, including the assessment of cumulative effects.
- *Appendix 13-4: LVIA Baseline Map*, a large A0 map showing all baseline landscape features, visual receptors, the ZTV and the viewpoints.

13.1.1 Statement of Authority

MKO has extensive expertise and experience over the last 15 years in the LVIA of large-scale infrastructure developments for EIAR. The MKO Landscape and Visual team have produced LVIAs for a diverse range of project types, including renewable energy and grid infrastructure, residential developments, transport infrastructure, extraction infrastructure, and a range of other projects requiring EIAR.

This LVIA was written by Jack Workman and Rachel Smith and reviewed by Michael Watson. Daniel Mulpeter provided technical support to produce the LVIA, including fieldwork and GIS, with oversight from Jack and Michael.

Jack Workman MSc., TMLI. is the Landscape & Visual Project Director at MKO and is chartered as a Technician Member of the British Landscape Institute. Jack is an environmental scientist and an LVIA specialist with an academic background in the field of Environmental Science and Geography. Jack's primary role at MKO is scoping and writing LVIA for EIARs with over 5 years of experience managing all aspects of LVIA for a broad range of commercial infrastructure developments. Jack holds a BSc. in Psychology, and an MSc. in Coastal and Marine Environments (Physical Processes, Policy & Practice). Jack is an active participant in the National Landscape Forum, presenting in 2023, 2024 and 2025 on the topic of LVIA, he also regularly delivers guest lectures for students on the topic of LVIA at top third level institutions in Ireland including University of Galway, Trinity College Dublin, University College Dublin and University College Cork. Jack holds a membership with the Chartered Institute of Water and Environmental Management and is also a member of the Landscape Research Group.

Rachel Smith, MSc., is a Project Environmental Scientist and LVIA Specialist who has been working with MKO since October 2023. Rachel is an Earth & Environmental Science consultant with more than

10 years of professional experience in producing and editing technical scientific reports, and collecting, analysing and reporting environmental data for regulatory compliance in both the US and Ireland, including the utilisation of QGIS mapping, organisation of field work, management of environmental databases and training of environmental science staff. Rachel's primary role at MKO is producing and reviewing the LVIA chapter of EIA reports accompanying Planning Applications for multi-scale onshore renewable energy and non-wind developments, as well as conducting research in Irish landscape policy. Rachel holds an MSc. in Coastal and Marine Environments (Physical Processes, Policies & Practice) and a BSc. in Geology.

Michael Watson is the Environment Division Director at MKO, overseeing a team of highly skilled environmental professionals working on EIAR for a wide range and scale of projects, in particular large-scale infrastructure, housing, commercial and renewable energy development. Michael has over 25 years of experience in the environmental sector. Following the completion of his master's degree in environmental resource management, Geography, from National University of Ireland, Maynooth he worked for the Geological Survey of Ireland and then a prominent private environmental consultancy prior to joining MKO in 2014. Michael's professional experience includes managing Environmental Impact Assessments and Landscape & Visual Impact Assessments on behalf of clients in the wind farm, waste management, commercial and industrial sectors nationally. Michael worked on the capture and development of photomontages as well as compiling the Landscape & Visual Impact Assessments for some of the first wind turbines being proposed in Ireland in the early 2000's and has been compiling and reviewing LVIA chapters for multiple wind farm projects each year since 2014. Michael is a key member of the MKO senior management team and as head of the Environment Division has responsibilities to mentor various grades of team members, foster a positive working environment and promote continuous professional development for employees. Michael also has a Bachelor of Arts Degree in Geography and Economics from NUI Maynooth, is a Member of IEMA, and is a Chartered Environmentalist (CEnv).

Daniel Mulpeter is an Affiliate Member of the Landscape Institute and an LVIA Specialist with MKO with experience engaging in LVIA assessments for wind energy and public infrastructure. Daniel holds an MSc in Environmental Science from Trinity College Dublin, where he completed his thesis on "Estimating Peat Depth using Gamma-ray Spectrometry and Photogrammetry". He received a BSc (Hons) in General Science, finishing with Applied Maths and Biology. Daniel"s key strengths include proficiency in GIS tools such as QGIS and ArcGIS, conducting landscape and visual impact assessments, and capturing data through drone surveys and photomontages.

13.1.2 Proposed Project Description

The Proposed Wind Farm consists of 9 no. proposed turbines (tip height = 180m, rotor blade diameter range assessed = 150-162m, hub height range assessed = 99-105m), underground electrical (33kV) grid connection, on-site substation (110kV), meteorological mast (height = 100m) and ancillary works, facilities, and environmental measures. A detailed description of the Proposed Project and its component parts under the application can be found in Chapter 4 of this EIAR.

The Proposed Wind Farm is located within a rural, agricultural setting in eastern Galway, approximately 11km east of Tuam, Co. Galway and 5.4km west of Moylough, Co. Galway, with the rural node of Barnaderg, Co. Galway being the closest settlement to the Proposed Wind Farm (approximately 3km west of the nearest proposed turbine T1).

The Proposed Grid Connection includes a proposed 110kV onsite substation in the southwest of the site, within the townland of Dangan Eighter. The underground cabling from the proposed onsite 110kV substation will connect to existing Cloon 110kV substation in the townland of Cloonascragh, Co. Galway. The Proposed Grid Connection is located along the public road corridor and private land/tracks, primarily following the L-6234, L-2128, L-2115, L-2114, L-2125 Local Roads, the R332 and R347 Regional Roads, and N63 National Road.

In alignment with Chapter 1 of this EIAR, the following terminology is used in this chapter in relation to the proposed Cooloo Wind Farm, Co. Galway:

- **"Proposed Project"** refers to the entirety of the project ("Proposed Wind Farm" and "Proposed Grid Connection" as described below) for the purposes of this Environmental Impact Assessment (EIA) in accordance with the EIA Directive. The Proposed Project is described in detail in Chapter 4.
- **"Proposed Wind Farm"** refers to the 9 no. turbines and associated foundations and hardstanding areas, including access roads, underground internal cabling, permanent meteorological mast, temporary construction compounds, peat and spoil management, biodiversity enhancement, tree felling, site drainage, operational stage signage, 110kV onsite substation, and all ancillary works and apparatus.
- **"Proposed Grid Connection"** refers to the proposed 110kV onsite substation, battery energy storage and 110kV underground cabling connecting to the existing Cloon 110kV substation, and all ancillary works and apparatus.
- Where the **"Site"** is referred to, this relates to the primary study area for the EIAR, as delineated by the EIAR Site Boundary in green as shown on Figure 1-1 of the EIAR and encompasses an area of approx. 319 hectares
- Where the **"Proposed Wind Farm site"** is referred to, this refers to the portion of the Site surrounding the Proposed Wind Farm but excluding the portion of the Site surrounding the Proposed Grid Connection underground cabling route.

13.1.3 Essential Aspects of the Proposed Wind Farm from an LVIA Perspective

In terms of landscape and visual effects, this LVIA takes the 9 no. proposed turbines as the essential aspect of the Proposed Project from an LVIA perspective and also gives due to consideration to the associated ancillary elements and underground Proposed Grid Connection.

The tall, vertical nature of the proposed turbines make them the most prominent element from a landscape and visual perspective, having the most potential to give rise to significant landscape and visual effects. The best-practice guidance for LVIA utilised in Ireland and UK, i.e. Guidelines for Landscape and Visual Impact Assessment Third Edition or GLVIA3 published by Landscape Institute & Institute of Environmental Management and Assessment (LI & IEMA) (2013), states that:

> *"It is important to make sure that the project description provides all the information needed to identify its effect on particular aspects of the environment. For LVIA, it is important to understand, from the project description, the essential aspects of the scheme that will potentially give rise to its effect on the landscape and visual amenity".*

In this regard, the proposed turbines are deemed to be the "essential aspect" of the Proposed Project which will give rise to effects on the landscape and visual amenity and therefore are the primary focus of the LVIA. The proposed 100m meteorological mast is also a tall vertical structure; therefore, it is included in the visualisations presented in the *Photomontage Booklet* and is fully considered throughout this chapter. However, the met mast will be substantially less visible than the proposed turbines given its shorter and slender lattice form. In addition, the ancillary elements of the Proposed Project are deemed to be less visually prominent than the proposed turbines; however, these components may also potentially give rise to localised landscape and visual effects. Although these ancillary elements are not the primary focus of the LVIA, they are given due consideration and assessment in this chapter.

13.1.4 Range of Turbine Dimensions Assessed in this Chapter

As detailed in Chapter 1 of this EIAR, the proposed turbines to be installed on-site at the Proposed Wind Farm will have a ground-to-blade tip height of 180m and a hub height and rotor diameter within the following dimensions:

- Turbine Hub Height – Minimum 99m, Maximum 105m,
- Turbine Rotor Diameter — Minimum 150m, Maximum 162m.

This LVIA assesses the visual impact of proposed turbines considering these ranges of turbine dimensions. While the variations of hub-height and rotor diameter are considered, the tip-height of 180m will not change. The different scenarios assessed include both the minimum and maximum extents of the ranges and are discussed below.

13.1.4.1 Primary Turbine Model used for Assessment

Scenario 3 comprising a rotor diameter of 150m and hub height of 105m with the tip height of 180m is considered as the primary representative illustration of the turbines of the Proposed Wind Farm and was used to model all graphics for the viewpoints presented in the *EIAR Volume 2: Photomontage Booklet*. Scenario 3 was used to derive all Zone of Theoretical Visibility (ZTV) mapping in this chapter (described below in Section 13.3.1). The details of this turbine scenario are:

- **Scenario 3:** Maximum Hub Height, Minimum Rotor Diameter:
  - Tip Height – 180m,
  - Maximum Hub Height – 105m,
  - Minimum Rotor Diameter – 150m,
  - Represented by all 15 no. photomontage viewpoints assessed.

Scenario 3 has been identified as the most representative turbine configuration model for assessment on the basis that it is likely to show the greatest extent of the entire turbine structure (hub, blades and tower) and is likely to have the greatest visibility from the viewpoints assessed in this LVIA. The hub (or "nacelle") of the turbine is a prominent focal point and the visual prominence of a turbine is typically increased if the hub is viewed above a landscape feature, rather than below. Therefore, the Scenario 3 turbine configuration which incorporates the maximum hub height is likely to increase the visual prominence of turbines and represents a theoretically precautionary scenario for likely significant landscape and visual effects within the range proposed.

13.1.4.2 Assessing the Turbine Dimension Range using Photomontages and Comparative Wirelines

Photomontage visualisations are the best LVIA tool to assess likely visual effects arising due to differences of turbine configurations used within the proposed turbine dimension range.

Irrespective of which combination of hub height and rotor diameter outlined above is installed on-site, the significance of residual landscape and visual effects will not be altered. However, for the avoidance of doubt, two alternative turbine configurations are presented for two selected viewpoints included in the *Photomontage Booklet*:

- VP14: Tigreenaun (located 1.3km west of the proposed turbines).
- VP15: Cloondahamper (Brown) (located 1km northwest of the proposed turbines).

As per Chapter 1 of this EIAR, the two alternative turbine configurations are termed as follows:

- **Scenario 1** – Minimum Hub Height, Maximum Rotor Diameter:
  - Tip Height – 180m,
  - Minimum Hub Height – 99m,
  - Maximum Rotor Diameter – 162m.
- **Scenario 2** - Median Hub Height, Median Rotor Diameter:
  - Tip Height – 180m,
  - Median Hub Height – 102.5m,
  - Median Rotor Diameter – 155m.

The two selected viewpoints VP14 and VP15 are representative of short-range views where the difference in the scale of turbines is most likely to be perceptible. The photomontage assessment tables for these viewpoints which are contained in *Appendix 13-3: Photomontage Visual Impact Assessment Tables* include a row in each table addressing the alternative turbine configurations. Within the imagery, the differences between turbine scenarios are only discernible through the aid of a comparative wireline view in which the Scenario 3 model is overlain with the alternative configurations (see *Appendix 13-1: LVIA Methodology* for details of the comparative wireline views presented).

The visuals confirm that the turbine configuration ultimately selected to be installed on-site will not alter the assessment of residual significance of visual effects (see in Section 13.7 Likely "Significant" Landscape and Visual Effects).

13.1.5 Mitigation by Design

The Proposed Wind Farm site was strategically selected as a landscape highly suitable for the development of wind energy. Through the iterative project design process, various best practice tools for assessing the landscape and visual impact of a proposed wind farm development were utilised to bring forward the optimum design for the Proposed Project with respect to landscape and visual factors. These tools include landscape modelling, ZTV mapping and the preparation of photomontage visualisations.

The iterative design process was informed by the siting and design guidance for wind farms in specific landscape types as set out in the *Wind Energy Development Guidelines for Planning Authorities* published by the Department of the Environment, Heritage, and Local Government (DoEHLG) in 2006 (hereafter the "**2006 Guidelines**"), and with regard to the *Draft Revised Wind Energy Development Guidelines* published by Department of Housing, Planning and Local Government (DoHPLG) in 2019 (hereafter the "**draft 2019 Guidelines**").

Details of the various turbine layout iterations included as part of this design process are included in Chapter 3 Consideration of Reasonable Alternatives of this EIAR. Landscape and visual "mitigating"" factors which were key to the site selection and design of the Proposed Project are established below, the factors are of key relevance to the LVIA.

The Proposed Wind Farm layout that is the subject of this LVIA, already incorporates the following landscape and visual design considerations for good wind farm design, with a particular focus on strategic site selection:

- **Compliance with Wind Energy Development Guidelines Set-Back Distances:** Siting of proposed turbines exceeds the minimum 500m set-back distance in the 2006 Guidelines and also the 4-times-tip-height set-back distance explicitly set out for residential amenity prescribed by the draft 2019 Guidelines.
- **Appropriate Landscape Sensitivity in Local Planning:** The Proposed Wind Farm has been strategically sited within an area designated as "Low" landscape sensitivity in local planning policy (Galway County Development Plan 2022-2028), a Landscape Character Area of the lowest landscape sensitivity rating in County Galway.

- **No Impact on Designated Scenic Routes and Views:** The Proposed Wind Farm has been strategically sited in a location where there is no impact on any designated protected views in local planning policy.
- **No Impact on Designated Landscape Receptors:** The Proposed Wind Farm has been strategically sited in a landscape setting (an LVIA Study Area to 20km from the proposed turbines) with no designated or protected high sensitivity landscape receptors in local planning policy of county, regional or national renown.
- **Sparsely Settled & Highly Modified Landscape**: The infrastructure of the Proposed Wind Farm has been strategically sited within a sparsely settled landscape characterised by common agricultural land, commercial forestry and cutover peatland. It is therefore a modified working landscape deemed to be of low landscape sensitivity, and a site capable of effectively absorbing the Proposed Wind Farm.
- **Favourable Wind Energy Zoning for Proposed Turbine Locations:** 6 no. of 9 no. proposed turbines are sited within land area designated by local policy as "Open to Consideration" for wind energy development, while it is shown for the remaining proposed turbines sited within less favourable zoning that landscape and visual factors do not likely contribute to the zoning of their locations, and it is demonstrated that all proposed turbines are sited within the same highly modified, low-sensitivity landscape character type which is capable of absorbing the change.
- **Large Setback from Population Centres and Receptors:** Site selection and siting of proposed turbines ensures limited visibility and large setback distances from large population centres and designated landscape and visual receptors of high sensitivity.
- **Flat Nature of the Proposed Wind Farm site & Surrounds**: The proposed turbines have been located within a flat site surrounded by lands of similar elevations which limit open views of the project. This topographic feature of the Proposed Wind Farm site and surrounds mitigates the potential for overbearing or domineering effects provided sufficient setback from receptors is designed into the project. It also means that separation distances between receptors and turbines becomes important as the proposed turbines appear smaller in perceived scale quickly (over shorter distances) when viewed in this planar view.
- **Limited Visual Exposure:** At a macro scale, the landscape of the entire Site is predominantly characterised by agricultural fields with mature boundary vegetation and localised landform undulations, i.e. low hilly terrain. Consequently, as reported throughout this LVIA, the visual exposure of the proposed turbines is generally very limited from receptors beyond 5km from the proposed turbines, thereby limiting potential for landscape and visual effects in vast areas of the LVIA Study Area and from a large number of sensitive receptors.
- **Coherent Turbine Layout:** The proposed turbine layout has been designed to create a coherent arrangement of turbines, contiguous and connected to each other visually and with consistent spacing and an even height profile from most vantage points, in line with the guidance for design and siting of wind farms within the "Hilly and Flat Farmland" landscape character type defined in the 2006 Guidelines and draft 2019 Guidelines.
- **Underground Grid Connection:** The intended connection to the national electricity grid is underground, thereby eliminating potential landscape and visual effects during the operational phase. The onsite 110kV substation is the only above-ground component of the Proposed Grid Connection, and it is located within the Proposed Wind Farm site. The substation is to be sited within an agricultural field.

13.2 Brief Methodology and Assessment Criteria

This section broadly outlines the methodology and the guidance used to undertake the landscape and visual impact assessment of the Proposed Wind Farm; a more detailed description of the methodology is outlined in *Appendix 13-1: LVIA Methodology*. There are five main sections to this assessment:

- **Visibility of the Proposed Project** – describing ZTV mapping and on-site visibility appraisals.
- **Landscape Baseline** – identifying and scoping all landscape receptors including Landscape Character Areas (LCAs).
- **Visual Baseline** – identifying and scoping all visual receptors including sites of local sensitivity and residential receptors.
- **Cumulative Context** – identifying the context of cumulative projects with respect to other existing, permitted and proposed wind energy developments within the 20km LVIA Study Area.
- **Likely Significant Effects** – summarising all landscape, visual and cumulative residual effects of the Proposed Project as determined by this LVIA.

13.2.1 Guidance

The legislation and general guidance on Environmental Impact Assessment is set out in Chapter 1 of this EIAR. The LVIA reported in this chapter was guided and informed by guidance documentation specifically pertaining to LVIA. Details of the guidance used to conduct this LVIA are outlined in *Appendix 13-1: LVIA Methodology* (Section 1.3 Guidance).

13.2.2 Scope and Definition of Landscape and Visual Impact (LVIA) Study Area

In this chapter, the Proposed Wind Farm is the key focus of the assessments in this chapter as the turbines are the primary essential aspect of the Proposed Project under assessment of the LVIA (see previous Section 13.1.3).

The assessment of effects on landscape and visual amenity uses wider study areas beyond the Proposed Wind Farm site. For this assessment, two study areas with different radii were defined with respect to the location of the proposed turbines:

- 20km LVIA Study Area for the assessment of effects on landscape and visual receptors, hereafter referred to as the "**LVIA Study Area**",
- 15km LCA Study Area for the assessment of effects on designated "Landscape Character Areas" (LCAs), hereafter referred to as the "**LCA Study Area**".

On the basis of desk studies and survey work undertaken, the professional judgement of the assessment team, experience from other relevant projects and policy guidance or standards, the following topic areas have been scoped out of the assessment:

- Effects on landscape and visual receptors that have minimal or no theoretical visibility (as predicted by the ZTV) and/or very distant visibility and are therefore unlikely to be subject to significant effects.
- Effects on designated landscapes beyond a 20km radius from the proposed turbines, from where it is judged that potential significant effects on key characteristics and/or special qualities, or views are judged unlikely to occur.
- Effects on designated LCAs beyond a 15km radius from the proposed turbines, where it is judged that potential significant effects on landscape character are unlikely to occur.
- Effects on visual receptors beyond a 20km radius from the proposed turbines, where it is judged that potential significant effects are unlikely to occur.
- Cumulative landscape character effects beyond a 15km radius and cumulative landscape & visual effects beyond a 20km radius from the proposed turbines, where it is judged that potential significant effects are unlikely to occur.
- Cumulative effects in combination with single turbines with a tip height less than 50 metres which are located at distances greater than 5km from the Proposed Wind Farm,

where it is deemed no significant cumulative effects are likely to occur in combination with the Proposed Wind Farm.

13.2.3 Baseline Landscape and Visual Information

In order to carry out this assessment, an initial desk study of the following baseline information was undertaken to inform the LVIA:

Landscape Baseline

- Policies, objectives and designations contained in the relevant county development plans pertaining to landscape and wind energy:
  - Galway County Development Plan (GCDP) 2022-2028,
  - GCDP Appendix 1: Local Authority Renewable Energy Strategy (LARES),
  - GCDP Appendix 4: Landscape Character Assessment.
- Landscape Character Areas (LCAs) in the LCA Study Area and preliminary analysis of LCAs scoped in for assessment.
- Landscape character of the Proposed Wind Farm site based on site surveys undertaken in 2021, 2022, 2023 and 2024.
- Landscape sensitivity of the Proposed Wind Farm site assigning an overall "Sensitivity" rating to the site and its surrounding area according to its "Value" and "Susceptibility to Change".
- Landscape characterisation of the Proposed Wind Farm site as indicated in wind energy guidance of the 2006 Guidelines and draft 2019 Guidelines.
- Landscape character of the wider landscape setting of the LVIA Study Area.

Visual Baseline

- Visibility of the Proposed Wind Farm:
  - ZTV mapping,
  - Visibility appraisal within 5km through Route Screening Analysis, a method developed by MKO to quantify on-the-ground visual screening relative to the proposed turbines.
- Identification of visual receptors in the LVIA Study Area:
  - Designated Scenic Routes and Protected Views,
  - Settlements,
  - Recreational routes,
  - Recreational, cultural, and tourist destinations,
  - Transport routes,
  - Residential receptors.
- Preliminary analysis of visibility from visual and residential receptors according to ZTV mapping and on-site visibility appraisals.
- Identification of 15 no. viewpoints (VP01-VP15) representing visual receptors throughout the LVIA Study Area, selected for photomontage visualisation and assessment in the LVIA.

13.2.4 Assessment of Potential Impacts

The LVIA process used in this chapter is presented in *Appendix 13-1: LVIA Methodology* and includes clearly documented methods based on guidelines of the GLVIA3 (LI & IEMA, 2013) as follows.

The LVIA considers landscape and visual "Sensitivity" balanced with the "Magnitude of Change" to determine the likely significance of effects. Mitigating factors are then considered to arrive at "Residual" landscape and visual effects. Residual landscape and visual effects are graded upon an "impact

assessment classification of significance" scale, as defined by the EPA (2022) ranging as follows: "Imperceptible", "Not Significant", "Slight", "Moderate", "Significant", "Very Significant" or "Profound".

Photomontages are used as an illustrative tool to assess potential impacts, whereby the potential landscape and visual effects arising as a result of the proposed turbines are assessed from viewpoint locations representative of prominent landscape and visual receptors located within the LVIA Study Area. Throughout this chapter, "theoretical visibility" is referred to, based on ZTV mapping (see next Section 13.3 Visibility of the Proposed Project), and is assessed to compare "theoretical" versus "actual" visibility. The detailed methods used to produce ZTV maps and photomontages are included in *Appendix 13-1* (Section 1.5 Visibility Mapping: ZTV).

13.2.5 LVIA Wind Energy Context

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

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

Key factors of focus in the overall impact assessment on visual receptors in relation to photomontages are:

- The scale of the proposed turbines as a result of setback distance,
- The number of proposed turbines visible,
- Full or partial visibility of proposed turbines e.g. are they partially screened by features,
- Horizontal extent how do the turbines comprise the field of view experienced by receptors, with regard given to their composition within both 53.5-degree or 90-degree field of view shown in the *Photomontage Booklet*,
- Overall visual coherency with regards to form and arrangement and how the proposed turbines correspond to the landscape from a particular vantage point as per best practice siting and design guidance.

13.3 Visibility of the Proposed Wind Farm

13.3.1 Zone of Theoretical Visibility (ZTV) Mapping

Zone of Theoretical Visibility (ZTV) mapping is an important step in the LVIA process, in that it illustrates which areas within the LVIA Study Area have theoretical visibility of the proposed turbines and shows definitively which areas have no theoretical visibility.

The ZTV mapping methodology outlined in *Appendix 13-1: LVIA Methodology* was used to examine the theoretical visibility of the 9 no. proposed turbines of the Proposed Wind Farm from all landscape and visual receptors within the LVIA Study Area, using the half-blade height of the wind turbines as points of reference. As noted in *Appendix 13-1*, the potential for actual visibility on the ground is significantly less than the theoretical visibility predicted by the ZTV mapping due to on-site visual screening by intervening factors such as vegetation, built structure and localised undulations in topography, or visual screening owing to the disproportionate screening effect or atmospheric weather which obscure visibility.

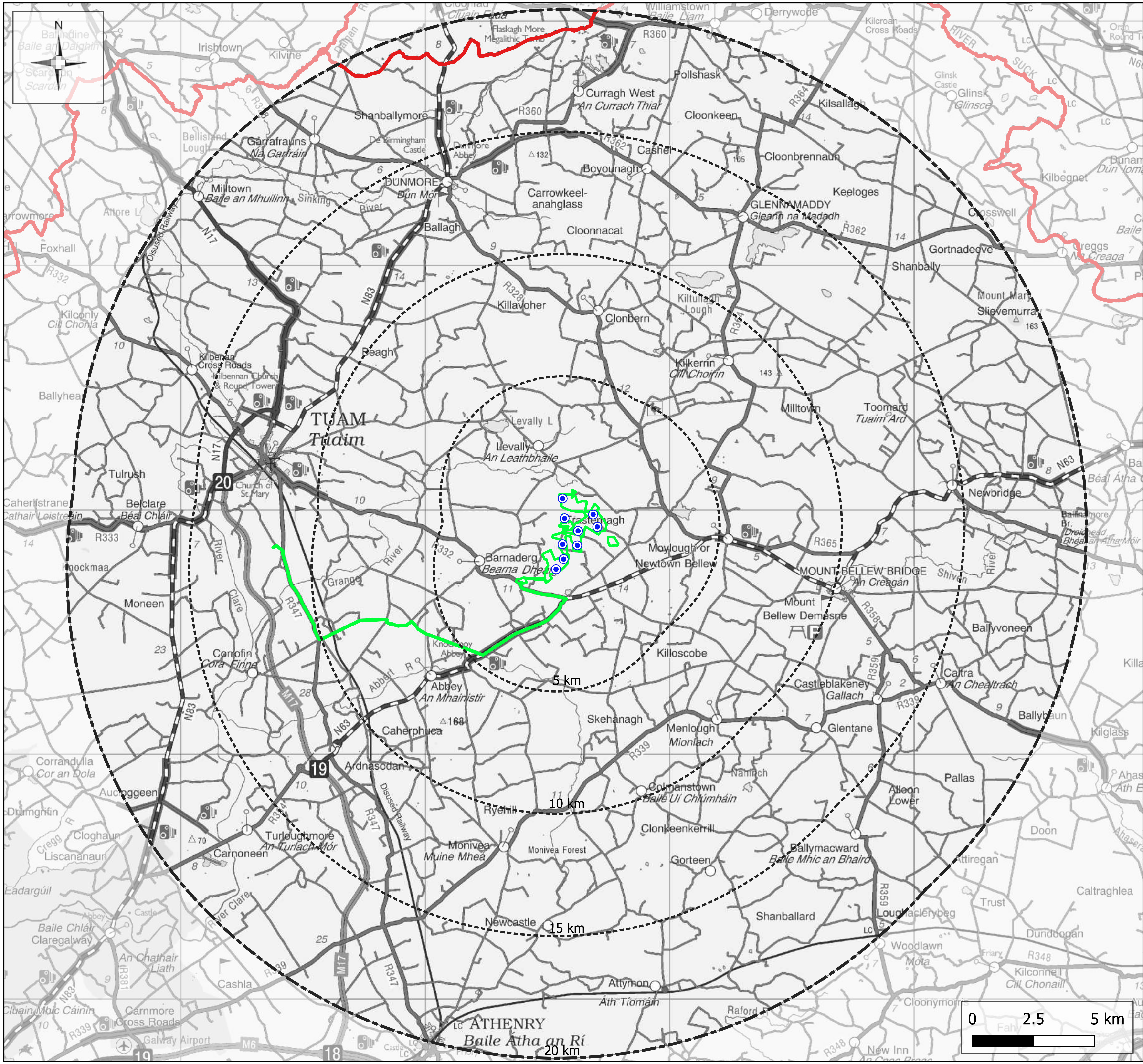
Generation of the ZTV utilises large scale topographical data (interpolation across 10 m OSi contour data) and does not account for topographical variation of smaller scale (e.g., < 10 metre). Therefore, in reality, modest, localised undulations in topography are likely to further inhibit visibility of the Proposed Wind Farm that may not be represented in the ZTV map. Other features of the landscape such as vegetation and man-made elements are also likely to obscure the proposed turbines from view from many areas where the ZTV indicates there is full visibility. In this regard, the ZTV is a useful tool to indicate definitive areas with no visibility of the proposed turbines, and thus, receptors located in these areas can be scoped out from further assessment.

13.3.2 Half-Blade ZTV of the Proposed Wind Farm

Separate colour bands are used on the ZTV map to indicate the number of turbines of which the half-blade will potentially be visible, shown on Figure 13-1 below. The legend one the map shows the number of visible turbines for each corresponding colour, which are as follows:

- Teal: 1-3 turbines theoretically visible,
- Yellow: 4-6 turbines theoretically visible,
- Grey: 7-9 turbines theoretically visible.

Following this, Figure 13-2 shows the topographical features and elevation gradients existent within the receiving landscape of the LVIA Study Area, the geography of these topographical landforms defines the distribution of theoretical visibility illustrated in the ZTV map illustrates that full theoretical visibility of the 9 No. turbines occupies a relatively large proportion of the study area. Overall, the flat and low-lying terrain results in extensive areas of theoretical visibility, with concentrated zones of full visibility extending in all directions within the 20km LVIA Study Area.



Map Legend

- County Borders
- LVIA Study Area
- EIAR Site Boundary
- Proposed Turbines

Zone of Theoretical Visibility

- 1-3 Turbines Theoretically Visible
- 4-6 Turbines Theoretically Visible
- 7-9 Turbines Theoretically Visible

Drawing No.

Figure 13-1

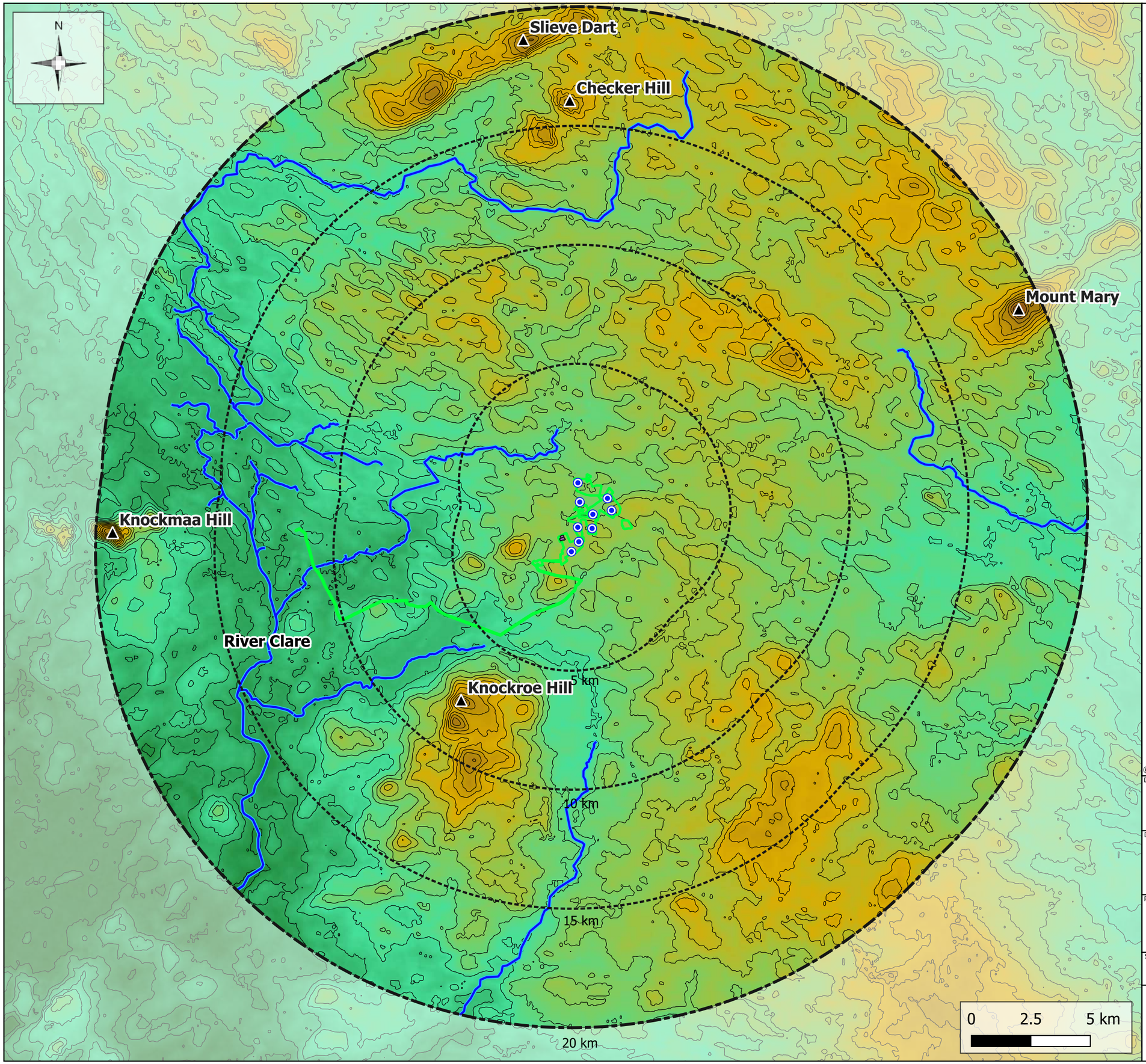
Drawing Title

Zone of Theoretical Visibility Map

Project Title

Cooloo Wind Farm, Co. Galway

Scale	Project No.	Date	Drawn By	Checked By
1:151,000	190723	03.09.2025	JC	RS



Map Legend

- County Borders
- LVIA Study Area
- EIAR Site Boundary
- Proposed Turbines
- Elevated Vantage Points
- Water Courses
- 10m Contours

Digital Elevation Model (AOD)

- 1m
- 50m
- 100m
- 150m
- 200m

Drawing No.

Figure 13-2

Drawing Title

Physical Landscape Features

Project Title

Cooloo Wind Farm, Co. Galway

Scale	Project No.	Date	Drawn By	Checked By
1:155,000	190723	03.09.2025	JC	JW

MKO

Theoretical Visibility within 5km of the Proposed Turbines

The proposed turbines are located within a relatively flat area of land with gentle undulations in the topography, resulting in predominantly full theoretical visibility within 5km of the proposed turbines. Localised undulations near the Proposed Wind Farm result in small areas of partial theoretical visibility due to the topographical screening from localised hills. The potential for actual visibility within 5km of the proposed turbines is further reduced by intermittent roadside vegetation screening, which is discussed in the next Section 13.3.3 On-Site Visibility Appraisal.

Theoretical Visibility beyond 5km of the Proposed Turbines

Knockroe Hill, located approximately 8km southwest of the Proposed Wind Farm is the most prominent topographical feature providing topographical screening of the proposed turbines from receptors beyond 8km in the southwest. This screening creates large areas of partial and no theoretical visibility to the south-west of the proposed turbines.

There is mainly full theoretical visibility throughout the remainder of the LVIA Study Area, owing to the generally flat nature of the landscape, with small pockets of no theoretical visibility scattered evenly throughout. To the northeast and southeast of the proposed turbines, the land is slightly more elevated with noticeably more “hilly” terrain. To the northwest of the proposed turbines there are relatively higher topographical features creating larger patchworks of no theoretical visibility beyond 9km. Mount Mary, Slieve Dart and Checker Hill are elevated features at the northern and eastern outskirts of the LVIA Study Area.

In the west of the LVIA Study Area, the elevation gradually declines into the River Clare basin, with Knockma Hill at the farthest western edge of the study area. To the west of the proposed turbines, there is predominantly full theoretical visibility due to the relatively flat terrain and elevation that gradually declines towards the River Clare. Knockma Hill is a prominent topographical feature at the western extent of the LVIA Study Area overlooking the River Clare basin. This hill and the slightly elevated land around it create small areas of no theoretical visibility along the western extent of the LVIA Study Area.

It should be noted that a very small portion of Co. Roscommon falls within the LVIA Study Area, seen in Figure 13-1 18.4km north of the proposed turbines, with primarily no theoretical visibility. Therefore, Co. Roscommon is scoped out from assessment in the LVIA.

13.3.3 On-Site Visibility Appraisal

As mentioned previously, the ZTV map is a useful tool to indicate areas where there will be no visibility of the proposed turbines. In practice, vast areas of the LVIA Study Area which have an indication of full theoretical visibility by the ZTV map, Figure 13-1 above, are likely to have no visibility of the proposed turbines due to visual screening from other above-ground features existent within the landscape.

Field surveys were conducted during 2021, 2022, 2023 and 2024 to determine the actual visibility in the direction of the proposed turbines from locations where the ZTV has indicated full theoretical visibility. These surveys determined that visual screening by localised undulations in topography and intervening vegetation and built structures substantially reduce the likelihood of viewing turbines in vast areas of the LVIA Study Area.

In most instances, visual screening existent in the gently undulating and highly vegetated landscape beyond 5km from the proposed turbines did not permit open views in the direction of the proposed turbines. It was found that visibility is only likely to occur from isolated, elevated vantage points with open, long-ranging landscape views in the direction of the proposed turbines. Representative

photomontages were captured from such elevated locations, where open views towards the proposed turbines were found. The visual effects are assessed in Section 13.7 Likely "Significant" Landscape and Visual Effects.

As demonstrated and discussed throughout this LVIA, the flat terrain is a positive attribute of the receiving landscape that greatly restricts actual visibility of the proposed turbines in areas beyond 5km from the proposed turbines. Visibility appraisals and photomontage visualisations determined that long-range visibility is very limited in these flat areas of the landscape due to visual screening from above-ground elements such as vegetation and built structures. Ultimately, very limited visibility or no visibility of the proposed turbines occurs beyond 5km, excepting for occasional circumstances where a localised rise in elevation creates elevated vantage points permitting open views across the landscape. The term "visual screening" (discussed below) is used throughout this LVIA and is an important concept to understand with respect to the exceptionally flat landscape of the LVIA Study Area and how this relates to the reality of visibility on the ground in such a flat landscape.

13.3.3.1 Disproportionate Visual Screening Effect

Any landscape feature that blocks a view and prevents a clear onward view has a "visual screening effect," whether it is a one-metre-tall wall, a two-metre-high roadside hedgerow, a five-metre-high building, or a 15-metre tree. As a full visual screen, such features only allow a person to see over them, thereby pushing the person's line of sight higher into the sky rather than along the level of the ground.

The impact of visual screening elements such as vegetation (forestry, road-side hedgerows, and trees) and buildings (particularly within cities, towns, and villages) on long range visibility are accentuated in flat lowland landscapes, this is called a disproportionate visual screening effect. The graphic in Figure 13-3 below best explains this "disproportionate screening effect". A ZTV may indicate full theoretical visibility of the proposed turbines from an open field or roadway. However, when a receptor is located at the same base elevation as a turbine, a feature such as a distant treeline has the capacity to greatly restrict or completely obscure visibility of the proposed turbine. Distance becomes a substantial factor determining visibility of proposed turbines as it is difficult to see beyond a few kilometres above visual screening within a flat landscape.

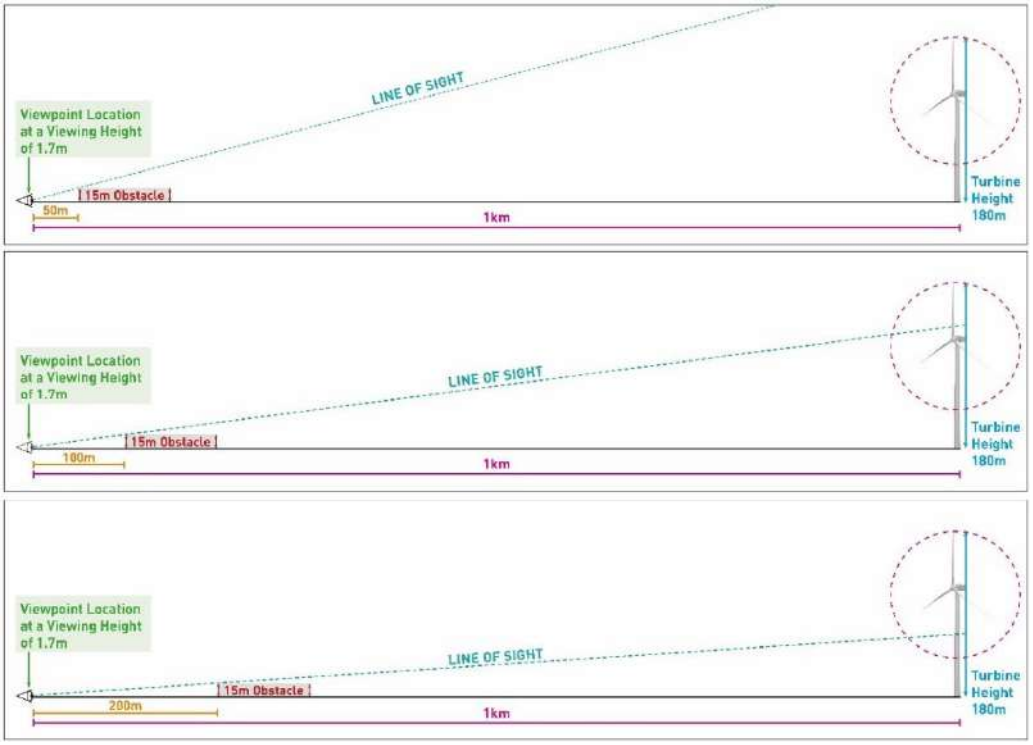


Figure 13-3 Disproportionate Visual Screening Effect

Figure 13-3 above illustrates the disproportionate screening effect that small features in the landscape can have on screening a proposed wind turbine from view. The figure shows a 180-metre-tall wind turbine located one kilometre from a viewing location. The illustration is modelled proportionally to ensure measurement accuracy and scaled to fit this report. A 15-metre-tall obstacle, such as a treeline is used as the landscape feature giving rise to the visual screening effect. In the three examples shown, the 15-metre obstacle is shown at 50 metres, 100 metres and 200 metres from the viewing location, and the resultant line of sight is shown as a blue line running from the viewing location upwards over the top of the obstacle.

13.3.3.2 Visibility in Close Proximity: Route Screening Analysis (RSA)

For this LVIA, Route Screening Analysis (RSA) was carried out within a 5km radius of the proposed turbines, in January 2024. Local roads within 3km were assessed, while major roads, such as regional and national roads, were assessed to 5km from the proposed turbines. RSA was conducted to record the varying degrees of visual screening along the local road network and demonstrate the actual potential for visibility of the Proposed Turbines compared to ZTV mapping. The full methodology is outlined in *Appendix 13-1: LVIA Methodology* (Section 1.5.3 RSA Methodology). The RSA visual screening categories are:

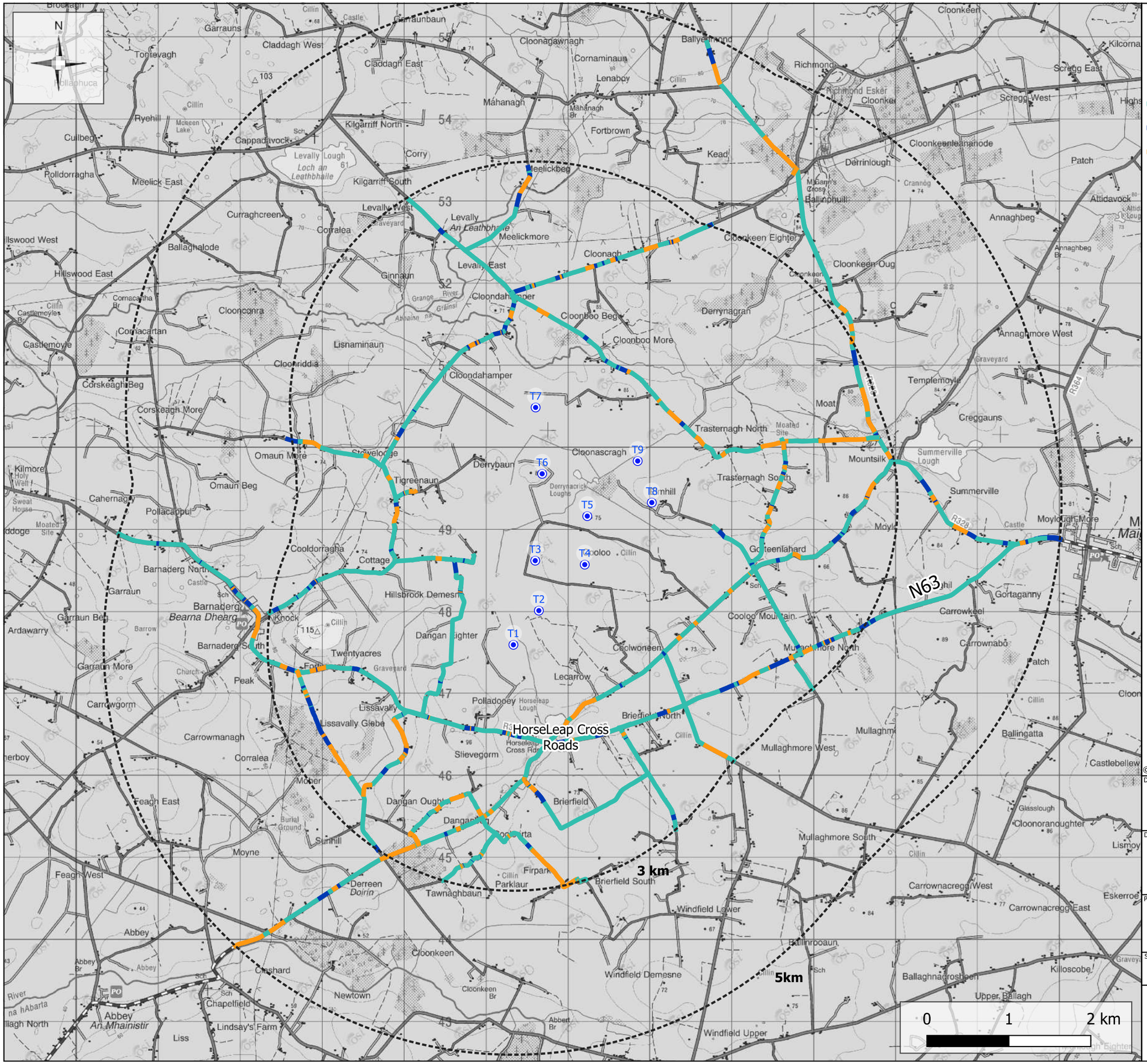
- **"Little/No"** visual screening: areas of the road that are mainly open with open views in the direction of the proposed turbines (see example below in Plate 13-1);
- **"Intermittent/Partial"** visual screening: areas of the road where there are intermittent or partial views in the direction of the proposed turbines (see Plate 13-2);
- **"Dense/Full"** visual screening: areas of the road with dense visual screening, sufficient to block views in the direction of the proposed turbines (see Plate 13-3).

The distribution of the visual screening on 75km of public road was recorded during the survey. The results of the route screening survey are mapped in Figure 13-4 below, this figure shows the extent at which each screening classification is present on public roads within 3km of the proposed turbines. Where roads continued beyond 3km from the proposed turbines, the RSA survey continued to record the screening until an appropriate termination point or junction. Screening along the N63 national road, R332 and R328 regional roads were recorded to a distance of 5km.

Plate 13-1 Example of "Little/No Screening" in the townland of Dangan Eighter

Plate 13-2 Example of "Intermittent/Partial Screening" in the townland of Lissavally Glebe

Plate 13-3 Example of "Dense/Full Screening" in the townland of Moher



Map Legend

- Proposed Turbines

Route Screening Analysis

- "Little/No" Visual Screening
- "Intermittent/Partial" Visual Screening
- "Dense/Full" Visual Screening

Drawing No.

Figure 13-4

Drawing Title

Route Screening Analysis Map

Project Title

Cooloo Wind Farm, Co. Galway

Scale	Project No.	Date	Drawn By	Checked By
1:45,000	190723	03.09.2025	JC	JW

N63 National Road

This road passes along the south of the Proposed Wind Farm site from the southwest to east towards the settlement of Moylough. Immediately south of the Proposed Wind Farm site, this national road intersects the R332 regional road and a local road at the Horseleap Cross Roads. There is mainly Little/No Screening along the stretch of the N63 travelling east of the crossroads, with sections of both of Dense/Full Screening and Partial/Intermittent Screening becoming more prominent towards the 3km boundary due to roadside vegetation. The stretch of the N63 between Moylough and the 3km perimeter has mainly Little/No Screening in the direction of the proposed turbines, with the exception of a short stretch of road upon leaving Moylough with Partial/Intermittent Screening.

There is predominantly Little/No Screening along the portion of this national road southwest of the Horseleap Cross Roads, with a short stretch of Dense/Full Screening near the 3km boundary where commercial forestry is present in the area. Beyond the 3km boundary there is an even mix of both Little/No Screening and Dense/Full Screening in the direction of the proposed turbines.

R332 Regional Road

The R332 stretches from the Horseleap Cross Roads in a northwest direction relative to the Proposed Wind Farm site. There is predominantly Little/No Screening along this road, with short sections of both Dense/Full Screening and Partial/Intermittent Screening near the Horseleap Cross Roads and southeast of the settlement of Barnaderg. The portion of this regional road that passes through Barnaderg has a greater presence of Dense/Full Screening and Partial/Intermittent Screening due to the buildings and vegetation around the settlement.

R328 Regional Road

The R328 regional road intersects the N63 national Road just on the western outskirts of Moylough and passes in a northern direction east of the Proposed Wind Farm site. The short section of this regional road within 3km was deemed to have mainly Dense/Full Screening with shorter sections of both Partial/Intermittent Screening and Little/No Screening. The section of this road west of Moylough has short stretches of Little/No Screening in the direction of the proposed turbines, interspersed with portions of both Dense/Full Screening and Partial/Intermittent Screening. The more northern section of this road was found to have greater stretches of Little/No Screening with some short stretches of Dense/Full Screening.

Local Roads

The L-2226 is a local road stretches from the west to the northeast of the Proposed Wind Farm site, from Barnaderg until the intersection with the R328 (which falls beyond 3km). There is primarily Little/No Screening in the direction of the proposed turbines along this road. There are occasional short stretches of Partial/Intermittent Screening and Dense/Full Screening along this route, which become more frequent north of the Proposed Wind Farm site around the townland of Cloondahamper (Brown).

The L6506 is a local road located west within close proximity to the Proposed Wind Farm site and connects the R332 regional road the L-2226 local road. This road has predominantly Little/No Screening.

The L-2225 is a local road that offshoots from the R328 regional road and runs in a northwest direction just northeast of the Proposed Wind Farm site. The stretches of road east of the proposed turbines have greater stretches of Dense/Full Screening compared to the rest of this stretch of local road extending north where there is primarily Little/No Screening, with small portions of at least Partial/ Intermittent Screening.

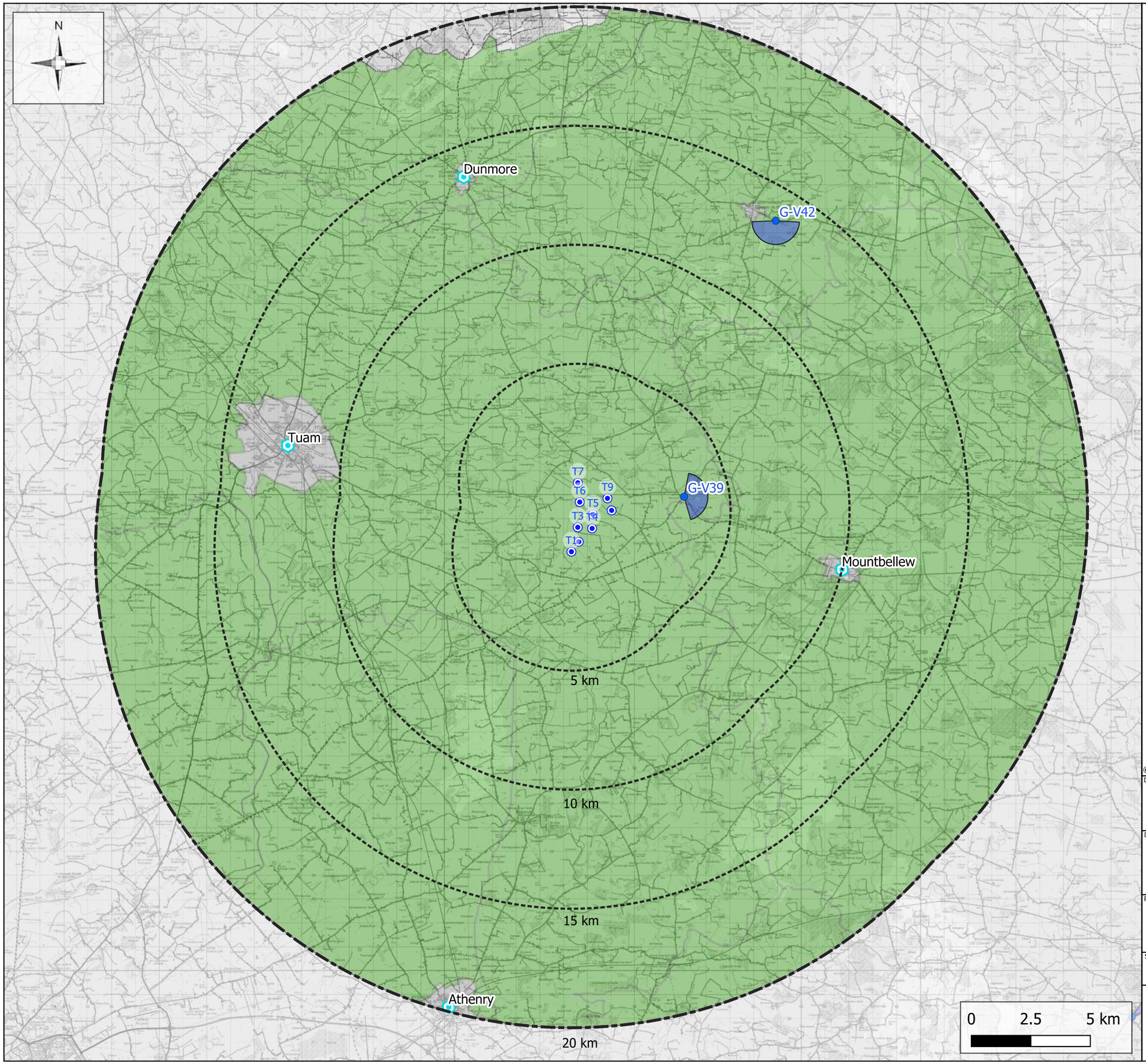
The L-2302 is a local road running in a northeast direction south of the Proposed Wind Farm site, between the Horseleap Cross Roads and R328. There is Dense/Full Screening in the direction of the proposed turbines along this road just northeast of the Horseleap Cross Roads and short sections just west of the R328, however there is predominantly Little/No Screening along this local road.

13.4 Landscape Baseline

The Landscape Baseline section details relevant policies pertinent to this LVIA, as well a description of the receiving landscape of the Proposed Wind Farm site and its wider setting within the 20km LVIA Study Area, including the preliminary analysis and scoping of designated Landscape Character Areas (in the case of Co. Galway, Landscape Character Units) identified for the assessment of effects on landscape character in the 15km LCA Study Area.

This section is divided into:

- **Landscape Designations and Policy Context –** Policies, objectives and designations contained in the relevant county development plans pertaining to landscape and wind energy:
    - Galway County Development Plan (GCDP) 2022-2028,
    - GCDP Appendix 1: Local Authority Renewable Energy Strategy (LARES),
    - GCDP Appendix 4: Landscape Character Assessment.
- **Landscape Character Areas & Preliminary Analysis –** Landscape Character Areas (LCAs) in the LCA Study Area and preliminary analysis of LCAs scoped in for assessment.
- **Landscape Character of the Proposed Wind Farm site –** Landscape character and sensitivity of the Proposed Wind Farm site based on site surveys undertaken in 2021, 2022, 2023 and 2024.
- **Landscape Sensitivity of the Proposed Wind Farm site –** Assigning an overall "Sensitivity" rating to the site and its surrounding area according to its "Value" and "Susceptibility to Change" based on the appraisal of multiple indicators:
    - Landscape designations,
    - Quality/condition of landscape elements,
    - Scenic/aesthetic qualities,
    - Rarity/conversation status,
    - Wildness/naturalness,
    - Recreational value,
    - Cultural meaning/associations.
- **Landscape Character from Wind Energy Development Guidelines** – Landscape characterisation of the Proposed Wind Farm site as indicated in wind energy guidance of the 2006 Guidelines and draft 2019 Guidelines.
- **Landscape Character of the Wider Setting** – Landscape character of the wider landscape setting of the LVIA Study Area.



Map Legend

- Proposed Turbines
- Protected Views (GCDP)
- Protected Views Direction (GCDP)

Landscape Sensitivity Ratings (GCDP)

- Low
- Urban
- Urban Areas

Drawing No.

Figure 13-5

Drawing Title

Landscape Policy Context Map

Project Title

Cooloo Wind Farm, Co. Galway

Scale	Project No.	Date	Drawn By	Checked By
1:155,000	190723	03.09.2025	JC	JW

13.4.1 Landscape Designations and Policy Context

This section reviews the policies and objectives of various planning policy documents relating to landscape, planning and the locational siting of wind farms, as they relate to the site of the Proposed Project.

The Proposed Wind Farm site is located in Co. Galway, therefore, the Galway County Development Plan (GCDP) 2022-2028 was consulted to identify landscape designations existent within the LVIA Study Area. Additionally, general landscape policy and landscape policy pertaining to wind energy development are also included in this section of the LVIA, providing context for the selection of the Proposed Wind Farm site as a landscape suitable for a wind energy development.

One small area of Co. Roscommon is located within the north of the LVIA Study Area, as seen previously in Figure 13-1. There is predominantly no theoretical visibility indicated in this area of the LVIA Study Area, therefore Co. Roscommon is scoped out from further assessment.

13.4.1.1 County Galway

Landscape and visual designations within the LVIA Study Area from the GCDP are mapped above in Figure 13-5 Landscape Policy Context Map. The entire landscape of the LVIA Study Area is designated as "Low Sensitivity" and there are two protected views.

13.4.1.1.1 *General Landscape Policy*

The GCDP describes landscape as a *"precious national asset with a variety of landscape types ranging from the quartzite mountain ranges and blanket bogs of Conamara to the fertile patchwork of farmland in east Galway and the bare karst pavements of the Oileáin Árann and South Galway."* Section 8.13 of the GCDP outlines policies related to the landscape and visual amenity within County Galway.

The section also notes that a Landscape Character Assessment was prepared for the county, which is contained in Appendix 4 of the GCDP. The GCDP described it as a process that "*describes, maps and classifies landscapes objectively. Defining landscape character enables an understanding to be formed of the inherent value and importance of individual landscape elements and the processes that may alter landscape character in the future*".

The GCDP sets out an overall strategy for the proper planning and sustainable development of the administrative area of Galway County Council. It contains the following policy objectives related to landscape:

> ***"LCM1 Preservation of Landscape Character*** *- Preserve and enhance the character of the landscape where, and to the extent that, in the opinion of the Planning Authority, the proper planning and sustainable development of the area requires it, including the preservation and enhancement, where possible of* ***views and prospects*** *and the amenities of places and features of natural beauty or interest.*
>
> ***LCM 2 Landscape Sensitivity Classification*** *- The Planning Authority shall have regard to the* ***landscape sensitivity classification*** *of sites in the consideration of any significant development proposals and, where necessary, require a* ***Landscape/Visual Impact Assessment*** *to accompany such proposals. This shall be balanced against the need to develop key strategic infrastructure to meet the strategic aims of the plan.*
>
> ***LCM 3 Landscape Sensitivity Ratings*** *- Consideration of* ***Landscape Sensitivity Ratings*** *shall be an important factor in determining development uses in areas of the County. In areas of high*

landscape sensitivity, the design and the choice of location of Proposed Wind Farm in the landscape will also be critical considerations.

LCM 4 Open/Unfenced Landscape *- Preserve the status of traditionally open/unfenced landscape. The merits of each case will be considered in light of landscape sensitivity ratings and views of amenity importance."*

Regarding the above-mentioned terminology shown in bold, it should be emphasised that this LVIA takes consideration of potential impacts based on the designations of landscape sensitivity and discusses mitigation measures to mitigate potential for significant visual effects.

The following sub-sections address the specific elements covered by this planning policy including the designations of the landscape character assessment, the designated views, and landscape sensitivity ratings.

13.4.1.1.2 Landscape Sensitivity Rating

Section 8.13.2 of the GCDP states that a *"landscape's capacity to absorb new development, without exhibiting a significant alteration of character or change of appearance is referred to as its 'sensitivity'. This depends on factors such as elevation, slope, as well as the types of land-cover and soil."*

The Landscape Character Assessment contained in Appendix 4 of the GCDP defines and classifies the LCUs according to the following classifications:

- *Iconic: Unique Landscape with high sensitivity to change*,
- *Special: High sensitivity to change*,
- *High: Elevated sensitivity to change*,
- *Low: Unlikely to be adversely affected by change*.

As seen in Figure 13-5 above, the entirety of the Proposed Project, including the Proposed Grid Connection, is located in a Landscape Character Unit (LCU) classified as "Low sensitivity" in the GCDP, which is defined as *"Unlikely to be adversely affected by change"*.

13.4.1.1.3 Wind Energy Strategy

Appendix 1 of the GCDP 2022-2028 contains the County Galway Local Authority Renewable Energy Strategy (LARES). The LARES classifies Co. Galway into five zones for wind energy development as follows:

- *Strategic Area*,
- *Acceptable in Principle*,
- *Open to Consideration*,
- *Generally to be Discouraged*,
- *Not Normally Permissible*.

Along with landscape, the LARES incorporates many other factors into the wind energy zoning. As stated in Appendix 1 of the GCDP:

"In this strategy wind energy and landscape evaluation have been mapped along with other critical viability factors such as proximity to electrical grid, road access and other relevant environmental factors, such as ecological designations, elevation, land cover and population density."

There is an irregular mosaic of different wind energy zoning throughout the LVIA Study Area and within the landscape surrounding the site, as seen below in Figure 13-6.

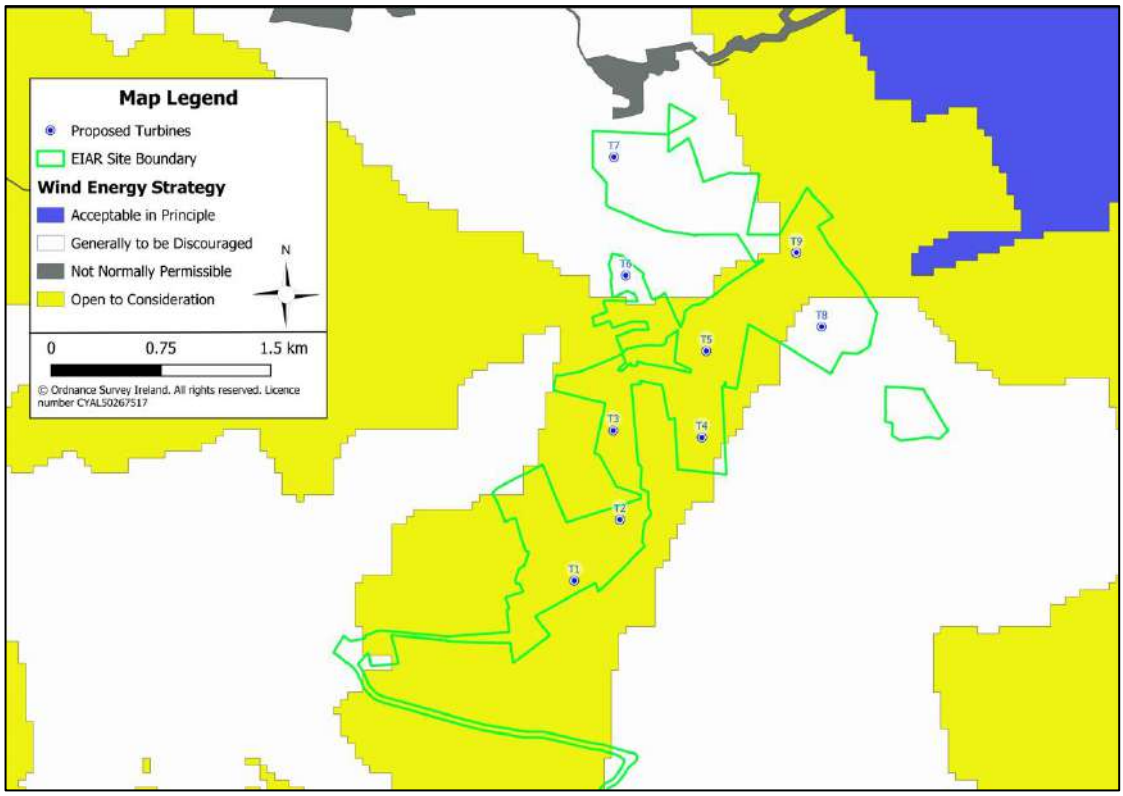


Figure 13-6 Wind energy strategy zoning of the Proposed Wind Farm site as per GCDP 2022-2028 Appendix 1

The majority of the proposed turbines are located within an area classified as *Open to Consideration* (6 of the 9 no. proposed turbines), and partially within an area classified as *Generally to be Discouraged* (3 of 9 no. proposed turbines), as seen in Figure 13-6. In the LARES, these areas are defined as follows:

- *Open to Consideration – "Areas where Wind Energy development is likely to be favourable considered - subject to the results of more detailed assessment of polices and potential effects."*
- *Generally to be Discouraged – "Areas where Wind Energy development is unlikely to be favourably considered on account of potential to adversely affect protected landscape, water, ecological resources and residential amenity."*

Proposed turbines T6, T7 and T8 are sited in LARES areas zoned as *Generally to be Discouraged*, as illustrated below in Figure 13-7. The GCDP states several factors which are used to zone land for wind energy development, including landscape and visual factors. The specific rationale for the difference in zoning seen above is inconclusive. However, considering the overall "Low" landscape sensitivity rating (lowest rating in Co. Galway) of both the Proposed Wind Farm site and the entire LVIA Study Area, landscape sensitivity is not considered to be the key factor influencing the zoning of lands where proposed turbines T6, T7 and T8 are located. Further justification is provided in the accompanying Planning Report and summarised in Chapter 2 Section 2.5.4.

Site investigations and GIS analysis determined that the landscape type and character of the *Generally to be Discouraged* lands where T6, T7 and T8 are located are generally the same type and character as that of the surrounding lands zoned as *Open to Consideration*, described as follows. The landscape within the different zoning shown in the maps above are modified working landscape types, comprising agricultural fields, cutover peatlands, and commercial forestry. The landscape of the Proposed Wind Farm site and its immediate setting are considered to be of low sensitivity and are considered landscape types which can effectively accommodate wind energy development, this is discussed further in Section 13.4.3 and Section 13.4.4 below.

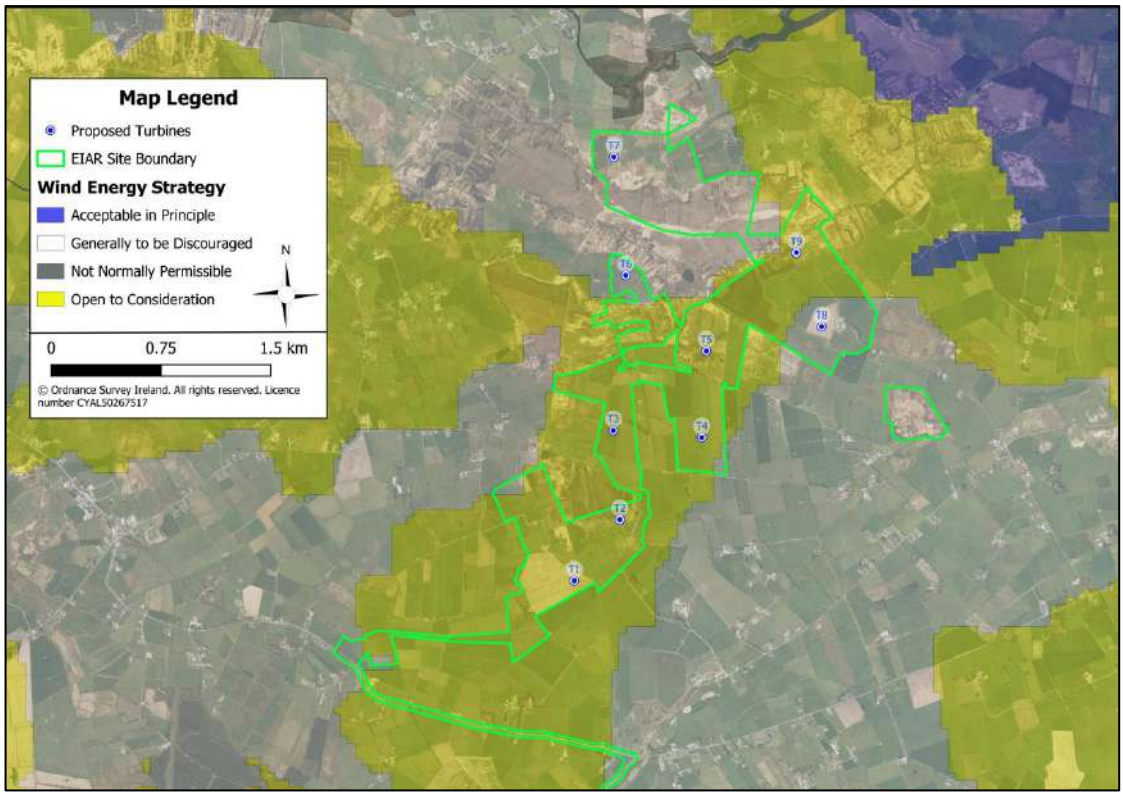


Figure 13-7 Aerial view of landcover and wind energy strategy zoning for proposed turbines T6, T7, T8

All 9 no. proposed turbines are located within a landscape rated as "Low" sensitivity to development in the GCDP. Site visits determined that the landscape of the Proposed Wind Farm site itself has been highly modified through commercial forestry and agriculture equating to a relatively low landscape value. Desk studies and site visits have determined that no sensitive landscape features of county, regional or national renown are located in the Proposed Wind Farm site. Proposed turbines T1-T5 and T9 are located within areas designated as *Open to Consideration* of the GCDP LARES.

13.4.1.1.4 Protected Views and Scenic Routes

The GCDP Appendix 4 Landscape Character Assessment for County Galway identifies protected views and scenic routes *"of great natural beauty located across the county."* The GCDP states that these protected views and scenic routes "*have a very important amenity, tourism, economic and cultural value for the county and its people"* and contains the following policy related to protected views and scenic routes:

> *"**PVSR 1 – Protected Views and Scenic Routes** - Preserve the protected views and scenic routes as detailed in Maps 8.3 and 8.4 from development that in the view of the Planning Authority would negatively impact on said protected views and scenic routes. This shall be balanced against the need to develop key infrastructure to meet the strategic aims of the plan."*

There are no designated scenic routes in the LVIA Study Area. There are two designated protected views within the LVIA Study Area, as shown previously in Figure 13-5, one of these is scoped in for assessment: G-V42 Glenmaddy Turlough (see Section 13.5 Visual Baseline).

13.4.1.1.5 Landscape Character Assessment

The GCDP Appendix 4 Landscape Character Assessment has divided the county into four landscape regions (West Galway Region, Eastern Galway Region, South Galway Region, and Coast), which are further broken down into a total of 10 Landscape Character Types (hereafter, LCTs); these are shown

in Map 8.1 of the GCDP. Appendix 4 defines an LCT as *"land that has an appearance that is readily recognisable as being different and distinctive from other areas".*

The Proposed Wind Farm site is located within the **North Galway Complex Landscape Type**. This LCT is described in the GCDP Appendix 4 as follows:

> *"An extensive grassland plain stretching from the Suck River in the east to the watershed of the River Clare in the west. It includes elevated areas such as Slieve Dart in the north, as well as lakes, turloughs, raised bogs, wetlands and winding rivers.*
>
> *Agriculture, scattered forestry and associated field patterns are very mixed and can exhibit large and abrupt changes of character over very short distances, especially in areas around bogs. It has a dense network of smaller settlements and roads, though at a lower density than the southern plains of the county.*
>
> *Open areas around bogs produce extensive sky views and the area that are free from light pollution."*

The GCDP Appendix 4 further describes this LCT as follows:

> *"The appearance and character of this landscape is very varied. Most consists of a plain that undulates with gentle slopes and occasional elevated areas like Knockma or Slieve Dart. Areas of high-quality grassland, large bogs and forestry can all be encountered in close proximity.*
>
> *Settlement occurs throughout this landscape, interconnected with a dense network of small roads that also serve extensive areas of dispersed rural housing on smaller holdings. Settlement is, generally, less dense towards the north-east because this part of the county contains large areas of blanket and raised bog, often interspersed with large areas of forestry.*
>
> *The large size of some of the bogs within this landscape provide areas of distinctive character and solitude where natural processes are still dominant. The Suck River lies within a shallow and distinctive lowlands that define much of the eastern boundary of this landscape.*
>
> *A history of less intensive development has resulted in a wealth of intact family-based local knowledge, place names and relatively undisturbed sites of historical importance such as Glinsk Castle.*
>
> *A history of less intensive development has resulted in a wealth of intact and relatively undisturbed sites of historical importance."*

It is stated in Appendix 4 that within this LCT the sensitivities are noted as *"Open countryside offers frequent extensive panoramic views from local highpoints."*

Each LCT in County Galway is further divided into Landscape Character Units (LCUs), defined in the GCDP Appendix 4 as *"the smallest area of distinctive local features within a Landscape Type that can be practicably identified to assist in policy formulation".*

The LCUs of the North Galway Complex LCT are mapped in *Map 04: North Galway Complex & Shannon Environs Landscape Units* of the GCDP Appendix 4. The Proposed Wind Farm site is located within the LCU 5e – North River Clare Basin Unit, described as:

> *"Extensive, largely level plain with low enclosure. A long-settled working landscape of large regular stone-walled fields. Extensive areas of bog in east. Transition zone from bog areas to east".*

All LCUs identified in the 15km LCA Study Area are mapped below in Figure 13-8 and Figure 13-9 and the next Section 13.4.2 provides the scoping table to identify LCUs scoped in for the assessment of effects on landscape character.

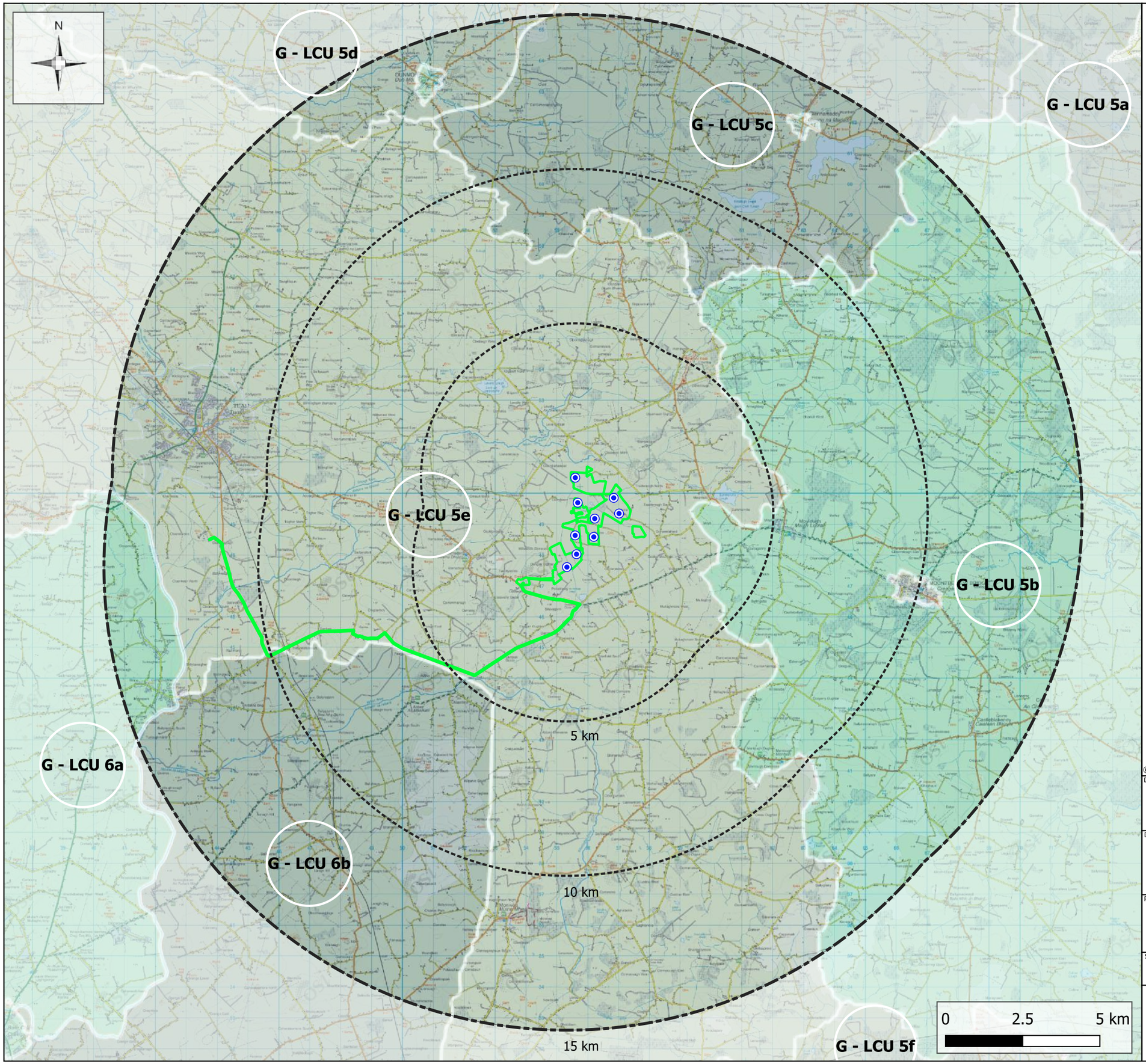
13.4.2 Landscape Character Areas (LCAs) & Preliminary Analysis

Previously in Section 13.4.1.1.5, 6 no. designated LCAs were identified within 15km of the proposed turbines in Co. Galway; these are listed and scoped below in Table 13-1. The potential visibility of the proposed turbines was appraised during site surveys conducted during 2021-2024 from all LCAs with limited or partial theoretical visibility. The ZTV and on-site visibility appraisals determine which LCAs are scoped in for full assessment, the scoping results are summarised at the end of this section.

Table 13-1 LCA Preliminary Assessment

Map Ref	LCA	Theoretical Visibility (TV) as indicated by ZTV	Actual Visibility	Scoped In for Assessment
Up to 5km				
G – LCU 5e	North River Clare Basin Unit	Primarily full TV within 5km with some more intermittent patches of no TV between 5km and 15km from the Proposed Wind Farm	Visibility will occur. However, on-site appraisals determined that there would be limited visibility in areas of the LCU beyond 10km from the proposed turbines.	Yes
G – LCU 5b	Castlegar Basin Unit	Primarily full TV within 10km with a mixture of areas of no TV and full TV between 10km and 15km from the Proposed Wind Farm.	Visibility will occur. However, on-site appraisals determined that there would be limited visibility in areas of the LCU beyond 10km from the proposed turbines.	Yes
G – LCU 6b	Southern River Clare Basin Unit	Primarily full TV within 10km with a large area of no TV. A mixture of full TV and no TV between 10km and 15km from the Proposed Wind Farm.	Visibility will occur. However, on-site appraisals determined that there would be limited visibility in areas of the LCU beyond 10km from the proposed turbines.	Yes
5 to 10km				
G – LCU 5c	Springfield Basin Unit	A mixture of full and no TV within	Visibility will occur. However, on-site	Yes

Map Ref	LCA	Theoretical Visibility (TV) as indicated by ZTV	Actual Visibility	Scoped In for Assessment
		10km of the Proposed Wind Farm. Primarily full TV beyond 10km with large patches of no TV of the proposed turbines.	appraisals determined that there would be limited visibility in areas of the LCU beyond 10km from the proposed turbines.	
10 to 15km				
G – LCU 5d	Slieve Dart Unit	Primarily no TV within this LCU and small patches of full TV located within a small section of this LCU.	Given the distance from the proposed turbines, there are likely to be no or very limited background views of the proposed turbines from the small part of this LCU located within the LCA Study Area.	No. Given the distance from the nearest proposed turbine and the small section of this LCU within 15km of the proposed turbines, no significant effects on the landscape character of this LCU are likely to occur.
G – LCU 6a	Black River Basin Unit	Full TV and small patches of no TV of the proposed turbines within the very small section of this LCU.	Given the distance from the proposed turbines, there are likely to be no or very limited background views of the proposed turbines from the small part of this LCU located within the LCA Study Area.	No. Given the distance from the nearest proposed turbine and the small section of this LCU within 15km of the proposed turbines, there will be no significant effects on the landscape character of this LCU are likely to occur.



Map Legend

- LCA Study Area
- EIAR Site Boundary
- Proposed Turbines

GCDP Landscape Character Units

- G-LCU 5a - Suck Valley Unit
- G-LCU 5b - Castlegar Basin Unit
- G-LCU 5c - Springfield Basin Unit
- G-LCU 5d - Slieve Dart Unit
- G-LCU 5e - North River Clare Basin Unit
- G-LCU 5f - North Loughrea Unit
- G-LCU 6a - Black River Basin Unit
- G-LCU 6b - Southern River Clare Basin Unit

Drawing No.

Figure 13-8

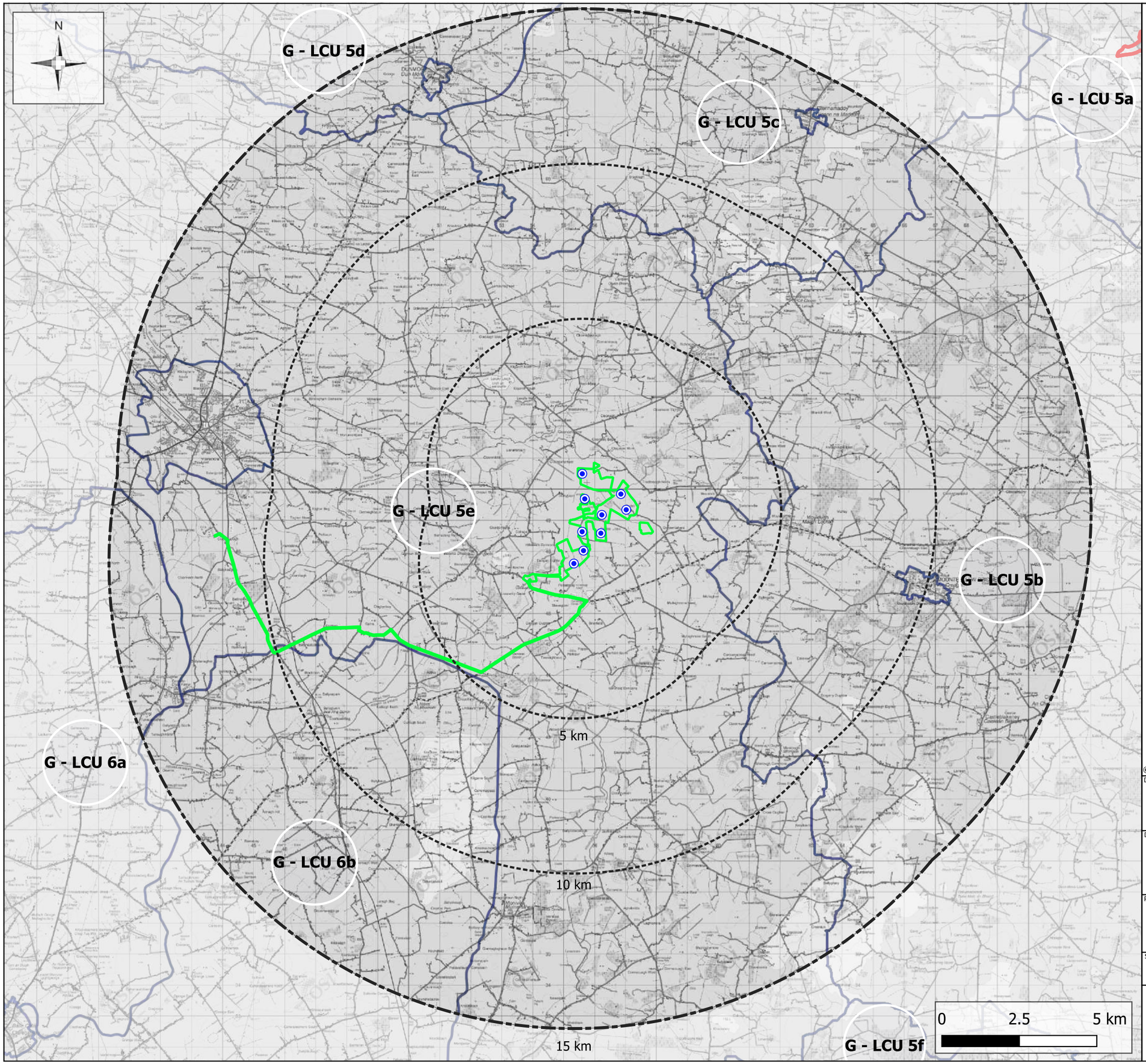
Drawing Title

Landscape Character Units

Project Title

Cooloo Wind Farm, Co. Galway

Scale	Project No.	Date	Drawn By	Checked By
1:119,500	190723	03.09.2025	JC	JW



Map Legend

- LCA Study Area
- EIAR Site Boundary
- Proposed Turbines

GCDP Landscape Character Units

- G-LCU 5a - Suck Valley Unit
- G-LCU 5b - Castlegar Basin Unit
- G-LCU 5c - Springfield Basin Unit
- G-LCU 5d - Slieve Dart Unit
- G-LCU 5e - North River Clare Basin Unit
- G-LCU 5f - North Loughrea Unit
- G-LCU 6a - Black River Basin Unit
- G-LCU 6b - Southern River Clare Basin Unit

Zone of Theoretical Visibility

- 1-3 Turbines Theoretically Visible
- 4-6 Turbines Theoretically Visible
- 7-9 Turbines Theoretically Visible

Drawing No.

Figure 13-9

Drawing Title

Landscape Character Units and ZTV Map

Project Title

Cooloo Wind Farm, Co. Galway

Scale	Project No.	Date	Drawn By	Checked By
1:119,000	190723	03.09.2025	JC	JW

Following the preliminary analysis, the LCAs shown in Table 13-2 below have been selected for assessment. As some proposed turbines are likely to be visible from areas within these LCAs, potential landscape effects may arise as a result of the Proposed Project. LCU-5d Slieve Dart Unit and LCU-6a Black River Basin Unit were scoped of the assessment; the rationale is provided in Table 13-1 above.

Table 13-2 LCAs Scoped in for Assessment in the LVIA

Map Ref.	LCA
G-LCU-5e	North River Clare Basin Unit
G-LCU-5b	Castlegar Basin Unit
G-LCU-5c	Springfield Basin Unit
G-LCU-6b	Southern River Clare Basin Unit

A detailed description of the four LCAs scoped in for assessment and the likely effects on landscape character as a result of the Proposed Wind Farm are presented in the Landscape Character Assessment Tables that form *Appendix 13-2*. A summary of landscape effects on these LCAs are reported in Section 13.7.3 Operational Phase Effects.

13.4.3 Landscape Character of the Proposed Wind Farm site

The Proposed Wind Farm site is located in a rural and flat lowland landscape. At a macro-scale the Proposed Wind Farm site is flat, with elevations varying only by 10 metres, from approximately 75m to 85m above ordnance datum (AOD). However, there are localised irregular landform undulations throughout the Proposed Wind Farm site - see the topography map below, Figure 13-10.

The land use comprises cutover bog, agricultural land, and commercial forestry. The landscape has been heavily modified and is a working landscape. Drainage is mainly controlled by minor watercourses (in some cases, with dry beds) and artificial drainage crossing the peatland landscape which is lined by mature scrub and vegetation. The following maps in Figure 13-11 and Figure 13-12 show the aerial view of landcover of all proposed turbine (T1-T9) locations, followed by imagery in Plate 13-4 through Plate 13-8 captured on-site:

- Agricultural fields: T1, T3, T4, T6, T7 and T8,
- Agricultural field leading into cutover bog: T9,
- Cutover bog with mixed scrub: T2 and T5.

The onsite 110kV substation is located in the southwest of the Proposed Wind Farm site, situated in agricultural fields bordering cutover peatland (Figure 13-11). The land use around the Proposed Grid Connection is shown in Figure 13-13, extending from the onsite 110kV substation to the existing Cloon 110kV substation, is mainly low-intensity agricultural fields amongst scattered, rural dwellings. The proposed underground cabling traverses along a proposed new road through existing agricultural fields between the southwest of proposed turbine T1 to the R-332 Regional Road. From here it will travel along the public road corridor until it meets an existing private track of the existing 110kV Cloon substation. The primary land use around these roads consists of agricultural fields bounded on the north and south by cutover bogs.

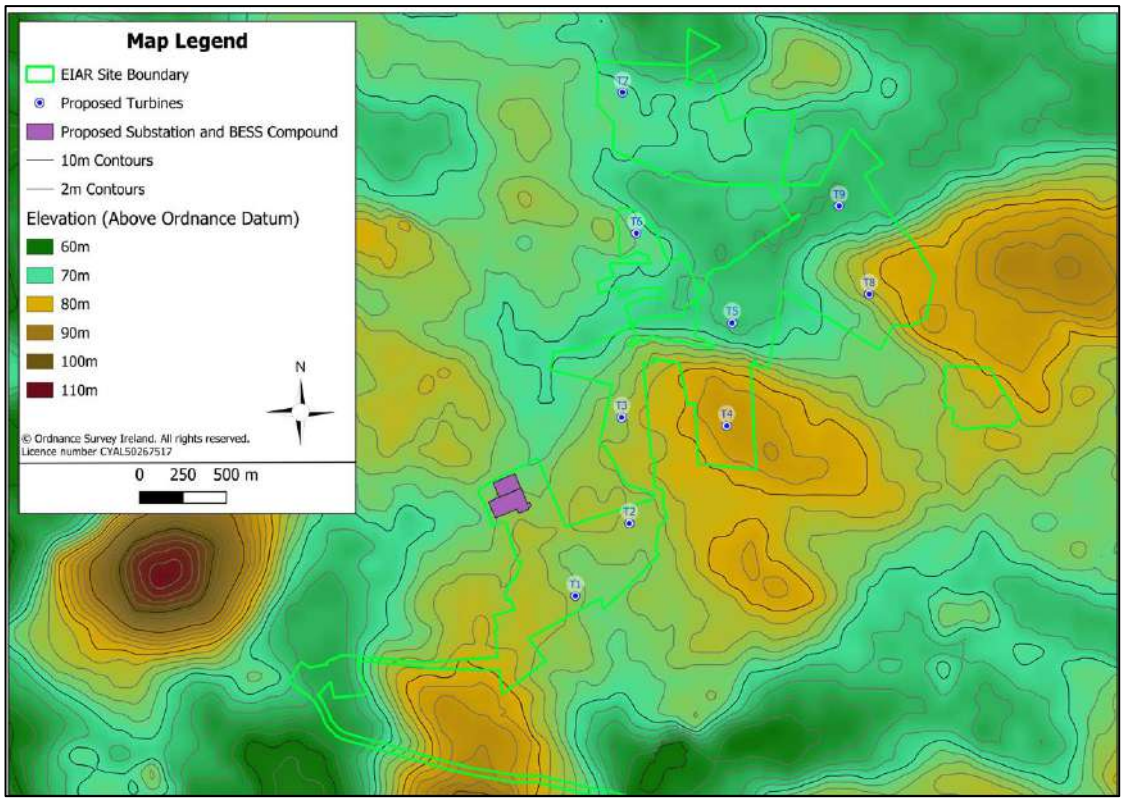


Figure 13-10 Topography of the Proposed Wind Farm site

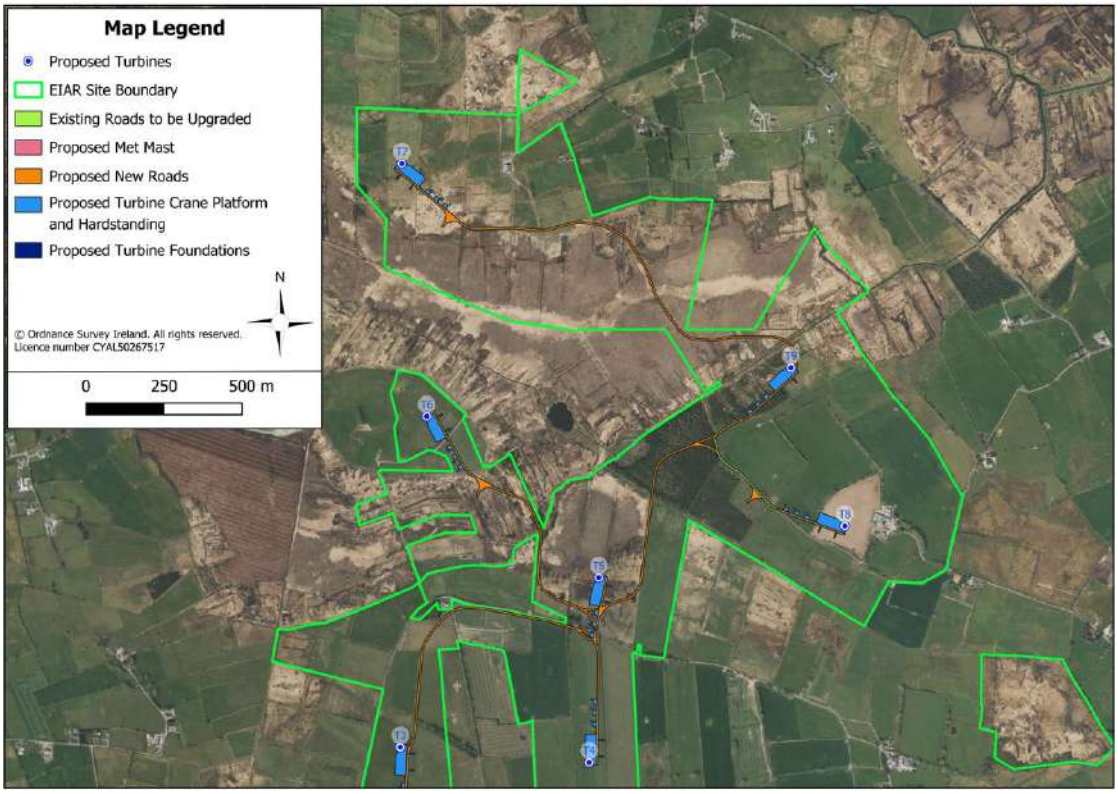


Figure 13-11 Landcover in the north of the Proposed Wind Farm site

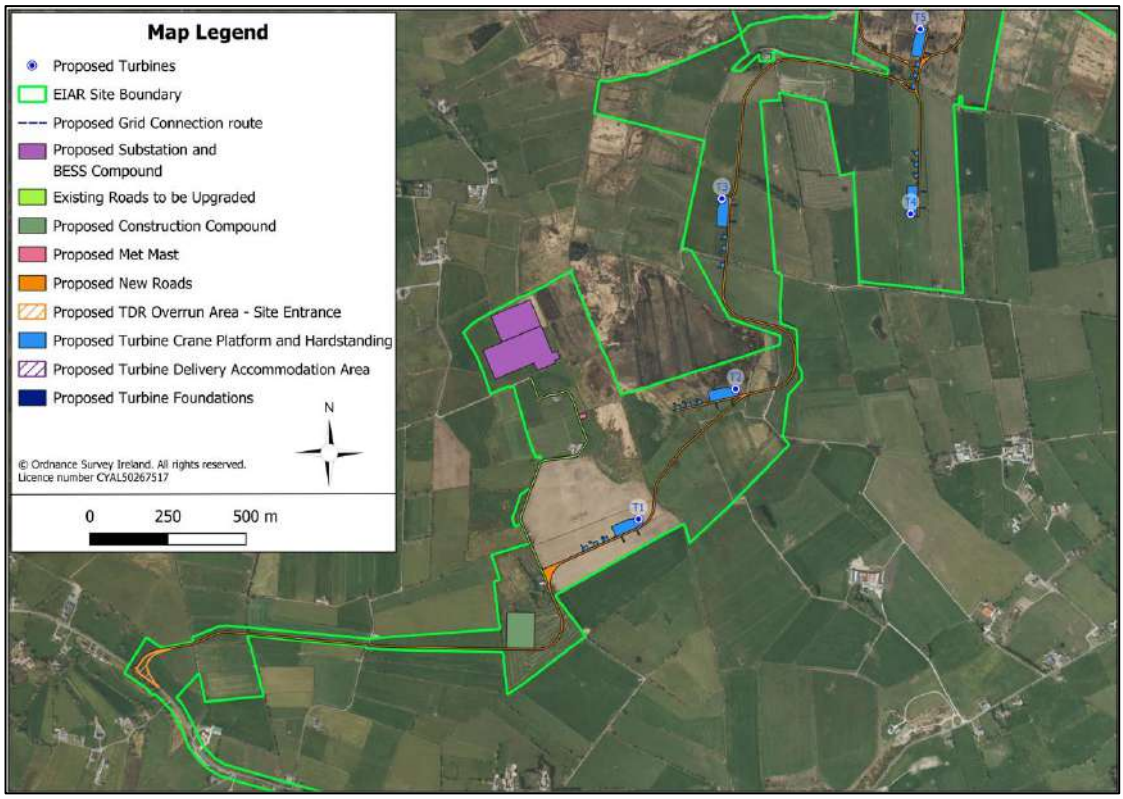


Figure 13-12 Landcover in the southwest of the Proposed Wind Farm site

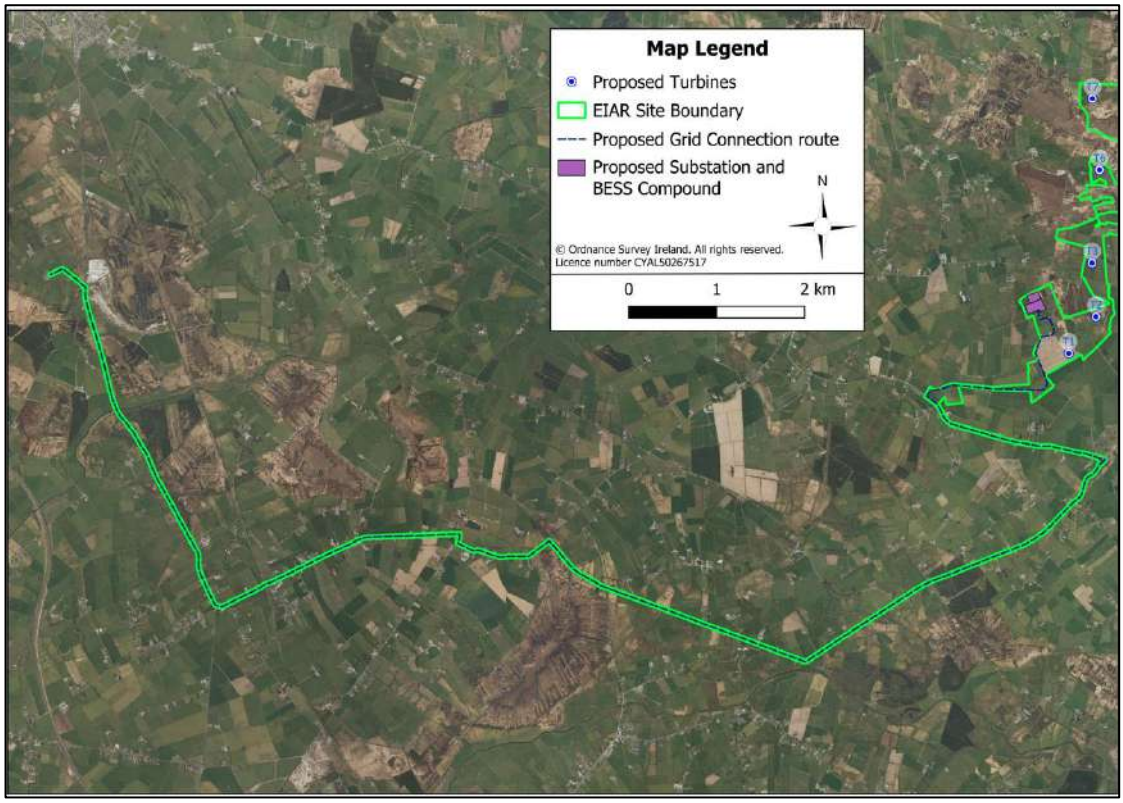


Figure 13-13 Landcover around the proposed Grid Connection route

Plate 13-4 View north of undulating pastural fields, where proposed turbine T4 is to be located

Plate 13-5 View to the northeast in the agricultural field where proposed turbine T1 is to be located

Plate 13-6 View of flat pastural field with ditch-type drainage, where proposed turbine T3 is to be located

Plate 13-7 View looking north, 180m south of proposed turbine T5 location

Plate 13-8 View of agricultural fields north of proposed turbine T9 location, lined with coniferous plantation and deciduous woodland

13.4.4 Landscape Sensitivity of the Proposed Wind Farm site

To determine the landscape "Sensitivity" of the Proposed Wind Farm site, the landscape "Value" and "Susceptibility to Change" were assessed to determine the capacity of the immediate landscape in which the Proposed Wind Farm will be built, as is prescribed by best practise guidance (GLVIA3, LI & IEMA, 2013, p.80):

> *"...as part of the baseline description the value of the potentially affected landscape should be established".*

Comprehension of the landscape value and susceptibility to change (to wind farm development) enables determination of the sensitivity of the landscape at a micro-level (meaning, the landscape of the Proposed Wind Farm site) and its capacity to absorb the infrastructure of a wind farm development.

The determination of landscape value takes into consideration the scenic amenity designations and landscape sensitivity and value designations found in the local landscape policy, as well as other indications of landscape value attached to undesignated landscapes.

Table 13-3 below lists seven indicators appraised collectively to establish landscape value and susceptibility to change, which were then considered in forming the overall landscape Sensitivity classification of the Proposed Wind Farm site.

The overall Sensitivity is assigned as "Very High", "High", "Medium" or "Low", following criteria outlined in the full detailed methodology in *Appendix 13-1: LVIA Methodology* (Section 1.7.2 Landscape Sensitivity: Value & Susceptibility to Change).

Table 13-3 Indicators of Landscape Value

Indicator	Evaluation
Landscape Designations	The Proposed Wind Farm is located within LCU 5e of County Galway – North River Clare Basin Unit. This unit is part of the North Galway Complex Landscape Character Type where sensitivities include *"open countryside offering frequent extensive panoramic views from local high-points".* The proposed turbines are located within areas designated as "Open to Consideration" and "Generally to be Discouraged". These are heavily modified working landscapes and there is no apparent difference in landscape character across these different areas of wind energy zoning within the Proposed Wind Farm site. The designated landscape sensitivity for the entirety of Co. Galway land within the LVIA Study Area is "Low", defined in the GCDP as *"Unlikely to be adversely affected by change".* The Proposed Wind Farm site is located in an area of Co. Galway with the lowest landscape sensitivity rating in the GCDP.
Landscape Elements Quality / Condition	The majority of the Proposed Wind Farm site is covered with agricultural grassland, cutover peatland and commercial forestry, evident of a landscape subject to human alteration and modification. The condition of the landscape is degraded in several locations within the Proposed Wind Farm site due to forestry operations, agriculture and historic peat extraction.
Scenic / Aesthetic Qualities	The landscape of the Proposed Wind Farm site has some rural aesthetic qualities given its remoteness and flat nature with medium-ranging views across open agricultural fields and bogland. The Proposed Wind Farm site has clearly been subject to substantial levels of human interference and modification.
Rarity or Conservation Interests	At the north of the Proposed Wind Farm site, there is one small area of active raised bog. The Proposed Project has been strategically designed to mitigate impacts on this area; a comprehensive assessment of conservation interests of the Proposed Project is provided in the EIAR Chapter 6 Biodiversity.
Wildness / Naturalness	The Proposed Wind Farm site is relatively undeveloped in terms of buildings and ancillary infrastructure and there is a degree of wildness and naturalness considering the set-back from human settlement. However, it is a modified landscape strongly influenced by forestry operations, agriculture and historic peat extraction.
Recreational Value	The Proposed Wind Farm site comprises privately owned land and is not used for any public recreational activities.
Cultural Meaning / Associations	No sites of popular cultural meaning or association are within the Proposed Wind Farm site. There are seven archaeological heritage sites and eight cultural heritage sites identified within the Proposed Wind Farm site; none are of national significance, and no significant negative effects are predicted on the sites. No directs effects on archaeological, architectural or cultural heritage resources are noted for the operational phase. A full assessment of potential cultural heritage impacts is reported in Chapter 14 Cultural Heritage.

In consideration of the factors detailed in the table above, the landscape value of the Proposed Wind Farm site is deemed low. The Proposed Wind Farm site is predominantly located within a modified working landscape with no unique or distinctive qualities of county, regional or national renown. There are no scenic amenity or landscape designations pertaining to the Proposed Wind Farm site itself. There is no recreational value to the Proposed Wind Farm site considering that it is privately owned land.

Working landscapes such as agricultural land, forestry and degraded peatland are commonly considered as unpopulated landscape types which can effectively accommodate wind energy development. Considering this, and the "Low" landscape sensitivity designation in the GCDP, the susceptibility of the Proposed Wind Farm site to the proposed change is considered low. On balance, the landscape sensitivity of the Proposed Wind Farm site is deemed "Low."

13.4.5 Landscape Characterisation in the 2006 Guidelines and draft 2019 Guidelines for Planning Authorities

This section considers the siting and design guidance for wind farms in specific landscape types as set out in the 2006 Guidelines and is cognisant of the draft 2019 Guidelines. These guidelines offer guidance for the siting and design of wind energy developments in various landscape contexts by defining six landscape character types that represent most situations where wind turbines may be proposed. The guidance is intended to be indicative and general and notes that it represents the "best fit" solutions to likely situations. The six landscape character types include "Mountain Moorland", "Hilly and Flat Farmland", "Flat Peatland", Transitional Marginal Land", "Urban/industrial" and "Coastal" landscape character types. The guidelines note that where a wind energy development is located in one landscape character type but is visible from another, it will be necessary to decide which might more strongly influence the approach adopted for the assessment. In consideration of Galway County Council landscape designations and site visits conducted by the MKO Landscape and Visual team, the physical characteristics of the Proposed Wind Farm site is best described by "Hilly and Flat Farmland" landscape character type. Therefore, the best practice siting and design strategies prescribed for Hilly and Flat Farmland (2006 Guidelines) were implemented for the Proposed Wind Farm.

13.4.5.1 Hilly and Flat Farmland

The key characteristics of Hilly and Flat Farmland landscape type as stated in the 2006 Guidelines and draft 2019 Guidelines are:

- *"Intensively managed farmland, whether flat, undulating or hilly;*
- *A patchwork of fields delineated by hedgerows varying in size;*
- *Farmsteads and houses are scattered throughout, as well as occasional villages and towns;*
- *Roads, and telegraph and power lines and poles are significant components; and*
- *A working and inhabited landscape type."*

The siting and design guidance given for "Hilly and Flat Farmland" landscape in the 2006 Guidelines and draft 2019 Guidelines is set out below:

Location

> *"Location on ridges and plateaux is preferred, not only to maximise exposure, but also to ensure a reasonable distance from dwellings. Sufficient distance should be maintained from farmsteads, houses and centres of population in order to ensure that wind energy developments do not visually dominate them. Elevated locations are also more likely to achieve optimum aesthetic effect. Turbines perceived as being in close proximity to, or overlapping other landscape elements, such as buildings, roads and power or telegraph poles*

and lines may result in visual clutter and confusion. While in practice this can be tolerated, in highly sensitive landscapes every attempt should be made to avoid it."

In terms of **location**, the Proposed Wind Farm site and immediate surrounds are not highly sensitive landscapes. The proposed turbines are set back a reasonable distance from dwellings, adhering to the recommended 4-times-tip-height set-back distance from the draft 2019 Guidelines. Also, siting the turbines on a flat plain of low-lying land within a relatively flat landscape results in the perceived scale of turbines reducing rapidly with increased distance from the Proposed Wind Farm site. The proposed turbines achieve an optimum aesthetic effect through adherence to many of the other recommendations in the guidelines listed below (Spatial Extent, Spacing and Layout).

Spatial Extent

"This can be expected to be quite limited in response to the scale of fields and such topographic features as hills and knolls. Sufficient distance from buildings, most likely to be critical at lower elevations, must be established in order to avoid dominance by the wind energy development."

In terms of **spatial extent**, as noted above, sufficient distance from buildings is achieved through the spatial extent of the Proposed Wind Farm, with the proposed turbines adhering to the minimum 500 metre set back distance in the 2006 Guidelines from third party properties and also the 4-times-tip-height set-back distance explicitly set out for residential receptors prescribed by draft 2019 Guidelines.

Given the scale of the receiving landscape, the proposed turbines occupy a relatively small spatial extent and are arranged in a linear array which is appropriate for "Hilly and Flat Farmland".

Spacing

"The optimum spacing pattern is likely to be regular, responding to the underlying field pattern. The fields comprising the site might provide the structure for spacing of turbines. However, this may not always be the case and a balance will have to be struck between adequate spacing to achieve operability and a correspondence to field pattern."

In terms of **spacing**, the turbines follow the irregular field pattern within the Proposed Wind Farm site. The turbines are spaced evenly throughout a site of varied landcover, including agricultural land, peatlands and tracts of forestry.

Layout

"The optimum layout is linear, and staggered linear on ridges (which are elongated) and hilltops (which are peaked), but a clustered layout would also be appropriate on a hilltop. Where a wind energy development is functionally possible on a flat landscape a grid layout would be aesthetically acceptable."

In terms of **layout**, the proposed turbines are aligned in a rough grid layout within the flat landscape. The turbines are evenly spaced in lines that give a sense of order to the layout when viewed from multiple orientations in the immediate surrounds, particularly within 5km of the proposed turbines.

Height

"Turbines should relate in terms of scale to landscape elements and will therefore tend not to be tall. However, an exception to this would be where they are on a high ridge or hilltop of relatively large scale. The more undulating the topography the greater the acceptability of an uneven profile, provided it does not result in significant visual confusion and conflict."

In terms of **height**, the proposed turbines will be tall features within the landscape. Overall, the proposed turbines retain a relatively even profile; when viewing the turbines, the nacelles are positioned at relatively even heights, improving visual coherence when viewed from areas within the wider landscape area.

Cumulative Effect

> *"It is important that wind energy development is never perceived to visually dominate. However, given that these landscapes comprise hedgerows and often hills, and that views across the landscape will likely be intermittent and partially obscured, visibility of two or more wind energy developments is usually acceptable."*

In terms of cumulative effect, there are 2 no. existing turbines located approximately 7.8km southwest from the Proposed Wind Farm. There are permitted wind farms within 10km of the Proposed Wind Farm. As noted below in Section 0 Cumulative Context, the turbines of the Proposed Clonberne Wind Farm (11 no. turbines) are located between 5-10km from the Proposed Wind Farm. Aside from these, the only other turbines located within the LVIA Study Area are two existing turbines located 7.8km west of the proposed turbines, 1 permitted turbine located 10.5km west of the proposed turbines, and 1 permitted turbine located 16.3km northeast of the proposed turbines. All cumulative developments identified in the LVIA Study Area are described and assessed in the cumulative sections below.

13.4.6 Landscape Character of the Wider Landscape Setting

The wider landscape setting surrounding the proposed turbines is almost entirely flat, comprising mainly the same mix of land uses within the Proposed Wind Farm site itself; that of agriculture, cutover bog and commercial forestry, amongst very small rural settlement clusters and scatter dwellings along local roads. Cutover peatlands are found throughout the LVIA Study Area; of note the Carrownagappul Bog is located greater than 10km east of the proposed turbines, which is part of the "Living Bog" restoration project. There are also several loughs throughout the LVIA Study Area, including the Glenamaddy Turlough.

In terms of topography and elevation, the LVIA Study Area is primarily flat with small areas of localised undulations and generally slopes downwards to the west. Knockroe Hill, at approximately 155m AOD, is located 7.9km southwest of the Proposed Wind Farm, with localised low-elevated hilly areas of Killooaun to the southeast. The elevated features of Knockma Hill, Mount Mary, and Slieve Dart are located on the periphery of the LVIA Study Area.

13.4.6.1 Historic Landscape Character

The GCDP 2022-2028 has no specific landscape designations or policy objectives pertaining to historic landscape character. The EIAR Chapter 14 Cultural Heritage, Section 14.3.1 reports the archaeological and historical background of the Proposed Wind Farm site comprising 6 no. townlands, and the proposed Grid Connection comprising a further 20 townlands. The land area of the Proposed Wind Farm site is reported as "pastoral agricultural farmland with some areas of raised blanket bog."

The wider landscape features a number of archaeological sites/groups of sites, recorded structures of archaeological merit, protected structures, and previously unrecorded sites of cultural heritage significance, including 2 no. recorded monuments, identified in Chapter 14. No sites are of national renown, and no significant negative effects are predicted on the sites. From Chapter 14, it is clear that the wider landscape has historically been used as a working landscape, as there are features such as *fulachtaí fia* (burn mounds), ringforts, field systems, stone walls, and other historical structures evident throughout the LVIA Study Area, delineated as a 20km radius surrounding the proposed turbines. Historical sites such as these are common features of modified working Irish landscapes across the country. Therefore, whilst the historical landscape character of the Proposed Wind Farm site and the

surrounding landscape is noteworthy, it is not necessarily unique in terms of cultural heritage features throughout the whole of Ireland.

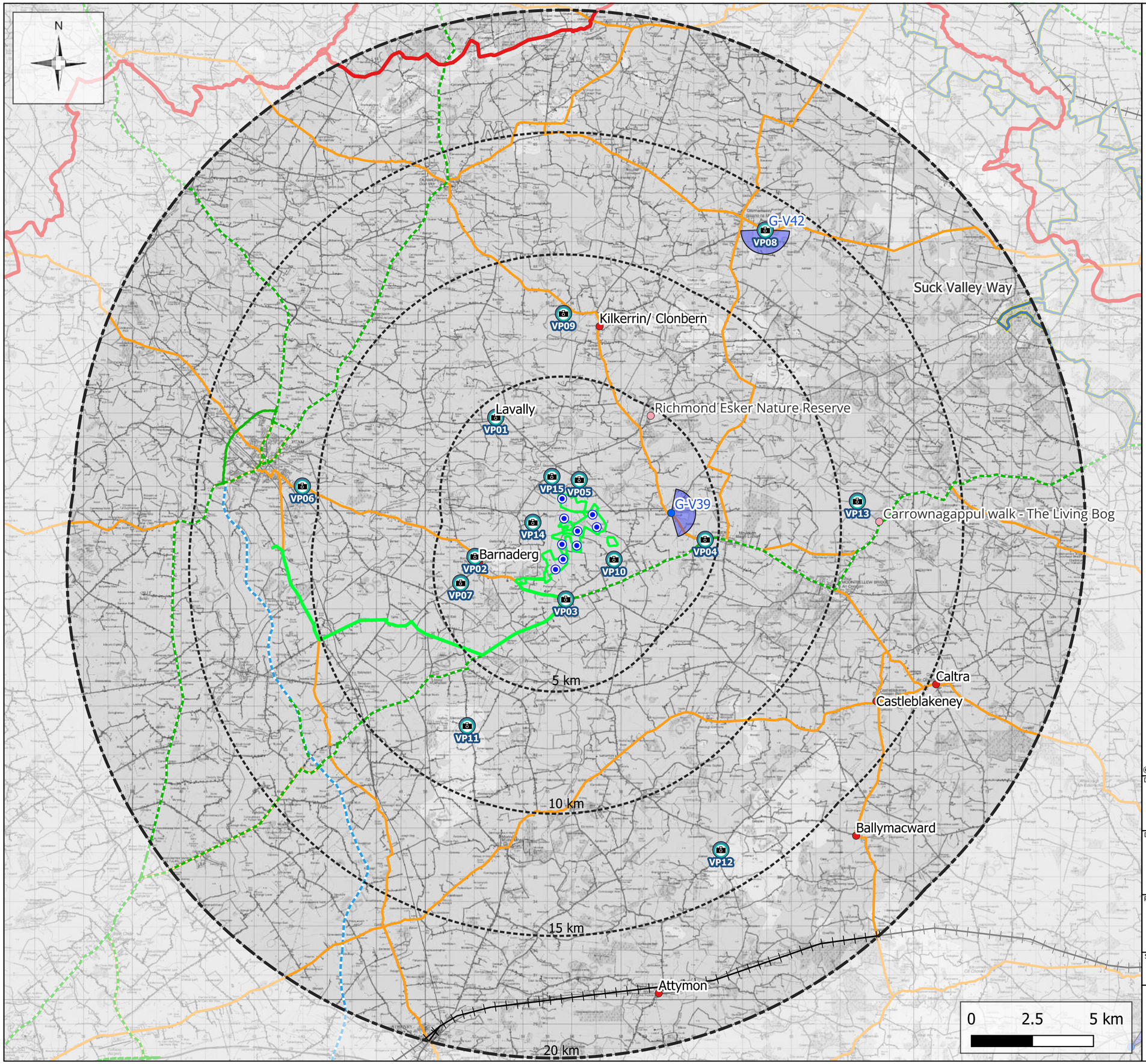
13.5 Visual Baseline

The "Visual Baseline" exercise identifies the key visual receptors to be considered for assessment within the 20km LVIA Study Area, having utilised ZTV mapping, on-site visibility appraisals and desk study to scope receptors in/out of further assessment.

A total of 14 no. visual receptors were scoped in for assessment following the visual baseline exercise, and 15 no. viewpoints were selected to represent views of the chosen receptors. The chosen visual receptors include:

- 1 no. designated protected view in the GCDP 2022-2028,
- 7 no. settlements including a key town, small growth villages and rural nodes,
- 1 no. recreational route (walking trail),
- 2 no. recreational destinations (nature reserve and bog walk),
- 3 no. national/regional transport routes,
- All local roads within 3km of the proposed turbines.

Figure 13-14 below maps the visual receptors and ZTV showing the distribution of theoretical visibility in the LVIA Study Area, along with the selected viewpoint locations (VP01-VP15). The following sections present the scoping tables for all visual receptors identified in the baseline exercise and identifies and describes the selected viewpoints. Table 13-4 through Table 13-8 below provide rationale for scoping visual receptors in or out.



Map Legend

- LVIA Study Area
- EIAR Site Boundary
- County Borders
- Proposed Turbines
- Photomontage Viewpoints
- GCDP Protected Views
- GCDP Protected Views Direction
- Settlements
- National Roads
- Regional Roads
- Irish Rail Network
- Suck Valley Way
- Recreational Destinations

Zone of Theoretical Visibility

- 1-3 Turbines Theoretically Visible
- 4-6 Turbines Theoretically Visible
- 7-9 Turbines Theoretically Visible

Drawing No.

Figure 13-14

Drawing Title

Visual Baseline Map with ZTV

Project Title

Cooloo Wind Farm, Co. Galway

Scale	Project No.	Date	Drawn By	Checked By
1:151,000	190723	03.09.2025	JC	RS

13.5.1 Visual Receptors

13.5.1.1 Designated Protected Views and Scenic Routes

There are no designated scenic routes as set out in the GCDP 2022-2028 within in LVIA Study Area. 1 no. protected view as set out in the GCDP 2022-2028 was identified to have potential visibility of the proposed turbines and was scoped in for assessment: G-V42 Glenamaddy Turlough. No other protected views within the LVIA Study Area have potential visibility.

Table 13-4 Designated Protected Views

Map Ref.	Protected View	Direction of View	Directed to Proposed Turbines	Theoretical Visibility	Scoped In
G-V39	This view is from the Summerville Lough picnic area. The focus of this view is Summerville Lough. The wooded shores that form the background are an important feature of the view.	NE to SE.	No.	Yes.	No.
G-V42	This view is from the Glenamaddy Turlough carpark and viewing area. The focus of this view is Glenamaddy Turlough. The wooded shores that form the background are an important feature of the view.	E to W.	Partially.	Yes.	Yes.

13.5.1.2 Settlements

There are no Metropolitan Areas, Self Sustaining Towns or Small Growth Towns as defined in the GCDP 2022-2028 within 20km of the proposed turbines.

A total of 9 no. settlements were identified within the LVIA Study Area. 7 no. are scoped in for assessment; three of these are Rural Nodes: Barnaderg and Lavally are Rural Nodes within 5km of the proposed turbines and were found to have potential visibility, while Kilkerrin/Clonberne is a Rural Node within 10km which was scoped in for its potential for cumulative visual effects. 2 no. settlements were scoped out owing to the visibility appraisal showing no potential visibility at these locations.

Two rural areas at elevated vantage points were scoped in to represent receptors at medium range: Knockroe Hill (at 5-10km) and Gurteen (at 10-15km). One rural area within 5km to the southwest of the Proposed Wind Farm site was scoped in, located in the townland of Carrowmanagh.

Table 13-5 Settlements

Settlement	Hierarchy	Theoretical Visibility	Scoped In
Up to 5km			
Barnaderg	Rural Node.	Yes.	Yes.
Lavally	Rural Node.	Yes.	Yes.
Up to 10km			
Moylough	Small Growth Village.	Yes.	Yes.
Mountbellew	Small Growth Village.	Yes.	Yes.
Kilkerrin/ Clonberne	Rural Node.	Yes	Yes.
10 to 15km			
Tuam	Key Town.	Partial.	Yes.
Dunmore	Small Growth Village.	Partial.	No. Visibility appraisal determined no actual visibility on-site.
Glenamaddy	Small Growth Village.	Partial.	Yes.
15 to 20km			
Athenry	Strategic Potential.	Partial.	No. Visibility appraisal determined no actual visibility on-site.

13.5.1.3 Recreational Routes

Following best-practice LVIA guidance (GLVIA3, LI & IEMA 2013), only recreational routes of county-level or national-level importance or those specifically designated in county-level policies were searched within the LVIA Study Area. 1 no. trail system (>15km from the proposed turbines) was found to have potential for visibility on one small part of the trail. No other trails had potential visibility.

Table 13-6 Recreational Routes

Route Name	Description	Theoretical Visibility	Actual Visibility	Scoped In
Up to 10km				
Mountbellew Demesne Walking Path	Trail walk primarily through a wooded area.	Full to Partial.	None, due to screening by trees.	No.

Route Name	Description	Theoretical Visibility	Actual Visibility	Scoped In
10 to 15km				
Monivea Historic Trail	Trail on tarred road, forest road and paths in a loop through coniferous trees interspersed with shady broadleaf trees.	Primarily full theoretical visibility.	None, due to screening by trees.	No.
15 to 20km				
Cloonfad Walking Loops	Seven adjoining walking loops on roads through woodland and through an open cut-away bog with panoramic views of the surrounding countryside.	Primarily none, some small stretches of roads with theoretical visibility.	The majority of the routes are on the north side of a hill, with views directed away from the proposed turbines.	No.
Suck Valley Way	Circular route that runs up the west side of the Suck from Mount Talbot to the outskirts of the town of Castlerea and returns down the east side.	Full theoretical visibility from one small section within the LVIA Study Area.	There is potential for very limited visibility of the proposed turbines.	Yes.
The Hymany Way	Route following the western side of the Shannon, traversing along the banks of the Shannon River, through cutover and drained and raised bog, forest paths and country roads.	Full theoretical visibility from one small section within the LVIA Study Area	None from the majority of the route, due to screening by trees. One small portion may have potential visibility from a great distance.	No.

13.5.1.4 Recreational, Popular Cultural Heritage and Tourist Destinations

2 no. recreational destinations were scoped in for assessment: Richmond Esker Nature reserve and Carrownagappul Walk – The Living Bog. A detailed assessment of impact on archaeological cultural heritage sites is provided in EIAR Chapter 14 Cultural Heritage.

Table 13-7 Recreational, Popular Cultural Heritage and Tourist Destinations

Route Name	Description	Theoretical Visibility	Actual Visibility	Scoped In
Up to 5km				
Richmond Esker Nature Reserve	State-owned nature reserve run by the National Parks and Wildlife Service, with esker ridges and native woodland.	Full theoretical visibility.	There will be open views in the direction of the proposed turbines from the southern entrance of this nature reserve. Though this is a wooded area, during the winter season less vegetation on the trees might offer easier visibility of the proposed turbines from some locations within this nature reserve.	Yes.
5 to 10km				
Ballyglunin Station	A heritage railway station, now a biodiversity park used as a community resource centre and events venue supporting the arts and creative communities.	Full theoretical visibility.	The primary use facilities have views focused the opposite direction of the proposed turbines. Vegetation and built structures partially screen the view towards the proposed turbines.	No.
Knockmoy Cistercian Abbey	A ruined Cistercian ecclesiastical complex from 1198 located on the northern bank of the Abbert River.	Partial theoretical visibility.	The flat open landscape permits long-ranging views in the direction of the proposed turbines.	Yes.
10 to 15km				
Carrownagappul Walk – The Living Bog	A large, accessible raised bog outside Mountbellew with boardwalk trail system.	Primarily full theoretical visibility.	The flat open landscape permits long-ranging views in the direction of the proposed turbines.	Yes.
15 to 20km				
Knockma Wood	Several looped forest trails crossing the crest of Knockma Hill.	Full theoretical visibility on the northern and eastern sides of	Views in the direction of the proposed turbines are predominantly screened from the summit and the sections of	No.

Route Name	Description	Theoretical Visibility	Actual Visibility	Scoped In
		the hill, with no theoretical visibility on the southern side.	the path with long-rang visibility. The majority of the forest trails are within a heavily wooded area with limited external visibility.	
Kilbannon Church Ruins	Medieval ecclesiastical site and National Monument northwest of Tuam.	No theoretical visibility.	None.	No.

13.5.1.5 Transport Routes

5 no. prominent transport routes within 10km of the proposed turbines were scoped in for assessment and are assessed in conjunction with the relevant visual receptors and residential receptors in later sections; the roads are: the R328 and R332 regional roads and the N63 national road. The visual baseline exercise determined that because of the primarily flat nature of the immediate and wider landscape, most visibility of the proposed turbines from transport routes will only occur within 1-3km of the proposed turbines, thus all local roads within 3km are considered in the assessment.

Table 13-8 Transport Routes

Transport Route	Description	Theoretical Visibility	Scoped In
Up to 5km			
N63	A national secondary road linking the M17 with Moylough and County Roscommon further to the east, passing within 1.3km of the nearest proposed turbine.	Primarily full.	Yes.
R328	A road connecting Ballindine on the N17 to Moylough on the N63, passing within 2.85km of the nearest proposed turbine.	Primarily full.	Yes.
R332	A road linking the N63 with Tuam and County Mayo further northwest, passing within 1.1km of the nearest proposed turbine.	Primarily full.	Yes.
5 to 10km			
R364	A regional road the extends north of Moylough, connecting it to	Primarily full.	No.

	Glennamaddy and further north. It passes within 5.1km of the nearest proposed turbine.		Visibility appraisals show little potential visibility from the majority of the route.
R365	A short regional road connecting two parts of the N63 to by-pass the settlement of Mountbellew. It is 16.9km from the nearest proposed turbine.	Full.	No. This very short stretch of regional road will have limited visibility of the proposed turbines due to roadside screening.
R339	A regional road traversing in a southwest to northeast direction, passing through the settlements of Monivea, Menlough, Castleblakeney and Caltra. It is located 7.8km from the nearest proposed turbine.	Primarily full.	No. Visibility appraisals show little potential visibility from the majority of the route.
Up to 15km			
M17	The M17 motorway crosses the south-western border of LVIA Study Area near Annagh Cross and travels northward to Tuam, passing within 11.8km from the nearest proposed turbine	Primarily full along the northern section of this route, and none along the southern half of this route.	No. Potential views of the proposed turbines will be peripheral and at great distance amongst intermittent roadside screening.
N17	A national primary road running through Ballindine just outside the north-west of the LVIA Study Area to Tuam, passing within 12.2km of the nearest proposed turbine.	Partial to the north of Tuam, and primarily full to the south of Tuam.	No. Potential views of the proposed turbines will be peripheral and at great distance amongst intermittent roadside screening.
N83	A national secondary road that runs (north to south) through Cloonfad, Dunmore, Tuam and then on south to Galway City, passing within 10.2km of the nearest proposed turbine.	Primarily full to the north of Tuam and Dunmore, and partial between Tuam and Dunmore.	No. Potential views of the proposed turbines will be peripheral and at great distance amongst intermittent roadside screening.

13.5.2 Visual Receptors Scoped In

Table 13-9 below lists all visual receptors selected for assessment in this LVIA and indicates the photomontage viewpoint (VP) images representing views for those receptors, identified and described below in Section 13.5.4 Viewpoint Selection: Photomontage VPs.

Table 13-9 Visual Receptors Scoped In for Assessment

Visual Receptor Category	Description	Viewpoint No.
Designated Protected View	G-V42	VP08
Settlements	Barnderg	VP02
	Lavally	VP01
	Kilkerrin/Clonberne	VP09
	Moylough	VP04
	Mountbellew	Photowire*
	Glenamaddy	VP08
	Tuam	VP06
Recreational Routes	Suck Valley Way	Photowire*
Recreational Destinations	Carrownagappul Walk – The Living Bog	VP13
	Richmond Esker Nature Reserve	Photowire*
	Knockmoy Cistercian Abbey	Photowire*
Transport Routes	N63 National Road	VP3, VP4
	R328 Regional Road	VP4
	R332 Regional Road	VP3, VP2, VP6

**Photowires are alternative viewpoint locations for which early-stage draft imagery was produced to aid the discussions of visual assessment; please refer to Section 13.7.3.2.1 for details and photopoint locations.*

13.5.3 Visual Receptors Scoped Out

The receptors listed below in Table 13-10 are excluded owing to factors including the very limited visibility of the proposed turbines, great distance to the proposed turbines, and directional focus of views looking away from the direction of the proposed turbines.

Table 13-10 Visual Receptors Scoped Out

Category	Receptor Scoped Out
Settlements	› Dunmore,

Category	Receptor Scoped Out
	› Athenry.
Recreational Routes	› Mountbellew Demesne Walking Path, › Monivea Historic Trail, › Cloonfad Walking Loops, › The Hymany Way.
Recreational, Popular Cultural Heritage, and Tourist Destinations	› Ballyglunin Station, › Knockma Wood, › Knockmoy Cistercian Abbey, › Kilbannon Church Ruins.
Transport Routes	› M17 Motorway, › N17 and N83 National Roads, › R339, R64 and R365 Regional Roads.

13.5.4 Viewpoint Selection: Photomontage Viewpoints (VPs)

Photomontage imagery was captured at 15 no. viewpoints for full assessment in this LVIA including the assessment of cumulative effects. Photomontages VP01-VP15 represent the most sensitive receptors where open visibility of the proposed turbines occurs and provide a good geographical spread of views surrounding the proposed turbines. All VPs are mapped above in the visual baseline map, Figure 13-14.

Table 13-11 Photomontage Viewpoint Locations (VP01-VP15)

VP No.	Description	Grid Ref. (ITM)
VP01	**Lavally Church**. View from Lavally Church in the townland of Cappadavock, near Lavally National School. Located approximately 4.3km northwest from the nearest proposed turbine (T7).	E: 552853 N: 753839
VP02	**Barnaderg South**. View from the R332 Regional Road in the townland of Barnaderg South passing through rural node of Barnaderg. Located approximately 3.3km west from the nearest proposed turbine (T1).	E: 552002 N: 748145
VP03	**Horseleap Cross Roads**. View from the Horseleap Cross Roads, intersection of the N63 National Road and R332 Regional Road, in the townland of Slievegorm near Brierfield National School. Located approximately 1.3km south from the nearest proposed turbine (T1).	E: 555717 N: 746398
VP04	**Moylough**. View from the N63 National Road heading west out of the town of Moylough, at the junction with the R328 Regional Road in front of the statue of St. Mary. Located approximately 4.5km east from the nearest proposed turbine (T8).	E: 561426 N: 748845
VP05	**Cloonboo Beg**. View from the local road in the townland of Cloonboo Beg. Located approximately 1km northeast from the nearest proposed turbine (T7).	E: 556270 N: 751286

VP No.	Description	Grid Ref. (ITM)
VP06	**Tuam**. View from the R332 Regional Road on the eastern outskirts of Tuam. Located approximately 10.7km west from the nearest proposed turbine (T6).	E: 544932 N: 751026
VP07	**Carrowmanagh**. View from a local road in the townland of Carrowmanagh, near St. Mary's Church of Killerein. Located approximately 3.9km west from the nearest proposed turbine (T1).	E: 551414 N: 747062
VP08	**Glenmaddy Turlough**. View from the north banks of Glenamaddy Turlough, GCDP Protected View 42, in the townland of Mountkelly. Located approximately 13.8km from the nearest proposed turbine (T6).	E: 563885 N: 761506
VP09	**Killavoher**. View from a local road immediately south of the R328 Regional Road in the townland of Killavoher. Located approximately 7.6km north from the nearest proposed turbine (T6).	E: 555625 N: 758089
VP10	**Cooloo Mountain**. View from the L-2302 Local Road in the townland of Cooloo Mountain. Located approximately 1.5km southeast from the nearest proposed turbine (T8).	E: 557692 N: 748028
VP11	**Oakwood South**. View from the L-7138 Local Road in the townland of Oakwood South. Located approximately 7.3km southwest from the nearest proposed turbine (T1).	E: 551682 N: 741217
VP12	**Gurteen**. View from the L-3136 Local Road in the in the rural node of Gurteen, passing through the townland of Glennamucka. Located approximately 13.3km southeast from the nearest proposed turbine (T1).	E: 562070 N: 736138
VP13	**Carrownagappul**. View from the Carrownagappul Walk - The Living Bog, in the townland of Carrownagappul. Located approximately 10.7km east from the nearest proposed turbine (T8).	E: 567657 N: 750411
VP14	**Tigreenaun**. View from a local road in the townland of Tigreenaun. Located approximately 1.3km west from the nearest proposed turbine (T6).	E: 554371 N: 749541
VP15	**Cloondahamper (Brown)**. View from a local road in the townland of Cloondahamper (Brown). Located approximately 1km northwest from the nearest proposed turbine (T6).	E: 555150 N: 751420

13.6 Cumulative Context

Table 13-12 below lists 6 no. wind farm developments identified within the LVIA Study Area which are included in the cumulative assessment for this LVIA; these are mapped below in Figure 13-15. The definitions of Existing, Permitted and Proposed wind farms are given as follows:

- **Existing:** Existing wind energy developments currently operational in the baseline landscape at the time of conducting this LVIA.
- **Permitted:** Wind energy developments either under construction or permitted (consented) at the time of conducting this LVIA; these developments have a high probability of being operational in a future receiving landscape.
- **Proposed:** All well-developed wind farm proposals with project specifications in the public domain at the time of conducting this LVIA. Cumulative effects between the Proposed Project and the development within this category are more uncertain and are reliant on an outcome of the planning and consenting system.

All cumulative turbines are included within the relevant photomontage imagery presented in the *EIAR Volume 2: Photomontage Booklet* and assessed in *Appendix 13-3: Photomontage Visual Impact Assessment Tables*. The methodology and rationale for the search process of identifying cumulative wind farms for this LVIA are reported in *Appendix 13-1: LVIA Methodology* (Section 1.10 Assessing Cumulative Effects). The appendix includes the process for assessment of cumulative landscape and visual effects including how cumulative wind farms are visually presented within the *Photomontage Booklet*.

Table 13-12 Cumulative Wind Farms identified in the LVIA Study Area

Other Wind Farms	Status	No. of Turbines	Distance from the nearest turbine of the Proposed Project	Tip Height and Blade Dimensions
Clonberne Wind Farm	Proposed	11	5.3km	Tip Height 180m; Rotor Diameter 162m
Cloonlusk Wind Farm	Existing	2	7.83km	Tip Height 119m; Rotor Diameter 82m
Cloonascragh Single Turbine	Permitted	1	10.5km	Tip Height 168m; Rotor Diameter 136m
Clooncon East Single Turbine	Existing	1	16.3km	Tip Height 89.5m; Rotor Diameter 59m
Laurclavagh Wind Farm	Proposed	8	17.4km	Tip Height 185m; Rotor Diameter 163m
Gannow Wind Farm	Proposed	8	18.4km	Tip Height 185m; Rotor Diameter 162m

Cumulative effects in combination with single turbines with a tip height less than 50 metres which are located at distances greater than 5km from the Proposed Wind Farm, where it is deemed no significant cumulative effects are likely to occur in combination with the Proposed Wind Farm have been scoped out from assessment in this LVIA.

N

5 km

10 km

15 km

20 km

0 2.5 5 km

Map Legend

- LVIA Study Area
- Proposed Turbines

Other Wind Farm Developments within the LVIA Study Area

- Proposed Clonberne Wind Farm
- Proposed Laurclavagh Wind Farm
- Proposed Gannow Wind Farm
- Permitted Cloonascragh Single Turbine
- Existing Clooncon East Single Turbine
- Existing Cloonlusk Wind Farm

Drawing No.

Figure 13-15

Drawing Title

Cumulative Context Map

Project Title

Cooloo Wind Farm, Co. Galway

Scale	Project No.	Date	Drawn By	Checked By
1:151,000	190723	03.09.2025	JC	RS

13.7 Likely "Significant" Landscape and Visual Effects

This section reports the likely significant landscape and visual effects of the Proposed Project during all three phases: Construction Phase, Operational Phase and Decommissioning Phase.

In addition, this section summarises the outcomes of LCA assessments (refer to *Appendix 13-2: LCA Assessment Tables*) and photomontage visual impact assessments (refer to *Appendix 13-3: Photomontage Visual Impact Assessment Tables*). A comprehensive description of the guidance and methodology used for the assessment of landscape and visual effects are included in *Appendix 13-1: LVIA Methodology*, along with information about the photomontages as a tool used to inform the impact assessment, including the limitations of this approach (*Appendix 13-1*, Section 1.6.6 Limitations of Photomontage Visualisation).

13.7.1 "Do-Nothing" Scenario

As reported in Chapter 3 Reasonable Alternatives of this EIAR, the "Do-Nothing" scenario land-use option to developing a renewable energy project at the Site would be to leave the Site as it is, with no changes made to the current land-use practices. Predominantly agricultural fields with areas in the north occupied by active raised blanket bog would continue at the Proposed Wind Farm site. There would be no changes to the public road corridors, private tracks, and private land principally used by agriculture along the Proposed Grid Connection route. The established trends in respect of land use/landcover and the baseline landscape and visual context are likely to remain largely consistent with the scenario described in the preceding baseline sections of this chapter.

In terms of landscape and visual effects, in this alternative scenario the principal visual components, i.e. the proposed turbines, would not be materially introduced into the landscape, nor would their associated infrastructure or ancillary components be introduced, and the temporary effects of the underground Proposed Grid Connection would not occur.

It is considered that there would likely be future interest in developing this landscape for wind energy production, which is demonstrated given the level of existing, permitted and proposed wind farms outlined in the previous Section 0 Cumulative Context (these wind farms are considered to form part of the "Do-Nothing" scenario). Characteristic commercial forestry operations across the Proposed Wind Farm site and adjoining areas are expected to continue, along with the current land uses. Should the 'Do-Nothing' scenario occur, the residual landscape and visual effects would be None and the impact would be Neutral in the context of this EIAR.

13.7.2 Construction Phase Effects

It is estimated that the construction phase of the Proposed Project will last between 18 and 24 months, therefore effects are "Short-term". Construction of the Proposed Project will involve the installation of the 9 no. turbines with a maximum blade-tip height of 180m and all associated works, as well as the construction of the onsite 110kV substation and associated works including underground cabling.

Construction phase effects will also include the associated effects resulting from the movement of construction and turbine transport vehicles into and out of the Proposed Wind Farm site, to allow for construction of all Proposed Wind Farm elements.

13.7.2.1 Landscape Effects during Construction Phase

Proposed Wind Farm

Associated earthworks, such as the cut and fill required to facilitate construction of the Proposed Wind Farm, have the greatest potential for landscape effects. Where excavation is required, the existing landcover, vegetation and spoil will be removed during the construction phase. In most instances, groundworks and excavation trenches will be re-instated upon completion of the construction. Where spoil arising from construction activities is managed within the Proposed Wind Farm site, the vegetative top-soil layer will be removed and re-instated following spoil management. The construction activities may potentially cause temporary impacts on the landscape such as the creation of temporary structures, dust, minor soil erosion and minor alterations to drainage. It is considered that this is a "Moderate", "Short-term", "Negative" effect in terms of landscape effects.

Proposed Grid Connection

The Proposed Grid Connection cabling is to be located underground; therefore, the greatest effects attributed to this element of the Proposed Project will occur during the construction phase of the Proposed Project. The majority of cable route works are to be carried out along existing public road corridors. The construction phase of the proposed underground cabling will be temporary, localised, and transient in nature, as the works move along the cable route. The works will include soil stripping, excavation, and other associated construction activities. These activities will cause temporary change to the physical landscape along the Proposed Grid Connection; however, these changes will be localised to the immediate environment surrounding the route and will not affect the character of the landscape setting or visual amenity of the wider area. The Proposed Grid Connection works are likely to cause "Slight", "Short-term", "Negative" landscape (as well as visual) effects.

Mitigation Measures for Landscape Effects during Construction

The above predicted landscape effects during construction assume the implementation of the following mitigation measures for the Proposed Wind Farm and Proposed Grid Connection. All construction activities will follow best practice methods to reduce impacts upon the environment and landscape of the Site. Further details are presented in the Construction and Environmental Management Plan (CEMP) contained in *Appendix 4-5* of this EIAR. The following measures are to be implemented to mitigate landscape effects during the construction phase of the Proposed Project:

- In all circumstances, excavation depths and volumes will be minimised, and excavated material will be re-used where possible.
- For the Proposed Grid Connection, where the cable trench is to be located in the road verge, subsoil should be piled on site and re-used after cabling works.
- Should any mature vegetation be removed, it should be replaced with the same or similar species whenever it is not possible to salvage and reinstate.
- New topsoil should be provided should the existing topsoil not be of sufficient standard.
- Any areas of bare soil remaining after the landscaping phase will be seeded as soon as possible with a grass-seed mix to minimise sediment run-off.

13.7.2.2 Visual Effects during Construction Phase

Proposed Wind Farm

The most substantial visual effects will arise from requisite construction activities on the Proposed Wind Farm site, such as assembling tower sections and erecting the turbines. There shall be temporary scenarios during the construction phase in which the proposed turbines will be partially constructed and may be seen as either stand-alone tower sections, or incomplete turbines where only one or two

blades are visible. The equipment and vehicles required to transport and erect the wind farm components include large cranes and large haulage vehicles. These construction activities will cause "Slight", "Short-term", "Negative" residual visual effects for nearby receptors.

Proposed Grid Connection

Underground Cable Route. As reported previously, the greatest effects attributed to the underground cable of the Proposed Grid Connection will occur during the construction phase and are largely related to landscape changes. As the cable route shall be located underground, changes of a visual nature will not affect the visual amenity of the wider area. The Proposed Grid Connection underground cabling works are likely to cause highly localised "Negative", "Short-term", "Slight" visual effects.

Onsite 110kV Substation & BESS Compound. During the construction phase, visual effects will occur as the onsite 110kV substation and BESS compound are built due to the earthworks and requisite construction activities. These activities will cause a substantial but localised change to views in the immediate area experienced by local residential receptors in the townland of Hillsbrook Demense. As established in the baseline investigations, the onsite 110kV substation and BESS compound is located adjacent to proposed turbine T1 and the L-6506 local road. During construction works, the onsite substation and BESS compound will be temporarily visible from along the road. With the implementation of mitigation measures listed below, the residual visual effects of the onsite substation and BESS compound on local residential receptors are likely to be highly localised, "Negative", "Short-Term" and "Moderate".

Mitigation Measures for Visual Effects during Construction

Proposed Wind Farm and Proposed Grid Connection. General housekeeping measures, necessary for Health & Safety requirements, will ensure that the active construction areas will be kept tidy, mitigating localised visual impacts during the construction phase.

Onsite Substation and BESS Compound. The following (or similar) measures can potentially be implemented to mitigate effects during and upon completion of the construction phase of the onsite 110kV substation and BESS compound as part of the planning application for the substation and BESS compound:

- Construction of 2m × 8m berms along the northern and western perimeter of the substation at the start of the construction phase.
- Following construction of the berms, planting of semi-mature vegetation is proposed along the northern and western boundary of the substation and BESS compound, both on the berm and adjacent lands to the north and west, this will be for landscape and visual mitigation during the operational phase.
- Planting is proposed to link with existing boundary vegetation and provide ecological connectivity with the surrounding landscape in the operational phase.

13.7.3 Operational Phase Effects

Planning permission is being sought for a thirty-five-year operational life of the Proposed Project from the date of full commissioning of the wind farm and subsequent decommissioning which will involve the removal of the proposed turbines from the Site. Potential impacts of the Proposed Project during the operational phase are defined as "Long-Term" as per the definition for duration in the EPA Guidance (2022). The proposed turbines would be removed from the Proposed Wind Farm site at the end of the operational phase. Therefore, potential landscape and visual impacts effects on receptors caused by the proposed turbines are not permanent and are reversible.

13.7.3.1 Landscape Effects during Operational Phase

13.7.3.1.1 *Landscape of the Proposed Wind Farm site*

The landscape of the Proposed Wind Farm site will undergo substantial changes by the introduction of the turbines as vertical, man-made structures within the material area of the site. As a result, there will be a "Substantial" magnitude of change to the landscape in localised areas within the Site where the landscape is materially altered (infrastructure footprint).

As reported in this chapter, all proposed turbines are sited within landscape designated as Low sensitivity in the GCDP 2022-2028. All proposed turbines are sited within landscape of the same general type and character—that of modified working landscape comprising agricultural fields, commercial forestry and cutover bogs—which are landscape types effectively capable of absorbing wind energy development. 6 of 9 no. proposed turbines are sited within land zoned as *Open to Consideration* for wind energy development in the GCDP 2022-2028. For the remaining proposed turbines which are sited in *Generally to be Discouraged* zones, the LVIA baseline investigations found that the rationale for the wind energy zoning is inconclusive and that landscape sensitivity is not likely to be a factor in the zoning. Therefore, it is relevant that all proposed turbines are sited within similar landscape types which are effectively capable of absorbing the development.

The landscape value and sensitivity of the Proposed Wind Farm site is reported as Low. The "Low" sensitivity balanced with "Substantial" magnitude of change amounts to long-term landscape effects of "Moderate" significance upon the physical fabric of the landscape of the Site (see *Appendix 13-1: LVIA Methodology*, Section 1.7 Assessing Landscape Effects). The landscape effects shall be highly localised to the footprint of the Proposed Project. Landscape effects on the perceptual and aesthetic character of the Site are deemed to be "Long term", "Negative" and of "Moderate" significance.

13.7.3.1.2 *Landscape of the Proposed Grid Connection*

Underground Cable Route. As the Proposed Grid Connection cabling is located underground, landscape and visual effects during the operational phase will be "Imperceptible" once vegetation has re-established along the roadway following earthworks during the construction phase. The landscape and visual effects occurring during the construction phase of the Proposed Grid Connection are reported previously in Section 13.7.2 Construction Phase Effects.

Onsite 110kV Substation and BESS Compound. As reported above in Section 13.7.2.2, during the construction phase, berms will be built around the northern and western perimeter of the onsite 110kV substation and BESS compound which will be retained during the operational phase. Planting is proposed around the northern and western perimeter of the compound also. Effects on landscape character will be mitigated once vegetation has matured during the operational phase, residual landscape effects arising from the substation and BESS will be "Slight".

13.7.3.1.3 *Mitigation Measures for Landscape Effects during Operation*

The Biodiversity Management and Enhancement Plan (BMEP) which has been prepared as part of this EIAR (see *Appendix 6-4*) will have the dual effect of providing ecological enhancement to the landscape area of the Proposed Wind Farm site as well as potential screening of some lower lying infrastructure of the Proposed Wind Farm, thereby ultimately mitigating effects on landscape character during the operational phase.

The following measures from the BMEP which have been included in the Proposed Wind Farm design are deemed to have the effect of avoiding or reducing direct effects on landscape receptors, meaning individual landscape features and the landscape character of the Proposed Wind Farm site as a whole:

- Riparian vegetation planting along rivers and drains, e.g. willow and alder,

- Converting grasslands into long-flowering meadows to allow natural revegetation,
- Creation of peat and spoil repository areas to control run-off and allow natural recolonisation with seed banks and scrub,
- Development of bog woodland habitat on uncut raised bog and cutover bog to allow regeneration of native tree species,
- Hedgerow replanting,
- Removal of conifer plantation and creation of native woodland areas,
- Creation of embankments around Proposed Wind Farm infrastructure to allow recolonisation of vegetation.

13.7.3.1.4 LCA Assessment Outcomes

Table 13-13 below reports the results of the assessment of effects on designated LCAs detailed in *Appendix 13-2: LCA Assessment Tables* for the 4 no. LCUs identified within the (15km) LCA Study Area; the LCUs are mapped above on Figure 13-8 and Figure 13-9. The assessment criteria and grading scales which aided the assessment of landscape effects are detailed in *Appendix 13-1: LVIA Methodology*, Section 1.7 Assessing Landscape Effects.

Table 13-13 Summary of LCA Assessment Outcomes (Appendix 13-2)

LCA	Name	LCA Sensitivity to Wind Farm Development	Magnitude of Change	Residual Significance of Effect
LCU-5e	North River Clare Basin Unit	Low	Moderate	**Slight**
LCU-5b	Castlegar Basin Unit	Low	Moderate	**Slight**
LCU-5c	Springfield Basin Unit	Low	Slight	**Not Significant**
LCU-6b	Southern River Clare Basin Unit	Low	Moderate	**Slight**

All effects of landscape character listed in above in Table 13-13 and discussed below are Long Term and Negative. No "Significant" landscape effects are likely to occur on landscape character in the LVIA Study Area.

All 4 no. LCUs are located within an area designated as "Low" landscape sensitivity in the GCDP 2022-2028, the lowest rating of landscape sensitivity in Co. Galway. These are flat landscapes on a macro-scale with localised undulations. All of the LCUs are characterised as settled, working landscapes comprising agricultural fields, commercial forestry and cutover peatland forming the predominant land use; all are landscape types capable of accommodating wind energy development. All four LCUs were therefore deemed to have a "Low" sensitivity to windfarm development within *Appendix 13-2*.

The greatest magnitude of change that is deemed to occur is Moderate, which has been recorded for 3 of the 4 no. LCUs, this includes LCU-5e North River Clare Basin Unit where the proposed turbines are to be located. LCU-5e is a working and settled landscape with primarily full theoretical visibility of the proposed turbines within 5km and large areas of full theoretical visibility within 10km. In general, there will be very limited views of the proposed turbines from parts of LCU-5e beyond 5km of the proposed turbines, excepting from elevated vantage points. Considering potential cumulative effects in a future receiving environment, the proposed Clonberne Wind Farm (11 no. turbines) would also be sited within LCU-5e, located approximately 5.3km north of the Proposed Wind Farm site, therefore giving rise to potential cumulative effects on the landscape character of LCU-5e. Residual effects on the landscape character of LCU-5e North River Clare Basin Unit are reported as "Slight".

LCU-5b Castlegar Basin Unit and LCU-6b Southern River Clare Basin Unit were also deemed to have a Moderate magnitude of change given their similar landscape characteristics to LCU-5e, and areas of both LCUs come within 5km of the proposed turbines.

LCU-5b is located east of the Proposed Wind Farm site with potential for some cumulative effects with the proposed Clonberne Wind Farm because both Clonberne and the proposed turbines would be visible from some parts of LCU-5b. There are no cumulative turbines sited within LCU-5b, thus where cumulative landscape effects may occur in a future receiving environment, they would be limited to the northwest of LCU-5b where the two developments may be seen in succession. LCU-6b is located southwest of the Proposed Wind Farm site primarily greater than 5km; there is some potential for cumulative effects with the Proposed Project and the existing Cloonlusk Wind Farm (2 no. turbines) which is also located southwest of the proposed turbines. Viewpoint VP04 is located in LCU-5b and viewpoint VP11 is located in LCU-6b; both images demonstrate that residual visual effects are "Not Significant" from these areas. Residual effects on the landscape character of LCU-5b and LCU-6b are reported as "Slight".

13.7.3.2 Visual Effects during Operational Phase

13.7.3.2.1 *Photomontage Viewpoint Impact Assessment Outcomes*

Residual visual effects arising as a result of the Proposed Project during its operational phase are reported and discussed in detail in the sections below, including residual effects on visual receptors and residential receptors, as well as visual effects arising from ancillary elements of the project.

The determination of residual visual effects was informed by the photomontage viewpoint impact assessment of viewpoints VP01-VP15 as reported in *Appendix 13-3: Photomontage Visual Impact Assessment Tables*, which includes cumulative assessment. Figure 13-16 below maps all visual receptors and viewpoints with the ZTV to indicate the areas of theoretical visibility of the proposed turbines, and the impact assessment outcomes are summarised in the Table 13-14 below. This table and *Appendix 13-3* should be read in conjunction with the *EIAR Volume 2: Photomontage Booklet*. The assessment criteria and grading scales which aided the assessment of visual impact are detailed in *Appendix 13-1: LVIA Methodology*.

It is to be anticipated that wind farms inevitably cause "Significant" visual effects on proximate sensitive visual receptors due to the prominence of turbines within landscape views and the "Substantial" magnitude of change which will arise in close proximity to a wind farm development. A key focus in this LVIA is identifying the scenarios where the greatest likelihood of significant effects occurs. It is key to note that the residual significant impacts only occur for a low number of receptors and is not representative of effects on receptors in a vast proportion of the LVIA Study Area.

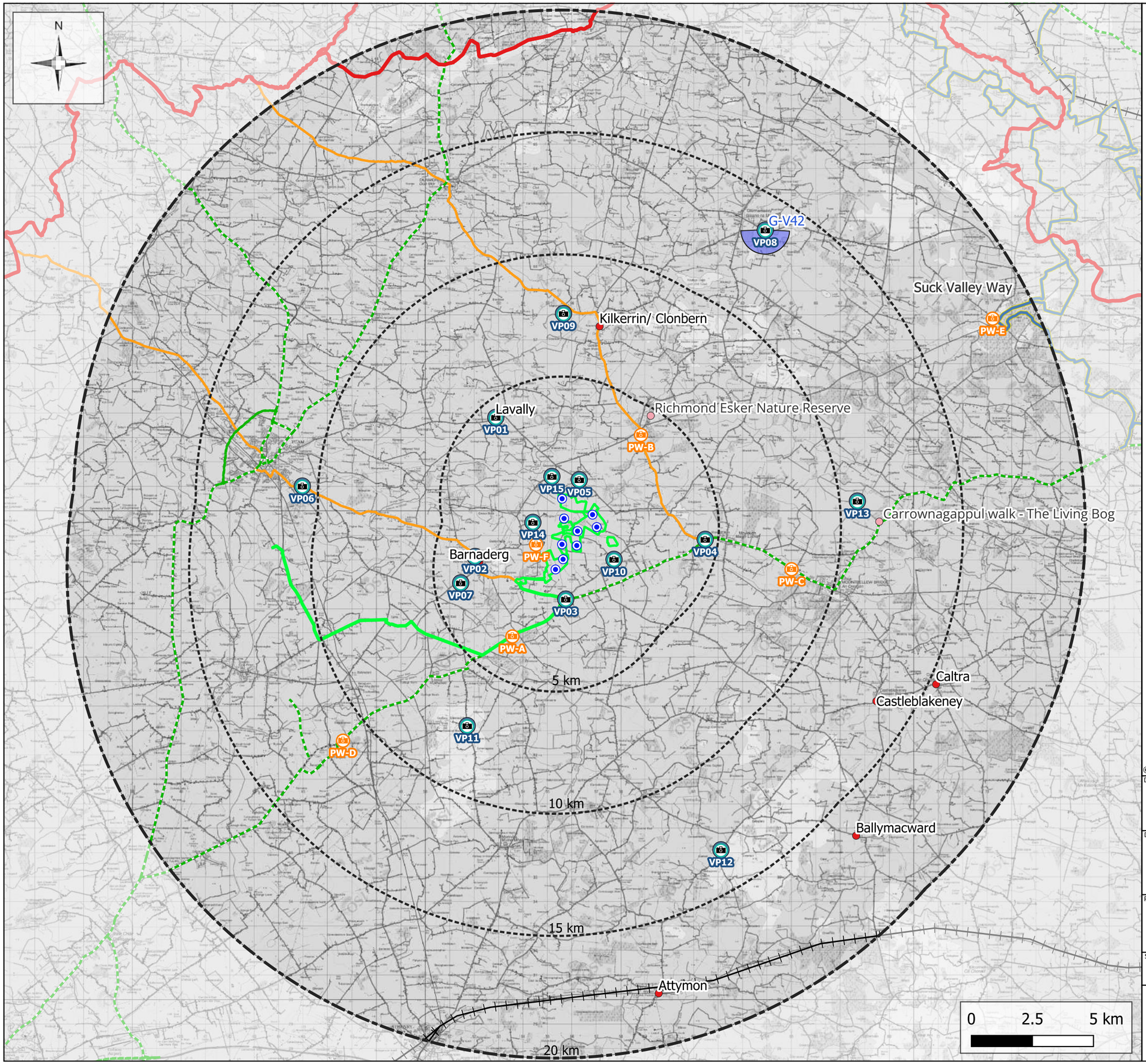
1 no. viewpoint, VP14 Tigreenaun was found to have "Significant" residual visual effects; a comprehensive discussion of these effects is incorporated into the following subsections, including the mitigation factors considered in determining this residual effect rating.

Importantly, this report notes that, regarding the proposed turbines, whether a visual effect is deemed to be positive, negative or neutral, involves a degree of subjectivity; this approach is based on discussion set out in the GLVIA3 (p.113, para.6.29) which outlines the general subjectivity of describing visual effects in an LVIA context. The approach can be explained in that what appears to be a positive effect to one viewer could be deemed to be a negative effect by another viewer. All predicted visual effects of the viewpoints below are "Long-Term" and "Direct" effects.

Alternative Photowire Viewpoints

Imagery from 5 no. alternative viewpoint locations were produced for this LVIA, classified as Type 3 Visualisations in the LI TGN 06/18, to aid discussions of visual effects in the subsequent sections; these images constitute early-stage draft photomontage imagery which were not assessed in the LVIA. The images are draft and do not include modelling of cumulative permitted or proposed developments in the LVIA Study Area. The photowires locations are mapped on Figure 13-16 below as orange icons and represent the following locations where visibility of the proposed turbines is very limited to none:

- PW-A: Dereen. Shows very limited visibility from the southwest at 3.2km.
  Grid Reference: E 553533, N 744897.
- PW-B: Ballinphuill. Represents Richmond Esker Nature Reserve at 3.8km.
  Grid Reference: E 558797, N 753141.
- PW-C: Cloonreleagh. Represents Mountbellew at 8.2km.
  Grid Reference: E 564961, N 747647.
- PW-D: Pollisillagh. Shows very limited visibility from the southwest at 11.1km.
  Grid Reference: E 546597, N 740629.
- PW-E: Tallavnamraher. Represents Suck Valley Way at 18.3km.
  Grid Reference: E 573196, N 757904.
- PW-F: Hillsbrook Demesne. Shows mixed visibility from the west at 1km.
  Grid Reference: E 573196, N 757904.



Map Legend

- LVIA Study Area
- EIAR Site Boundary
- County Borders
- Proposed Turbines
- Photomontage Viewpoints
- Photowire Viewpoints
- GCDP Protected Views
- GCDP Protected Views Direction
- Settlements Scoped in
- National Roads
- Regional Roads
- Irish Rail Network
- Suck Valley Way
- Recreational Destinations

Zone of Theoretical Visibility

- 1-3 Turbines Theoretically Visible
- 4-6 Turbines Theoretically Visible
- 7-9 Turbines Theoretically Visible

Drawing No.

Figure 13-16

Drawing Title

Visual Receptors, Viewpoint Locations and ZTV Map

Project Title

Cooloo Wind Farm, Co. Galway

Scale	Project No.	Date	Drawn By	Checked By
1:151,000	190723	03.09.2025	JC	RS

Table 13-14 Summary of Viewpoint Impact Assessment Outcomes (Appendix 13-3)

VP No.	Description	Grid Ref.	Visual Sensitivity of Receptors	Magnitude of Visual Change	Significance of Residual Visual Effect
VP01	**Lavally Church**. View from Lavally Church in the townland of Cappadavock, near Lavally National School. Located approximately 4.3km northwest from the nearest proposed turbine (T7).	E: 552853 N: 753839	Medium.	Slight.	**Slight.**
VP02	**Barnaderg South**. View from the R332 Regional Road in the townland of Barnaderg South passing through rural node of Barnaderg. Located approximately 3.3km west from the nearest proposed turbine (T1).	E: 552002 N: 748145	Medium.	Slight.	**Slight.**
VP03	**Horseleap Cross Roads**. View from the Horseleap Cross Roads, intersection of the N63 National Road and R332 Regional Road, in the townland of Slievegorm near Brierfield National School. Located approximately 1.3km south from the nearest proposed turbine (T1).	E: 555717 N: 746398	High.	Moderate.	**Moderate.**
VP04	**Moylough**. View from the N63 National Road heading west out of the town of Moylough, at the junction with the R328 Regional Road in front of the statue of St. Mary. Located approximately 4.5km east from the nearest proposed turbine (T8).	E: 561426 N: 748845	Medium.	Slight.	**Not Significant.**
VP05	**Cloonboo Beg**. View from the local road in the townland of Cloonboo Beg. Located approximately 1km northeast from the nearest proposed turbine (T7).	E: 556270 N: 751286	High.	Moderate.	**Moderate**.
VP06	**Tuam**. View from the R332 Regional Road on the eastern outskirts of Tuam. Located approximately 10.7km west from the nearest proposed turbine (T6).	E: 544932 N: 751026	Medium.	Negligible.	**Not Significant**.

VP07	**Carrowmanagh**. View from a local road in the townland of Carrowmanagh, near St. Mary's Church of Killerein. Located approximately 3.9km west from the nearest proposed turbine (T1).	E: 551414 N: 747062	Medium.	Slight.	**Slight**.
VP08	**Glenmaddy Turlough**. View from the north banks of Glenamaddy Turlough, GCDP Protected View 42, in the townland of Mountkelly. Located approximately 13.8km from the nearest proposed turbine (T6).	E: 563885 N: 761506	High.	Negligible.	**Imperceptible**.
VP09	**Killavoher**. View from a local road immediately south of the R328 Regional Road in the townland of Killavoher. Located approximately 7.6km north from the nearest proposed turbine (T6).	E: 555625 N: 758089	Medium.	Slight.	**Slight.**
VP10	**Cooloo Mountain**. View from the L-2302 Local Road in the townland of Cooloo Mountain. Located approximately 1.5km southeast from the nearest proposed turbine (T8).	E: 557692 N: 748028	High.	Moderate.	**Moderate.**
VP11	**Oakwood South**. View from the L-7138 Local Road in the townland of Oakwood South. Located approximately 7.3km southwest from the nearest proposed turbine (T1).	E: 551682 N: 741217	Medium.	Slight.	**Not Significant.**
VP12	**Gurteen**. View from the L-3136 Local Road in the in the rural node of Gurteen, passing through the townland of Glennamucka. Located approximately 13.3km southeast from the nearest proposed turbine (T1).	E: 562070 N: 736138	Low.	Negligible.	**Imperceptible.**
VP13	**Carrownagappul**. View from the Carrownagappul Walk - The Living Bog, in the townland of Carrownagappul. Located approximately 10.7km east from the nearest proposed turbine (T8).	E: 567657 N: 750411	High.	Negligible.	**Not Significant**.

VP14	**Tigreenaun**. View from a local road in the townland of Tigreenaun. Located approximately 1.3km west from the nearest proposed turbine (T6).	E: 554,371 N: 749541	High.	Substantial.	**Significant**.
VP15	**Cloondahamper (Brown)**. View from a local road in the townland of Cloondahamper (Brown). Located approximately 1km northwest from the nearest proposed turbine (T6).	E: 555150 N: 751420	High.	Moderate.	**Moderate**.

13.7.3.2.2 Visual Effects on Protected View G-V42

The Protected View G-V42 Glenmaddy Turlough is located approximately 13.6km north from the Proposed Wind Farm and has theoretical visibility in the direction of the proposed turbines. The protected view as defined in the GCDP 2022-2028 is mainly focused to the west overlooking the turlough and its wooded shores, while the proposed turbines are located to the north of G-V42, situated well beyond the forested area and with a high degree of visual screening. VP08 was captured from the G-V42 overlook and was deemed to have a "High" sensitivity. In the *Photomontage Booklet*, it can be seen that the proposed turbines are perceived as very modest features (blade-tips only) occupying a narrow horizontal extent in the background of the view, hence it the magnitude of change was deemed to be "Negligible". The proposed turbines do not interfere with the main sensitivities of the protected view. The residual visual effects on Protected View G-V42 were deemed to be "Not Significant". Potential cumulative effects with the proposed Clonberne Wind Farm are discussed below in Section 13.7.3.5.

13.7.3.2.3 Visual Effects on Recreational Amenities

Carrownagappul Bog - "The Living Bog"

The Carrownagappul Bog board walk is located approximately 10.7km east of the Proposed Wind Farm where the flat terrain allows for open and long-ranging views across the intact bog landscape and is represented by VP13 with "High" sensitivity. The *Photomontage Booklet* shows that the proposed turbines are barely visible along the background of the view amidst the treeline and the magnitude of change is deemed "Negligible". Overall, the sensitivities of this amenity have not been affected, resulting in Carrownagappul Bog to have "Not Significant" residual visual effects. Potential cumulative effects with the proposed Clonberne Wind Farm are discussed below in Section 13.7.3.5.

Richmond Esker Nature Reserve

The Richmond Esker Nature Reserve is located approximately 4.35km northeast of the Proposed Wind Farm. Photowire image PW-B (see Plate 13-9 below) was captured approximately 300m south of the nature reserve and shows that the proposed turbines are predominantly screened by the intervening topography and tall, mature vegetation from this location where they are visually imperceptible. In the photowire shown below, the locations of proposed turbines T6 and T7 in the distance are indicated with blue lines; no other proposed turbines are perceptible from this vantage point. Within the nature reserve itself, the southern perimeters are comprised of tall, mature trees which will predominantly screen any other potential views, if available, towards the proposed turbines. The residual visual effects on Richmond Esker Nature Reserve are deemed to be "Not Significant".

Plate 13-9 Photowire image PW-B showing no potential visibility of the proposed turbines from the Richmond Esker Nature Reserve

Knockmoy Cistercian Abbey

Limited visibility of the proposed turbines will occur from the abbey ruins themselves, as shown by partial theoretical visibility in the ZTV indicated for the localised area surrounding the village of Abbyknockmoy, approximately 6.2km southwest of the proposed turbines. The proposed turbines are likely to be visible in combination with abbey ruins from elevated vantage points set-back to the south of the abbey. There will be a large degree of visual separation, as the proposed turbines will be visible set-back beyond the horizon within a different field of view from these vantage points and no significant impact on the landscape setting of the abbey ruins will occur. From an LVIA perspective, the abbey ruins comprise a heritage site of local sensitivity only, and it is not necessarily a location that attracts large number of visitors or tourists. Visual receptors are unlikely to come to this location to explicitly experience landscape views associated with the wider landscape from the abbey ruins; therefore, the sensitivity is considered Medium. Two photowires (PW-A and PW-D) are presented below showing views of the proposed turbines as viewed from the south-west of the site at distances of approximately 3.2km and 11.1km. These viewpoints are representative of the visual impact of the proposed turbines in a similar geographical area as the N63 National Road where it passes Knockmoy Cistercian Abbey. The magnitude of change is deemed to be “Slight” and the overall visual effects are predicted to be “Slight”.

Plate 13-10 Photowire image PW-A showing limited visibility of the proposed turbines from the N63 at 3.2km southwest of the proposed turbines

Plate 13-11 Photowire image PW-D showing limited visibility of the proposed turbines from the N63 at 11.1km southwest of the proposed turbines

Suck Valley Way

One very small portion of the Suck Valley Way falls within the LVIA Study Area, located 18.3km from the proposed turbines. This small portion of the waymarked trail offers views of Suck Valley and the

landscape of eastern Co. Galway. Photowire PW-E (see Plate 13-12 below) was captured from this small portion of the trail and shows that the proposed turbines are not visible due to vegetation and localised higher topography relative to the area around the Proposed Wind Farm. In the photowire shown below, the locations of proposed turbines in the distance are indicated with blue lines. The Proposed Wind Farm will not be visible from this small portion of the Suck Valley Way. The residual visual effects on Suck Valley Way are deemed to be "Not Significant".

Plate 13-12 Photowire image PW-E showing no potential visibility of the proposed turbines from the Suck Valley Way

13.7.3.2.4 Visual Effects on Settlements

Banaderg

This rural node located 3.1km southwest of the Proposed Wind Farm is represented by VP02, deemed to have "Medium" sensitivity. The magnitude of change was deemed to be "Slight". VP02 was captured at the local GAA Club grounds within the community of Barnaderg. In the *Photomontage Booklet*, it can be seen that buildings, other infrastructure, mature vegetation and the local topography provide visual screening resulting in little to no visibility of the proposed turbines. The RSA results for this road network indicate a mix of Intermittent/Partial visual screening and Dense/Full visual screening within the rural node, with Little/No visual screening on the outskirts.

Views from the outskirts of Barnaderg are also represented by VP07, captured from an elevated vantage point to the southwest near the local St. Mary's Church of Killererin in the townland of Carrowmanagh. VP07 is deemed to have "Medium" sensitivity. Given that majority of the proposed turbines are partially or predominantly visually screened by the intervening topography and vegetation, the magnitude of change was deemed to be "Slight", resulting in "Slight" visual effects. In the *Photomontage Booklet*, it can be seen that all proposed turbines are set-back beyond the ridgeline. From this vantage point, T1 and T2 are situated further east with less visual screening and are perceived as being taller, with even spacing in the landscape. The set-back distance reduces their prominence in the view. On balance, the residual visual effects on Barnaderg are deemed to be "Slight".

Levally

A sparse rural community, Levally is located 4.3km northwest of the proposed turbines and features Lavally Church and Levally National School. VP01 was chosen to represent views from this rural community, captured at the church, looking out over Levally Lough and the landscape beyond. Given the proximity of the viewpoint to the church and school, the viewpoint was deemed to be of "Medium" sensitivity. In the *Photomoontage Booklet*, VP01 shows wide-ranging views across the countryside with the proposed turbines occupying a very narrow extent of the view, set-back from the community, giving a magnitude of change of "Slight." The residual visual effects on Levally are deemed to be "Slight". Potential cumulative effects with the proposed Clonberne Wind Farm are discussed below in Section 13.7.3.5.

Moylough

Classified as a "Small Growth Village" in the GCDP 2022-2028, Moylough is the closest settlement to the Proposed Wind Farm site, located 4.8km from the proposed turbines, and with primarily full theoretical visibility. Moylough is represented by VP04, deemed to have "Medium" sensitivity on account of its proximity to a population centre and location on the N63 National Road. In the *Photomontage Booklet*, it can be seen that the proposed turbines are predominantly screened by the treeline and are set-back behind the local topography viewed from the R328 Regional Road. The magnitude of change was deemed to be "Slight". VP04 is located west of Moylough on the outskirts, where there are fewer visual screening factors in the direction of the proposed turbines. Tall, mature trees around Moylough screen views in the direction of the proposed turbines, reducing actual visual effects. The residual visual effects on Moylough deemed to be "Slight".

Mountbellew

The "Small Growth Village" of Mountbellew is the next closest settlement to the Proposed Wind Farm site, located approximately 8.7km east from the nearest proposed turbine, with primarily full theoretical visibility. Photowire PW-C (see Plate 13-13 below) represents views from this settlement, showing little to no visibility of proposed turbines from the outskirts of the settlement where open views towards the proposed turbines are most likely. At this distance, mature vegetation intermittently screens the proposed turbines entirely from view, and where views are available the proposed turbines are perceived as very modest features in the background of views, occupying a narrow horizontal extent of the views. The residual visual effects on Mountbellew are deemed to be "Not Significant".

Plate 13-13 Photowire image PW-C showing little to no visibility of the proposed turbines from the outskirts of Mountbellew

Tuam

Classified as a "Key Town" in the GCDP 2022-2028, Tuam is located approximately 11.5km west of the Proposed Wind Farm with predominantly full theoretical visibility, and some patches of no theoretical visibility through the town centre. VP06 was captured on the southeastern outskirts of Tuam along the R332 Regional Road, deemed to have "Medium" sensitivity on account of its proximity to the population centre. The view is a working, agricultural setting and the turbines appear set-back from this location, occupying a very narrow horizontal extent of the view. The magnitude of visual change was deemed to be "Negligible". There is no visibility from within Tuam itself due to the built-up environment and tall, mature vegetation that screens views in the direction of the proposed turbines. The residual visual effects on Tuam are deemed to be "Not Significant". Potential cumulative effects with the proposed Clonberne Wind Farm are discussed below in Section 13.7.3.5.

Glenamaddy

Classified as a "Small Growth Village" in the GCDP 2022-2028, Glenamaddy is located approximately 13.6km north of the Proposed Wind Farm, with predominantly full theoretical visibility. Views from Glenamaddy are represented by VP08 captured at Glenamaddy Turlough, located within 1km of the

village. As reported above, VP08 in the *Photomontage Booklet* shows a "Negligible" magnitude of change as the proposed turbines are well set-back beyond the horizon and almost entirely visually screened with only blade-tips visible within a narrow extent of the view. The views from within Glenamaddy village will experience a similar effect, with a further degree of visual screening by buildings and local infrastructure. On balance, the residual visual effects on Glenamaddy village are deemed to be "Not Significant". Potential cumulative effects with the proposed Clonberne Wind Farm are discussed below in Section 13.7.3.5.

13.7.3.2.5 Visual Effects on Transport Routes

This N63 National Road and R328 and R332 Regional Roads all come into close proximity of the Proposed Wind Farm where they will have full visibility of the proposed turbines along some stretches. The R364 and R339 Regional Roads are located beyond 5km from the Proposed Wind Farm, where relatively open landscapes will permit visibility in the direction of the proposed turbines. Where visible, the proposed turbines will be viewed within the modified working landscape of commercial forestry and undulating agricultural fields. Stretches of these routes pass through undulating landscape where treelines and hedgerows obscure views in the direction of the proposed turbines. At further distances from the Proposed Wind Farm, the proposed turbines would be perceived in the background of views, partially visually screened, and would occupy a narrow horizontal extent of the views. Receptors along these routes are predominantly commuters who are not focussed on the views of the surrounding landscape and are considered "Low" sensitivity. Long-ranging views are limited from these routes by roadside vegetation and mature scrub and trees within adjacent fields. On balance, the residual visual effects on transport routes are deemed to be "Slight".

13.7.3.2.6 Visual Effects on Local Residential Receptors

The Proposed Wind Farm site is located in a sparsely settled flat landscape, well set-back from sensitive landscape and visual receptors, large population centres and receptors protected in local planning policy. During the site selection process, early stage LVIA appraisals identified local residential receptors as the most sensitive receptors with the greatest potential to be adversely impacted by the proposed turbines with regard to visual impacts. Consequently, residential visual impact assessment was of key consideration during site selection and throughout the iterative design process for the Proposed Project.

During multiple surveys conducted in 2021, 2022, 2023 and 2024, visibility appraisals determined that most visibility of the proposed turbines will occur within 1-3km of the proposed turbines. This area is a modified working and settled landscape with residential housing organised along the local road network, as well as small settlement clusters around local crossroads and junctions. Some residential receptors located in close proximity to the Proposed Wind Farm site will likely have views of the proposed turbines and are likely to have the greatest visual effects arising as a result of the Proposed Wind Farm. As detailed in Chapter 5 Population and Human Health, the landscape surrounding the Proposed Wind Farm site has a significantly low population density compared to both the national figure and that of Co. Galway (refer to Table 5.2 in Ch.5).

A visual impact assessment of clusters of residences is reported below, these assessments use analysis of aerial maps, photomontages and photowire visualisations with the intention of identifying the theoretical precautionary scenario for potential visual effects on local residential receptors.

The Proposed Project exceeds the recommended 500m set-back distance in the 2006 Guidelines and also the 4-times-tip-height set-back distance (4 × 180m = 720m) explicitly set out for residential amenity prescribed by the draft 2019 Guidelines. No uninvolved landowner dwellings are within 720m of the proposed turbines.

Figure 13-17 below maps all residential dwellings within 3km of the proposed turbines and indicates the minimum setback distances according to wind energy development guidelines, as well as overlays the RSA results previously presented to show the visual screening classes recorded on site. Five verified photomontage viewpoints (VP03, VP05, VP10, VP14 and VP15) are located within 3km of the

proposed turbines along with one alternative photowire viewpoint PW-F. These viewpoints were specifically selected to assess the visual effects on residential amenity and receptors of local community importance in close proximity to the proposed turbines. It is submitted that the number of viewpoints collected for the LVIA is sufficient to represent the residential receptors within the LVIA Study Area, including the *"distribution of population"* (para 6.18, GLVIA3). It would be a disproportionate measure to include an individual photomontage from every residential dwelling and this is not required to conduct a thorough and robust assessment of landscape and visual effects.

As shown by the map, the densest clusters of nearby residential receptors in closest proximity to the proposed turbines are situated to the north near the townland of Cloondahamper (Brown), to the east near the townland of Cooloo Mountain, to the south near the townlands of Slievegorm and Brierfield North, and to the west near the townlands of Hillsbrook Demesne and Tigreenaun.

Referring to the RSA results, it can be seen that most dwellings outside the 740m buffer within 3km are located on roads with primarily Little/No visual screening, interspersed with pockets of Dense/Full or Intermittent/Partial roadside screening. While many receptors may experience open views towards the proposed turbines, other factors will contribute to limiting or reducing visual impact from most vantage points. These factors include the planar nature of the landscape which allows for the perceived scale (height and breadth) of turbines to diminish quickly over short distances, and the nature of a landscape dominantly comprising agricultural fields with mature boundary vegetation and localised undulations that visually screen the views.

The following discussions focus on the above townlands where a small number of dwellings can be expected to experience open views of the proposed turbines in close proximity; the field of view differs for each of these areas in terms of how the proposed turbines will be viewed from that angle and vantage point.

Map Legend

- 720m Buffer (4x Tip Height)
- 500m Buffer
- Proposed Turbine Layout
- Photomontage Viewpoint
- Photowire Viewpoint Locations
- Residential Dwellings

Route Screening Analysis

- "Little/No" Visual Screening
- "Intermittent/Partial" Visual Screening
- "Dense/Full" Screening

Drawing No.

Figure 13-17

Drawing Title

Visibility Appraisal of Local Residential Receptors

Project Title

Cooloo Wind Farm, Co. Galway

Scale	Project No.	Date	Drawn By	Checked By
1:32,000	190723	03.09.2025	JC	JW

Residential Receptors to the North

VP05 and VP15 illustrate the potential visual effects from receptors to the north at 1km from the proposed turbines. Both viewpoints were deemed "High" sensitivity on account of the residential proximity to the proposed turbines. In VP05, the proposed turbines appear in a linear layout and are evenly spaced over a moderate horizontal extent within the view. In VP15, the proposed turbines which are visible appear to be reducing in size proportionally to their set-back distance when panning from left to the right in the view. The two different fields of view are indicated in the aerial image below.

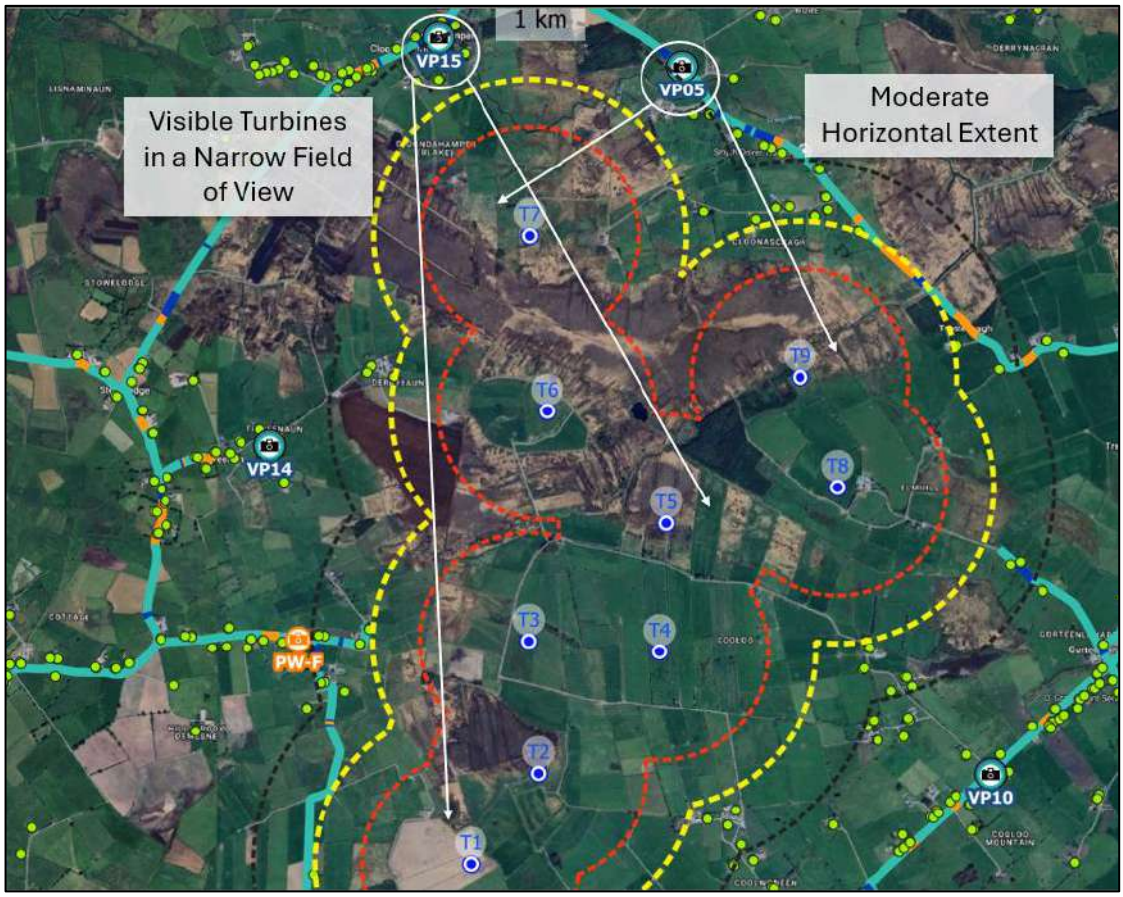


Figure 13-18 Two fields of view for receptors to the north; map uses Figure 13-17 legend

In VP15, proposed turbine T7 is perceived as the most prominent given it is the closest proposed turbine to the viewpoint, while the other visible proposed turbines diminish in scale quickly. While in VP05, proposed turbines T7 and T9 are of equal perceived scale, appearing at both ends of the horizontal extent of the Proposed Wind Farm within the view. Both VP05 and VP15 were deemed to have a "Moderate" magnitude of change. From both of these vantage points, some of the proposed turbines would be either fully or almost entirely visually screened by vegetation, buildings or local topography. This reduces the number of proposed turbines visible within the view, mitigating their prominence in the landscape. Hence, these two viewpoints were deemed to have "Moderate" residual visual effects.

Residential Receptors to the East

VP10 illustrates the potential visual effect from receptors to the east at 1.5km from the proposed turbines. The landscape in this area is slightly more hilly terrain, with larger undulations in the topography that reduce potential visibility of the proposed turbines. The primary landcover is agricultural fields bounded by mature vegetation. VP10 is deemed "High" sensitivity on account of the

residential proximity to the proposed turbines. From this field of view, the proposed turbines are viewed in a linear layout along the horizon of the ridgeline over a moderate horizontal extent, thereby constituting a "Moderate" magnitude of change. The field of view is indicated in the figure below.

Figure 13-19 Moderate horizontal extent field of view from the east in hilly terrain; map uses Figure 13-17 legend

The land around this viewpoint gradually rises towards the location of the turbines where the turbines would be seen as set-back beyond the ridge. In addition, the visibility appraisals determined that to the northeast of this viewpoint, views to the west in the direction of the proposed turbines are commonly visually screened by topography and vegetation. On account of the adherence to the 500m set-back in the 2006 Guidelines and the 4-times-tip-height set-back distance in the draft 2019 Guidelines, and that the proposed turbines would be viewed within modified working landscape, receptors in this area will likely experience "Moderate" residual visual effects.

Residential Receptors to the South

VP03 illustrates the potential visual effect from receptors to the south at 1.3km from the proposed turbines, given a "High" sensitivity on account of residential receptors in close proximity. From this field of view the turbines are seen to diminish in perceived scale over a moderate horizontal extent, set-back beyond the ridgeline of gently undulating terrain. The magnitude of change at this viewpoint was therefore deemed "Moderate". The field of view is indicated in the figure below.

The fields between the proposed turbines and this viewpoint provide the sense of set-back, and the proposed turbines adheres to the 500m set-back in the 2006 Guidelines and 4-times tip-height set out by the draft 2019 Guidelines. The proposed turbines appear to reduce in size proportionally along the perspective plane. Receptors in this area will likely experience "Moderate" residual visual effects.

Figure 13-20 Narrow field of view from the south, causing perceived scale of proposed turbines to diminish with distance; map uses Figure 13-17 legend

The route screening analysis indicated south of the Proposed Wind Farm around these viewpoints indicate little screening along the roads, however this does not account for the treelines within the adjacent fields and the topography which would provide screening of some of the proposed turbines. The visual screening observed on-site during visibility appraisals will reduce the number of proposed turbines visible and hence the potential associated visual effects.

Residential Receptors to the West

VP14 illustrates the potential visual effect from receptors to the west of the study area at 1.3km, given a "High" sensitivity on account of the proximity of residential receptors to the proposed turbines.

Figure 13-21 Wide field of view from the west; map uses Figure 13-17 legend

In the figure above, it can be seen that from the vantage point of VP14, the proposed turbines occupy a wide horizontal extent of the field of view. In the *Photomontage Booklet*, the proposed turbines are seen in a linear layout staggered in front and behind low hilly terrain features, and the large perceived scale (height and breadth) of some of the visible proposed turbines, particularly T6, gives rise to a "Substantial" magnitude of change. The proposed turbines situated farther away appear more modest in scale. Some of the proposed turbines are visually screened from view by dense, mature vegetation and would be so intermittently in a journey scenario from this vantage point along the local road network owing to patches of roadside screening and the undulating topography. Residual visual effects for receptors in this area are likely to be "Significant". The number of receptors to be experiencing this level of visual effects is low.

In contrast to the effects of VP14, photowire PW-F (see Plate 13-14 below) shows imagery captured near VP14 at a similar distance from the proposed turbines and demonstrates the possible variation in visual effects within the same area. PW-F shows an example where the proposed turbines have a greater degree of roadside screening and also shows the variation in perceived scale of the proposed turbines compared to what is shown in VP14. From this vantage point, approx. 1km from proposed turbine T3, the dense mature vegetation intermittently screens views towards the proposed turbines and T1 and T2 are seen to be set-back beyond intervening boundary vegetation on the horizon and appear at a more modest perceived scale. PW-F demonstrates the variation in residual visual effects from the same area to the west, thereby showing that the "Significant" visual effects seen at VP14 represent the worst-case scenario for receptors in this area.

Plate 13-14 Photowire image PW-F from the west at 1km showing partial visual screening and comparatively more modest perceived scale of visible proposed turbines than what is shown in VP14

13.7.3.3 Turbine Range Assessment

Section 13.1.4 describes the range of turbine dimensions assessed in this chapter, identifying the model **Scenario 3** with a tip height of 180m, rotor diameter of 162m and hub height of 105m as the best representative illustration of the proposed turbines. The two additional turbine scenarios, **Scenario 1** and **Scenario 2** are modelled in VP14 and VP15 of the *EIAR Volume 2: Photomontage Booklet* and assessed in *Appendix 13-3: Photomontage Visual Impact Assessment Tables*, to cover the range of turbine scenarios.

In the *Photomontage Booklet*, VP14 and VP15 show additional graphics with all three scenarios presented in the following colours:

- Green – Scenario 3 (Maximum Hub Height 105m, Minimum Rotor Diameter 150m),
- Purple – Scenario 1 (Minimum Hub Height 99m, Maximum Rotor Diameter 162m),
- Yellow/Brown – Scenario 2 (Median Hub Height 103.5m, Median Rotor Diameter 149m).

The visual differences between scenarios are best visualised in the comparative wireline views accompanying the Scenario 1 and Scenario 2 graphics sections of the *Photomontage Booklet*.

The comparative wirelines graphics are provided as a visual aid for the reader and assessor to understand the true visual difference between the differing turbine models. The comparative wireline is presented at 53.5º after each photomontage and shows the wireline of the alternative turbine envelope (Scenarios 1 and 2) overlain on the model used for all other viewpoints (Scenario 3).

VP14 Tigreenaun and VP15 Cloondahamper (Brown) are located in close proximity (within 1.3km) to the proposed turbines where the visual difference arising from the turbine range is most likely to be perceptible. The photomontage visuals show that there is only a very small discernible difference between the different ranges—the difference is only evident with the aid of the comparative wirelines. The detailed assessment is provided in *Appendix 13-3* in the table called Turbine Range Assessment: VP14 and VP15. Briefly, the Scenario 1 turbine model is discernible as a small difference between the hub and blade positions—most noticeable when looking at T6 in VP14, and T7 in VP15. The Scenario 2 model is hardly discernible, with no space between the hub positions and only a very small space between the blade-tips.

Irrespective of which combination of hub height and blade length within the range outlined in this application is installed on-site, the significance of residual landscape and visual effects as set out in this LVIA for VP14 and VP15 will not be altered.

13.7.3.4 Cumulative Landscape Effects during Operation

The Proposed Project and all existing, permitted and proposed wind energy developments identified within the 20km LVIA Study Area are sited within "Low" sensitivity landscape as designated by the GCDP 2022-2028 (recall FIGURE Policy Context Map in Section 13.4 Landscape Baseline) which is defined as *"Unlikely to be adversely affected by change"*. The landscape of the Proposed Wind Farm site was deemed to be "Low" sensitivity in this LVIA, while the landscape of the wider setting containing the cumulative wind energy developments is almost entirely flat, comprising mainly the same mix of land uses within the Proposed Wind Farm site itself; that of agriculture, cutover bog and commercial forestry, all generally low-sensitivity landscape types capable of absorbing wind energy development. In a future receiving environment there would be great distances between wind farms, with no wind farms closer together than 2.9km, and most wind farms greater than 5.3km apart.

Within the 15km LCA Study Area, the LCU-5e North River Clare Basin was scoped in for assessment, containing existing, permitted and proposed wind energy developments including the Proposed Project, and was deemed to be of "Low" sensitivity in this LVIA (see *Appendix 13-2: LCA Assessment Tables*). The existing Cloonlusk Wind Farm (2 no. turbines) is located 7.8km west of the nearest proposed turbine (T1). The permitted Cloonscaragh Single Turbine will be located in the same western vicinity, 10.5km from the nearest proposed turbine (T1).

In a future receiving environment, the proposed Clonberne Wind Farm (11 no. turbines) would also be sited within LCU-5e, located 5.4km north of the nearest proposed turbine (T7). Overall, LCU-5e is a relatively large LCU, with vast areas where no wind farm developments are sited.

The key landscape characteristics of LCU-5e as set out in the GCDP 2022-2028 include extensive plains with low enclosure, extensive bog areas in the east and stone-walled fields related to the area's history as a long-settled working landscape. As the cumulative developments are all located in the northwest of the LCU, the extensive bog areas in the east will not be materially affected. There is the potential for cumulative visual effects on the low-enclosure plains and vistas of stone-walled fields, which are common across the long-settled working landscape of Ireland, since some of the cumulative wind farms may been seen in combination with each other from the other parts of the LCU; cumulative visual landscape effects during the Operational Phase are discussed in the next Section 13.7.3.5.

Overall, in-combination effects with the Proposed Project are unlikely to cause significant cumulative landscape effects considering, that there is almost no visual connection between known developments. The key landscape characteristics of low-sensitivity features listed above are not likely to be affected.

13.7.3.5 Cumulative Visual Effects during Operation

Overall, there is no potential for Significant cumulative effects arising as a result of the Proposed Project. There are no predicted cumulative visual effects with existing or permitted wind farms for 10 out of 15 no. viewpoints assessed for this LVIA (VP01, VP04, VP05, VP08, VP09, VP11, VP12, VP13, VP14 and VP15).

There are no predicted cumulative visual effects of any kind from VP10 Cooloo Mountain, located 1.6km east of the proposed turbines, mainly owing to the commonly short-ranging views within this eastern part of the landscape with hillier terrain in than in the west that screens longer-ranging views.

There are no predicted cumulative visual effects with the existing Clooncon East Single Turbine, mainly owing to its low height, and being located at great distance (16.3km northeast) to the proposed turbines.

In a future receiving environment, no cumulative visual effects are predicted with the proposed Laurclavagh Wind Farm (8 no. turbines, 17.4km to the southwest) or with the proposed Gannow Wind Farm (8 no. turbines, 18.4km to the southeast), mainly owing to the distance between wind farms coupled with the flat, planar nature of the landscape on a macro scale, which quickly diminishes the perceived scale of turbines with distance and allows for complete visual screening by intervening vegetation.

The existing Cloonlusk Wind Farm (2 no. turbines) is located 7.8km west of the proposed turbines and may give rise to cumulative visual effects in succession with the proposed turbines as well as the permitted Cloonascragh Single Turbine in the same general vicinity. However, the potential for cumulative visual effects is very low due to the low number of turbines, the distances between developments, and intermittent visual screening by undulating topography and mature vegetation. Receptors represented by viewpoints VP02, VP06 and VP07 may experience such views in succession in a journey scenario travelling on R332 or nearby local roads.

In a future receiving environment, the proposed Clonberne Wind Farm (11 no. turbines) has the greatest potential to give rise to cumulative visual effects with the proposed turbines. Clonberne would be located 5.3km north of the Proposed Wind Farm. Receptors represented by VP01 Lavally Church may experience cumulative views of the proposed turbines and proposed Clonberne turbines in succession, as the viewpoint is situated nearly equidistant between the two developments. Receptors in the vicinity of VP09 Killavoher may experience cumulative views with Clonberne turbines in the foreground of long-ranging views over flat, planar landscape, with the proposed turbines contributing minimally to the scenario, being perceived as modest features on the horizon. Receptors represented by VP05 Cloonboo Beg and VP15 Cloondahamper (Brown) may experience cumulative views in succession with Clonberne being located directly behind the viewpoints approximately 4.5km, which would be perceived in the background of views to the north, with the proposed turbines in the foreground looking south. Receptors represented by all other viewpoints within 5km of the proposed turbines may experience similar potential cumulative views in succession, as Clonberne would be located to the north approximately 8-10km from viewers. All proposed turbines—those of Clonberne as well as the Proposed Project—would be seen in a modified working landscape setting with no protected views or scenic routes as set out in the GCDP 2022-2028 and no views of county, regional or national renown. These potential cumulative visual effects are uncertain and reliant on an outcome of the consenting system.

13.7.4 Decommissioning Phase Effects

The landscape and visual effects during the decommissioning phase are anticipated to be of a similar nature as those occurring during the construction phase.

The important element of decommissioning from an LVIA perspective is the dismantling and removal of the wind turbines. This will occur for a limited period of time and will predominately involve cranes adjacent to the turbines during the dismantling process. Upon decommissioning of the Proposed Wind Farm, the wind turbines will be disassembled in reverse order to how they were erected. The turbines will be disassembled with a similar model of crane that was used for their erection. The turbines will likely be removed from the Proposed Wind Farm site using the same transport methodology adopted initially for delivery to the site.

Turbine foundations would remain in place underground and would be covered with earth and reseeded as appropriate. This naturalisation process shall revert the landscape of the Proposed Wind Farm site back to a condition similar to the current landscape baseline.

Removal of the turbines and ancillary infrastructure (except the onsite substation and BESS) from the Proposed Wind Farm site during decommissioning will result in "Short-Term", "Slight", "Negative" visual effects. The operational phase visual effects of the onsite substation and BESS as permanent fixtures in the landscape are previously described. A "Decommissioning Plan" has been prepared (*Appendix 4-6* of this EIAR), the details of which will be agreed upon with the Local Authority prior to any decommissioning. The Decommissioning Plan will be updated prior to the end of the operational period in line with decommissioning methodologies that may exist at the time and will be agreed upon with the competent authority at that time.

13.8 Conclusion

The Proposed Project of Cooloo Wind Farm located in Cooloo, Co. Galway is an appropriately designed development, sited in a rural, modified working landscape of significantly low population density deemed capable of accommodating wind energy development. This LVIA assessed the likely significant effects of the Proposed Project on key sensitive landscape and visual receptors, as well as visual effects on local residential receptors in close proximity to the proposed turbines, including cumulative effects with other wind energy developments within 20km of the proposed turbines. In terms of the wind farm design, the siting of the proposed turbines exceeds the 500m set-back distance from residences set out in the 2006 Guidelines and adheres to the 4-times-tip-height set-back distance for residential visual amenity prescribed by the draft 2019 Guidelines. The LVIA was informed by desk study, field surveys, on-site visibility appraisals, GIS analysis including Zone of Theoretical Visibility (ZTV) and Route Screening Analysis (i.e. on-the-ground visibility appraisal within 3-5km), and the production of verified photomontages.

The LVIA is accompanied by one volume booklet and four appendices as follows:

- *EIAR Volume 2: Photomontage Booklet*, presenting photomontage visualisations of the proposed turbines from 13 no. representative viewpoints VP01-VP15, including modelling of other existing, permitted and proposed wind energy developments,
- *Appendix 13-1: LVIA Methodology*, outlining the guidance and detailed methodology used for the assessments conducted in the LVIA,
- *Appendix 13-2: LCA Assessment Tables*, assessing landscape and cumulative effects of 4 no. designated Landscape Character Areas (LCAs) scoped in for assessment,
- *Appendix 13-3: Photomontage Visual Impact Assessment Tables*, assessing visual and cumulative visual effects at viewpoints VP01-VP15 presented in the *Photomontage Booklet*,
- *Appendix 13-4: LVIA Baseline Map*, an A0-size map showing all baseline landscape features, viewpoints, and visual receptors.

Considering the 20km LVIA Study Area, no residual Significant effects will occur on designated landscape and visual receptors or scenic sensitivities of county, regional or national. No designated landscape receptors, landscape sensitivities or scenic views as set out in local planning policy exist within the 20km LVIA Study Area. 9 No. proposed turbines and all Proposed Wind Farm

infrastructure are sited within landscape of Co. Galway designated as "Low" sensitivity in the Galway County Development Plan (GCDP) 2022-2028 defined as *"Unlikely to be adversely affected by change"*. The proposed Grid Connection underground electrical cabling route is sited within the same.

Proposed turbines T1-T5 and T9 are located within areas zoned as *Open to Consideration* to wind energy development in the GCDP Local Authority Renewable Energy Strategy (LARES). Proposed turbines T6, T7 and T8 are sited within areas zoned as *Generally to be Discouraged*, thus the potential impact of the proposed turbines on these areas was a key consideration of the LVIA. It was determined that landscape sensitivity is not considered to be the key factor influencing the zoning of lands where proposed turbines T6, T7 and T8 are located. The landscape type and character of the *Generally to be Discouraged* lands where T6, T7 and T8 are located were determined to be generally the same type and character as that of the surrounding lands zoned as *Open to Consideration*, that is, modified working landscape types of low sensitivity which can effectively accommodate wind energy development, comprising agricultural fields, cutover peatlands, and commercial forestry.

The proposed turbines at 180m tip height, deemed the essential aspect of the Proposed Project from an LVIA perspective, are sited in primarily flat terrain of agricultural fields, forestry and cutover and raised boglands with localised undulations and mature boundary vegetation that provide visual screening from most receptors beyond 3km of the proposed turbines. A range of turbine model scenarios was assessed in the LVIA, with hub height ranging from 99-105m and rotor diameter ranging from 150-162m. For the avoidance of doubt, the turbine model scenario with the greatest potential to result in landscape and visual effects (Scenario 3 Maximum) was assessed in all visualisations, and additional representative visualisations of the Scenario 1 Minimum and Scenario 2 Median turbine scenarios were also produced for assessment. Irrespective of which turbine scenario is used, the determination of residual visual effects in the visual impact assessment tables will not be altered.

15 No. photomontage viewpoints were selected to represent a good geographic spread of views from within the 20km LVIA Study Area, focussed in the direction of the proposed turbines. The LVIA determined the potential for "Significant" residual visual effects at one viewpoint, VP14 Tigreenaun. The rating of predicted effects at VP14 is mainly owing to the proximity of residential receptors to the proposed turbines (within 1.3km) and the substantial magnitude of change observed from that vantage point. The number of receptors experiencing these effects is very low as the landscape surrounding the Proposed Wind Farm site has a significantly low population density. The visual effects ratings for the remaining viewpoints range from "Imperceptible" and "Not Significant" at viewpoints greater than 4.5km from the proposed turbines, to "Moderate" at viewpoints as close in as 1km. In terms of visual effects on local (within 3km) residential receptors, the LVIA determined that, in general, when viewing the proposed turbines from the north or south, the narrow field of view causes the perceived scale (height and breadth) of turbines to diminish quickly with distance, thereby mitigating visual impacts.

Other factors contributing to the mitigation of visual impacts include intermittent screening by mature forestry and boundary vegetation, and visual screening by localised undulations in topography which allow a sense of set-back from most receptors. In addition, from a distance, the layout of the proposed turbines ensures a relatively even height profile and even spacing between turbines, with the blades typically viewed above the horizon, slightly staggered among localised low hills, thereby meeting good aesthetic design as recommended in best practice guidance for LVIA and wind energy development.

4 No. designated Landscape Character Units (LCUs) were assessed for effects on landscape character within 15km of the proposed turbines, including cumulative effects. All LCUs were deemed to be Low sensitivity and no Significant landscape effects are predicted to occur. Factors contributing to the mitigation of effects on landscape character included the vast areas of the LCUs where no existing, permitted or proposed wind farms are sited, and the long distance between the proposed turbines and other developments which ensures that material alteration of the landscape is confined to individual areas and that visual connection between developments is minimised. No key sensitivities of the LCUs were found to be affected as a result of the Proposed Project.

1 no. designated protected view G-V42 Glenmaddy Turlough was scoped in for assessment, with a residual visual effect of “Imperceptible.” 7 no. settlements, 3 no. recreational destinations and 3 no. transport routes were scoped in for assessment; no “Significant” effects are predicted for any receptors. The LVIA focused on assessing the visual impact on local residential receptors within 3km of the proposed turbines considered high-sensitivity owing to their close proximity and determined that most receptors within 3km—those to the north, east and south of the Proposed Wind Farm site—are likely to experience “Moderate” residual visual effects, which are not significant.

The presence of wind turbines in the rural landscape of Ireland is consistent with evolving national climate policy and the changing character of Ireland’s working landscapes. The focus for the LVIA of the Proposed Project was on a combination of distance, arrangement, location and potential disruption to key scenic sensitivities, rather than simply on whether turbines are visible or not from a particular vantage point. The outcome of the LVIA, with regards to the EPA, 2022 definition of significance, is calibrated in the overall context of LVIA of wind energy developments in Ireland and what is acceptable in the context of emerging baseline trends and the acceptability of wind turbines within views as a result of national policy. The Proposed Project is therefore considered acceptable in this context and is in alignment with emerging baseline trends.