# 12 LANDSCAPE AND VISUAL AMENITY

## 12.1 INTRODUCTION

### 12.1.1 Background and Objectives

This chapter of the EIAR assesses the effects of the Proposed Development on the landscape and visual amenity of the receiving environment. Where significant effects are predicted, the chapter identifies appropriate mitigation strategies therein. The assessment will consider the potential effects during the construction, operational, and decommissioning phases.

The Proposed Development refers to all elements of the application for the construction and operation of the proposed Kellystown Wind Farm (refer to **Chapter 2: Description of the Proposed Development**). Common acronyms used throughout this EIAR can be found in the **Technical Appendix 1.4**. This chapter of the EIAR is supported by a portfolio of photomontages provided as a separate booklet, Supporting figures in **Volume III** and the following Technical Appendices provided in **Volume IV** of this EIAR:

- Technical Appendix 12.1: Visual Impact Assessments at VPs

This LVIA describes the landscape context of the Proposed Development and assesses the likely landscape and visual impacts of the scheme on the receiving environment. Although closely linked, landscape and visual impacts are assessed separately, in accordance with relevant guidance outlined in section 12.2.2:

**Landscape Impact Assessment (LIA)** relates to changes in the physical landscape brought about by the Proposed Development, which may alter its character, and how this is experienced. This requires a detailed analysis of the individual elements and characteristics of a landscape that go together to make up the overall landscape character of that area. By understanding the aspects that contribute to landscape character, it is possible to make judgements in relation to its quality (integrity) and to identify key sensitivities. This, in turn, provides a measure of the ability of the landscape in question to accommodate the type and scale of change associated with the Proposed Development without causing unacceptable adverse changes to its character.

**Visual Impact Assessment (VIA)** relates to assessing effects on specific views and the general visual amenity experienced by people. This deals with how the surroundings of individuals or groups of people may be specifically affected by changes in the content and

character of views as a result of the change or loss of existing elements of the landscape and/or introduction of new elements. Visual impacts may occur from visual obstruction (blocking of a view, be it full, partial or intermittent) or Visual Intrusion (interruption of a view without blocking).

**Cumulative landscape and visual impact assessment** is concerned with additional changes to the landscape or visual amenity caused by the Proposed Development in conjunction with other developments (associated or separate from it).

### 12.1.2 Assessment Structure

In accordance with the Landscape Institute and the Institute of Environmental Management and Assessment publication entitled Guidelines for Landscape and Visual Impact Assessment – Third Edition (2013) (GLVIA3), the structure of this chapter will consist of separate considerations of landscape effects and visual effects in the following order:

- Assessment of landscape value and sensitivity
- Assessment of the magnitude of landscape effects within the Study Area
- Assessment of the significance of landscape impacts
- Assessment of visual receptor sensitivity
- Assessment of visual impact magnitude at representative viewpoint locations (using photomontages)
- Assessment of visual impact significance
- Assessment of cumulative landscape and visual impacts

### 12.1.3 Statement of Authority

This Landscape and Visual Impact Assessment was prepared by Mark Salisbury, Associate Director and Landscape Architect at Macro Works Ltd (part of APEM Group), in Cherrywood, Dublin.

Macro Works is a specialist LVIA company with over 20 years of experience in the appraisal of effects from a variety of energy, infrastructure and commercial developments. Macro Works' relevant experience includes LVIA work on over 140 on-shore wind farm proposals throughout Ireland, including six Strategic Infrastructure Development (SID) wind farms. Macro Works and its senior staff members are affiliated with the Irish Landscape Institute.

Mark is a Chartered Landscape Architect with the Landscape Institute (UK) and has over 15 years of experience preparing LVIA reports for a broad range of development types, including numerous wind farm projects such as that proposed.

The LVIA has been reviewed by Richard Barker, Divisional Director in Macro Works, and Landscape Architect affiliated with the Irish Landscape Institute. Richard has undertaken LVIA work for over 90 wind farms amongst numerous other development projects in Ireland, and has considerable oral hearing training and expert witness experience.

### 12.1.4 Description of the Proposed Development

This LVIA considers the impacts of activities and features relating to the construction, operation, and decommissioning stages. The 10 year planning permission being sought relates to a 35-year operational life from the date of commissioning.

A full description of the Proposed Development is provided in **Chapter 2: Description of the Proposed Development**.

### 12.1.5 Candidate turbine scenarios

The turbine parameter range is the subject of an opinion from the Council as set out in Chapter 1: Introduction. The candidate turbine scenarios are included in Table 1.5.

Macro Works have used candidate Turbine 3 Scenario as the basis for the LVIA and supporting photomontages. It has a tip height dimension of 180 m, a median hub height of 155 m, and a median rotor diameter of 102.5 m. Compared with candidate turbine Scenarios 1 and 2, Scenario 3 has the greatest overall turbine height, which allows the greatest level of potential visibility to form the basis of the LVIA. In terms of the median characteristics of the hub height and rotor diameter, Scenario 3 offers a minimal departure from the dimensions of candidate turbine Scenarios 1 and 2 and is therefore considered more relevant and representative as the basis of the main assessment.

In order to examine the full range of potential wind turbine dimensions, Macro Works prepared comparative photomontages at three of the previously selected viewpoints (VP3, VP7 and VP15) to represent short and mid-distance views of the Proposed Development in differing contexts. It was not considered necessary to use long-distance views (10 km+) for this comparative exercise as any variation in turbine dimensions is even less likely to be read at longer distances.

All three scenarios have been considered in terms of their potential to generate landscape and visual effects, following the approach and criteria outlined for the main body of the LVIA.

## 12.2 ASSESSMENT METHODOLOGY AND SIGNIFICANCE CRITERIA

### 12.2.1 Assessment Methodology

Production of this LVIA involved baseline work in the form of desktop studies and fieldwork comprising professional evaluation by qualified and experienced Landscape Architects included at Table 1.5. This entailed the following:

### 12.2.2 Definition of Study Area

The Wind Energy Development Guidelines published by the Department of the Environment, Heritage and Local Government (DOEHLG) (2006/2019 revision) (WEDG) specify different radii for examining the zone of theoretical visibility of proposed wind farm projects (ZTV). The extent of this search area is influenced by turbine height, as follows:

- 15km radius for blade tips up to 100m.
- 20km radius for blade tips greater than 100m.
- 25km radius where landscapes of national and international importance exist.

In the case of this project, the blade tips are proposed to be between 179.5m and 180m high and therefore the minimum ZTV radius recommended is 20km from the outermost turbines of the scheme. There are not considered to be any sites of national or international importance between 20 – 25km of the outermost turbines of the Proposed Development and thus, the radius of the Study Area will remain at 20km. Refer to Figure 12.1. Impacts pertaining to other aspects of the Proposed development such as the grid connection route, and turbine delivery route, are localised to the immediate environment, and as such the consideration of impacts focuses on the immediate landscape context within approximately 500m. These areas fall within the 20km Study Area.

The Study Area adopted is in accordance with the WEDG and is consistent with study areas employed for comparable wind energy applications throughout Ireland. It is considered a robust area on which to structure the LVIA, whilst being proportionate to the most notable effects.

Notwithstanding the full extent of the LVIA Study Area, there will be a particular focus on receptors and effects within the Central Study Area where there is a higher potential for significant impacts to occur. When referenced within this assessment, the 'Central Study Area' is the landscape within 5km of the Site. The remainder of the Study Area beyond 5km to the 20km outer limit is referred to as the 'Wider Study Area'. Relevant guidance does not require a Central Study Area, or Wider Study Area to be defined, but it has become standard

/ best practice to highlight the distinction between the immediate context of the site, the context of the landscape within the local vicinity of the turbines, and then the context of the wider landscape.

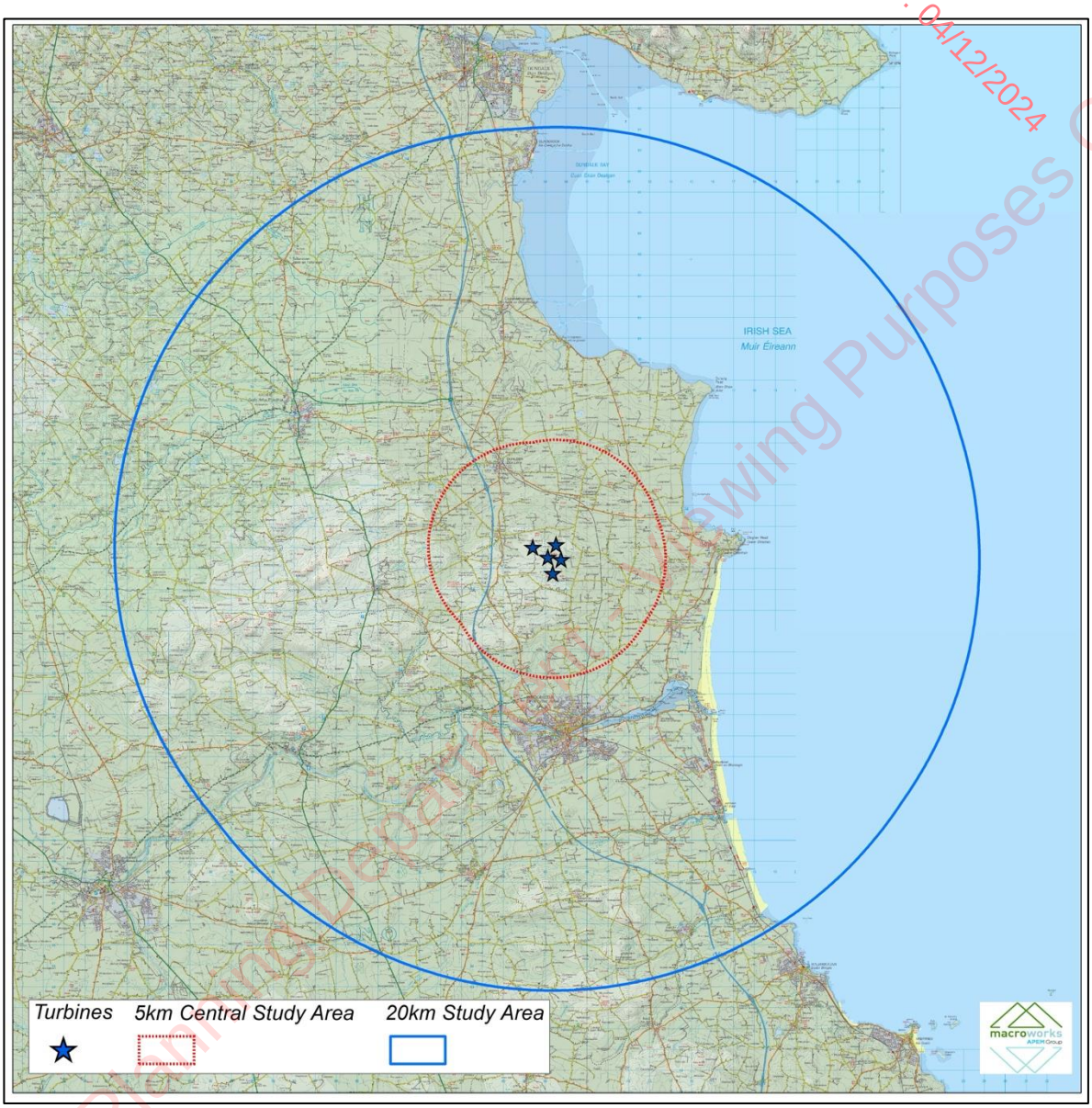


**Figure 12.1 – LVIA indicating the 20km Study Area.**

### 12.2.2.1 Desktop Study

- Review of a Zone of Theoretical Visibility (ZTV) map, which indicates areas from which the Proposed Development is potentially visible in relation to terrain within the Study Area.
- Review of relevant County Development Plans, particularly regarding sensitive landscape and scenic view/route designations (section 12.3.4).

- Selection of potential Viewshed Reference Points (VRPs) from key visual receptors to be investigated during fieldwork for actual visibility and sensitivity (outlined in due course).

#### 12.2.2.2 Fieldwork

- Site visits to potential VRP locations, and the Wider Study Area generally in order to gain a baseline understanding of landscape context and to interrogate the ZTV.
- Site visits also included the capture of baseline photography and grid reference coordinates for each location for use in the production of photomontages.
- Macro Works has undertaken numerous site visits to the Wider Study Area over the last 10+ years and has a bank of photography upon which to draw. Specific dates for site photography include 24th May 2022, 10th November 2023, 4th and 5th January 2024, and 16th February 2024. Where photography has been captured in previous years and used as the basis of the assessment photomontages, this has been on the basis of favourable weather conditions, and where no material change to the baseline will has occurred in the intervening period.

#### 12.2.2.3 Landscape and Visual assessment

The process adopted in regard to the identification of landscape and visual effects (adopting the assessment criteria in 12.2.5 and 12.2.6 respectively) is summarised as follows:

- Selection of a refined set of VRPs for assessment (outlined in due course).
- Consideration of the receiving landscape with regard to overall landscape character as well as the salient features of the Study Area including landform, drainage, vegetation, land use and landscape designations.
- Consideration of the visual environment including receptor locations such as centres of population and houses, transport routes, public amenities and facilities and designated and recognised views of scenic value.
- Consideration of design guidance and planning policies.
- Consideration of potentially significant construction, operational, and decommissioning stage effects and the mitigation measures that could be employed to reduce such effects.
- Assessment of the significance of residual landscape impacts.
- Assessment of the significance of residual visual impacts aided by photomontages prepared at all of the selected VRP locations.

- Assessment of cumulative landscape and visual effects in combination with other relevant surrounding developments that are either existing, permitted, or subject to a valid planning application.

### 12.2.3 Relevant Legislation and Guidance

This LVIA uses a methodology that is in accordance with that prescribed within the following guidance documents:

- Environmental Protection Agency (EPA) publication 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports (2022) and the accompanying Advice Notes on Current Practice in the Preparation of Environmental Impact Assessment Reports;
- Landscape Institute and the Institute of Environmental Management and Assessment publication entitled Guidelines for Landscape and Visual Impact Assessment – Third Edition (2013) (GLVIA3);
- Department of the Environment, Heritage and Local Government Wind Energy Development Guidelines (2006) and Draft Revised Wind Energy Development Guidelines (2019);
- NatureScot: Assessing the cumulative landscape and visual impact of onshore wind energy developments (2021);
- Scottish Natural Heritage (SNH) Visual representation of wind farms: Best Practice Guidelines (version 2.2 - 2017); and
- Landscape Institute Technical Guidance Note (TGN) 06/19 Visual Representation of development proposals (2019)

The above guidance is widely recognised and used by landscape professionals in undertaking LVIA work in Ireland, and is considered to represent best practice in the absence of country-specific LVIA and visualisation guidance/standards.

### 12.2.4 Computer Generated Images, Photomontages and Wireframes

This LVIA is supported by a variety of computer-generated maps and graphics as well as verifiable photomontages that depict the Proposed Development within the views from a range of represented visual receptor locations. These maps, graphics and visualisations consist of the following:

- Zone of Theoretical Visibility (ZTV) maps; and
- Photomontages consisting of existing views, wireframe views and proposed views.

### 12.2.5 Assessment Criteria for Landscape Effect



The classification system used by Macro Works to determine the significance of landscape and visual impacts is in accordance with GLVIA3. When assessing the potential impacts on the landscape resulting from a wind farm development, the following criteria are considered:

- Landscape character, value and sensitivity;
- Magnitude of likely impacts; and
- Significance of landscape effects.

The sensitivity of the landscape to change is the degree to which a particular landscape receptor (Landscape Character Area (LCA) or feature) can accommodate changes or new features without unacceptable detrimental effects on its essential characteristics. Landscape Value and Sensitivity is classified using the following criteria:

**Table 12.1 - Landscape Value and Sensitivity**

| Criteria | Description |
|---|---|
| Very High | Areas where the landscape character exhibits a very low capacity for change in the form of development. Examples of which are high value landscapes, protected at an international or national level (World Heritage Site/National Park), where the principal management objectives are likely to be protection of the existing character. |
| High | Areas where the landscape character exhibits a low capacity for change in the form of development. Examples of which are high value landscapes, protected at a national or regional level (Area of Outstanding Natural Beauty), where the principal management objectives are likely to be considered conservation of the existing character. |
| Medium | Areas where the landscape character exhibits some capacity and scope for development. Examples of which are landscapes which have a designation of protection at a county level or at non-designated local level where there is evidence of local value and use. |
| Low | Areas where the landscape character exhibits a higher capacity for change from development. Typically, this would include lower value, non-designated landscapes that may also have some elements or features of recognisable quality, where landscape management objectives include, enhancement, repair and restoration. |
| Negligible | Areas of landscape character that include derelict, mining, industrial land or are part of the urban fringe where there would be a reasonable capacity to embrace change or the capacity to include the development proposals. Management objectives in such areas could be focused on change, creation of landscape improvements and/or restoration to realise a higher landscape value. |

The magnitude of a predicted landscape impact is a product of the scale, extent or degree of change that is likely to be experienced as a result of the Proposed Development. The magnitude takes into account whether there is a direct physical impact resulting from the loss of landscape components and/or a change that extends beyond the Site Boundary that may have an effect on the landscape character of the area.

**Table 12.2 - Magnitude of Landscape Impacts**

| Criteria | Description |
|---|---|
| Very High | Change that would be large in extent and scale with the loss of critically important landscape elements and features, that may also involve the introduction of new uncharacteristic elements or features that contribute to an overall change of the landscape in terms of character, value and quality. |
| High | Change that would be more limited in extent and scale with the loss of important landscape elements and features, that may also involve the introduction of new uncharacteristic elements or features that contribute to an overall change of the landscape in terms of character, value and quality. |
| Medium | Changes that are modest in extent and scale involving the loss of landscape characteristics or elements that may also involve the introduction of new uncharacteristic elements or features that would lead to changes in landscape character, and quality. |
| Low | Changes affecting small areas of landscape character and quality, together with the loss of some less characteristic landscape elements or the addition of new features or elements. |
| Negligible | Changes affecting small or very restricted areas of landscape character. This may include the limited loss of some elements or the addition of some new features or elements that are characteristic of the existing landscape or are hardly perceivable. |

The significance of a landscape impact is based on a balance between the sensitivity of the landscape receptor and the magnitude of the impact. The significance of landscape impacts is arrived at using the following matrix:

**Table 12.3 - Landscape Impact Significance Matrix**

| | **Sensitivity of Receptor** | | | | |
|---|---|---|---|---|---|
| **Scale/Magnitude** | *Very High* | *High* | *Medium* | *Low* | *Negligible* |
| *Very High* | Profound | Profound-substantial | Substantial | Moderate | Slight |
| *High* | Profound-substantial | Substantial | Substantial-moderate | Moderate-slight | Slight-imperceptible |
| *Medium* | Substantial | Substantial-moderate | Moderate | Slight | Imperceptible |
| *Low* | Moderate | Moderate-slight | Slight | Slight-imperceptible | Imperceptible |
| *Negligible* | Slight | Slight-imperceptible | Imperceptible | Imperceptible | Imperceptible |

*Note: Judgements deemed 'substantial' and above are considered to be 'significant effects' in EIA terms. Substantial-moderate judgements are considered borderline significant.*

### 12.2.6 Assessment Criteria for Visual Effect

As with the landscape impact, the visual impact of the Proposed Development will be assessed as a function of receptor sensitivity versus magnitude. In this instance, the sensitivity of visual receptors weighed against the magnitude of visual effects.

#### 12.2.6.1 Visual Sensitivity

As with landscape sensitivity, the sensitivity of a visual receptor is categorised as Very High, High, Medium, Low, and Negligible. Unlike landscape sensitivity, however, the sensitivity of visual receptors has an anthropocentric (human) basis. It considers factors such as the perceived quality and values associated with the view, the landscape context of the viewer, the likely activity the viewer is engaged in and whether this heightens their awareness of the surrounding environment.

Visual sensitivity is a two-sided analysis of receptor susceptibility (people or groups of people) versus the value of the view on offer at a particular location.

To assess the susceptibility of viewers and the amenity value of views, the assessors use a range of criteria and provide a four-point weighting scale to indicate how strongly the viewer/view is associated with each of the criteria. Susceptibility criteria are extracted directly from the GLVIA3, whilst the value criteria relate to various aspects of a view that might typically be related to high amenity including, but not limited to, scenic designations. These are set out below:

- **Susceptibility of receptor group to changes in view**. This is one of the most important criteria to consider in determining overall visual sensitivity because it is the single category dealing with viewer susceptibility. In accordance with GLVIA3 visual receptors most susceptible to changes in views and visual amenity are:
    - *"Residents at home*
    - *People, whether residents or visitors, who are engaged in outdoor recreation, including use of public rights of way, whose attention or interest is likely to be focussed on the landscape and on particular views*
    - *Visitors to heritage assets, or to other attractions, where views of the surroundings are an important contributor to the experience*
    - *Communities where views contribute to the landscape setting enjoyed by residents in the area*

- *Travellers on road rail or other transport routes where such travel involves recognised scenic routes and awareness of views is likely to be heightened".*

*"Visual receptors that are less susceptible to changes in views and visual amenity include:*

- *People engaged in outdoor sport or recreation, which does not involve or depend upon appreciation of views of the landscape*
- *People at their place of work whose attention may be focussed on their work or activity, not their surroundings and where the setting is not important to the quality of working life".*

**Values typically associated the visual amenity**

- **Recognised scenic value of the view** (County Development Plan designations, guidebooks, touring maps, postcards etc). These represent a consensus in terms of which scenic views and routes within an area are strongly valued by the population because in the case of County Development Plans, at least, a public consultation process is required.
- **Views from within highly sensitive landscape areas.** Again, highly sensitive landscape designations are usually part of a county's Landscape Character Assessment, which is then incorporated with the County Development Plan and is therefore subject to the public consultation process. Viewers within such areas are likely to be highly attuned to the landscape around them.
- **Intensity of use, popularity.** Whilst not reflective of the amenity value of a view, this criterion relates to the number of viewers likely to experience a view regularly and whether this is significant at the county or regional scale.
- **Connection with the landscape.** This considers whether or not receptors are likely to be highly attuned to views of the landscape i.e. commuters hurriedly driving on busy national route versus hill walkers directly engaged with the landscape enjoying changing sequential views over it.
- **Provision of elevated panoramic views.** This relates to the extent of the view on offer and the tendency for receptors to become more attuned to the surrounding landscape at locations that afford broad vistas.
- **Sense of remoteness and/or tranquillity.** Remote and tranquil viewing locations are more likely to heighten the amenity value of a view and have a lower intensity of development in comparison to dynamic viewing locations such as a busy street scene, for example:

- **Degree of perceived naturalness.** Where a view is valued for the sense of naturalness of the surrounding landscape it is likely to be highly sensitive to visual intrusion by obvious human interventions.
- **Presence of striking or noteworthy features**. A view might be strongly valued because it contains a distinctive and memorable landscape feature such as a promontory headland, lough or castle.
- **Historical, cultural or spiritual value.** Such attributes may be evident or sensed at certain viewing locations that attract visitors for the purposes of contemplation or reflection heightening the sense of their surroundings.
- **Rarity or uniqueness of the view.** This might include the noteworthy representativeness of a certain landscape type and considers whether other similar views might be afforded in the local or the national context.
- **Integrity of the landscape character in view.** This criterion considers the condition and intactness of the landscape in view and whether the landscape pattern is a regular one of few strongly related components or an irregular one containing a variety of disparate components.
- **Sense of place.** This criterion considers whether there is a special sense of wholeness and harmony at the viewing location.
- **Sense of awe.** This criterion considers whether the view inspires an overwhelming sense of scale or the power of nature.

Those locations where highly susceptible receptors or receptor groups are present and which are deemed to satisfy many of the view value criteria above are likely to be judged to have a high visual sensitivity and vice versa.

#### 12.2.6.2 Visual Impact Magnitude

The magnitude of visual effects is determined on the basis of two factors; the visual presence of the proposal and its effect on visual amenity.

Visual presence is a somewhat quantitative measure relating to how noticeable or visually dominant the proposal is within a particular view. This is based on a number of aspects beyond simply scale in relation to distance. Some of these include the extent of the view as well as its complexity and the degree of existing contextual movement experienced such as might occur where turbines are viewed as part of/beyond a busy street scene. The backdrop against which the Proposed Development is presented and its relationship with other focal points or prominent features within the view is also considered. Visual presence is essentially a measure of the relative visual dominance of the proposal within the available

vista and is expressed as such i.e. minimal, sub-dominant, co-dominant, dominant, highly dominant.

For wind energy developments, a strong visual presence is not necessarily synonymous with adverse impact, specifically being 'noticed' by viewers and contributing memorably to the experience of that view or location – positive or negatively. Instead, the 2018 Fáilte Ireland survey entitled 'Report on Visitor Awareness and Perceptions of the Irish Landscape' summarised results as below:

- *"The majority of visitors appear not to notice the majority of development – even very large and visually prominent structures such as wind turbines and powerlines*
- *It appears that there are significant divergences between the what can be seen and what is noticed*
- *The majority of visitors expressed very limited desire to change developments that they do notice*
- *The visibility of developments of all types give rise to significantly less adverse effects on the impression of landscape than may often be assumed in the decision-making process*
- *The majority of visible development does not appear to have any adverse effects on the impression of the quality of the landscape"*

With specific regard to wind farms, the following is mentioned within the main report:

- *"Visibility at Locations - Windfarms or Wind Turbines were visible from four locations, they were mentioned by visitors at one location – Cobh. At this site 11% of visitors mentioned noticing wind energy projects*
- *Visibility en-route to locations - Wind Energy projects were mapped as being visible en-route to six sites, they were mentioned by less than 5% of all visitors."*

The purpose here is not to suggest that turbines are unlikely to be noticed, regardless of the visual presence, but rather to highlight that the assessment of visual impact magnitude for wind turbines is more complex than just the degree to which turbines occupy a view. Furthermore, a clear and comprehensive view of a wind farm might be preferable in many instances to a partial, cluttered view of turbine components that are not so noticeable within a view. On the basis of these reasons, the visual amenity aspect of assessing impact

magnitude is qualitative and considers such factors as the spatial arrangement of turbines both within the scheme and in relation to surrounding terrain and land cover. It also examines whether the project contributes positively to the existing qualities of the vista or results in distracting visual effects and disharmony.

It should be noted that as a result of this two-sided analysis, a high order visual presence can be moderated by a low level of effect on visual amenity and vice versa. Given that wind turbines do not represent significant bulk; visual impacts result almost entirely from visual 'intrusion' rather than visual 'obstruction' (the blocking of a view). The magnitude of visual impacts is classified in the following table derived from GLVIA3:

**Table 12.4 - Magnitude of Visual Impacts**

| Criteria | Description |
|---|---|
| Very High | The proposal intrudes into a large proportion or critical part of the available vista and is without question the most noticeable element. A high degree of visual disorder or disharmony is also generated, strongly reducing the visual amenity of the scene. |
| High | The proposal intrudes into a significant proportion or important part of the available vista and is one of the most noticeable elements. A considerable degree of visual disorder or disharmony is also likely to be generated, appreciably reducing the visual amenity of the scene. |
| Medium | The proposal represents a moderate intrusion into the available vista, is a readily noticeable element and/or it may generate a degree of visual disorder or disharmony, thereby reducing the visual amenity of the scene. Alternatively, it may represent a balance of higher and lower order estimates in relation to visual presence and visual amenity. |
| Low | The proposal intrudes to a minor extent into the available vista and may not be noticed by a casual observer and/or the proposal would not have a marked effect on the visual amenity of the scene. |
| Negligible | The proposal would be barely discernible within the available vista and/or it would not detract from, and may even enhance, the visual amenity of the scene. |

### 12.2.6.3 Visual Impact Significance

As stated above, the significance of visual impacts is a function of visual receptor sensitivity and visual impact magnitude. This relationship is expressed in the significance matrix in **Table 12.3** above.

### 12.2.6.4 Quality and Timescale of Effects

In addition to assessing the significance of landscape/townscape effects and visual effects, EPA Guidance requires that the quality of the effects is also determined. This could be negative/adverse, neutral, or positive/beneficial.

- Positive Effects: A change which improves the quality of the environment;

- Neutral and/or balanced Effects: No effects, or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
- Negative/adverse Effects: A change that reduces the quality of the environment

The same EPA guidelines also set out categories of impact duration:

- Temporary – Lasting for one year or less;
- Short Term – Lasting one to seven years;
- Medium Term – Lasting seven to fifteen years;
- Long Term – Lasting fifteen years to sixty years; and
- Permanent – Lasting over sixty years.

In the case of commercial wind energy developments and the associated introduction of new moving structures within rural and upland areas, the quality of the landscape and visual effects will almost always be negative, rather than positive or even neutral. Unless otherwise stated, the quality of the landscape and visual effect judgements herein can be taken as negative.

In terms of duration, the proposed turbines will have a long-term impact, as permission is being sought for a 35 year period after which the turbines will be decommissioned. Some other elements of the Proposed Development relating to access tracks and elements of the grid connection will likely remain in perpetuity and will therefore have Permanent effects.

### 12.2.7 Assessment Criteria for Cumulative Effects

The WEDG references the need to assess the cumulative effects of the scheme (at 4.7.4, P41 of the 2019 revision) as including the "wind energy development and the grid connection and any other works which are ancillary to the development of the wind energy development" in order that the planning application addresses the cumulative impacts of the whole project. Cumulative in this context relates the project as a whole, and has been the approach adopted in the main assessment (as outlined in 12.2.2).

NatureScot's 'Guidance – Assessing the Cumulative Effects of Onshore Wind Farms' (2021) is considered a key reference with regard to cumulative landscape and visual impacts. GLVIA3 provides comparable guidance in relation to cumulative issues, whilst recognising that it is an emerging area of study.

The principal focus of wind energy cumulative impact assessment guidance relates to other wind farms - as opposed to other forms of development. This will also be the main focus

herein, albeit with subsequent consideration of cumulative impacts with other forms of notable development (existing, permitted or subject to a valid planning application).

In relation to cumulative landscape impacts, the NatureScot guidance states:

*"Cumulative landscape impacts can change either the physical fabric or character of the landscape, or any special values attached to it. For example:*

- *Cumulative impacts on the physical fabric of the landscape arise when two or more developments affect landscape components such as woodland, dykes, rural roads or hedgerows. Although this may not significantly affect the landscape character, the cumulative effect on these components may be significant – for example, where the last remnants of former shelterbelts are completely removed by two or more developments.*

- *Cumulative impacts on landscape character arise when two or more developments introduce new features into the landscape. In this way, they can change the landscape character to such an extent that they create a different landscape character type, in a similar way to large scale afforestation. That change need not be adverse; some derelict or degraded landscapes may be enhanced as a result of such a change in landscape character, especially where opportunities for new woodland planting, or peatland restoration are maximised, for example."*

In relation to cumulative visual impacts, the NatureScot guidance states:

*Cumulative impacts on visual amenity can be caused by 'combined visibility' and/or 'sequential impacts':*

- *Combined visibility occurs where the observer is able to see two or more developments from one viewpoint. Assessments should consider the combined effect of all wind farms which are (or would be) visible from relevant viewpoints. Combined visibility may either be in combination (where several wind farms are within the observer's arc of vision at the same time) or in succession (where the observer has to turn to see the various wind farms).*

- *Sequential impacts occur when the observer has to move to another viewpoint to see different developments. Sequential impacts should be assessed for travel along regularly-used routes like major roads, railway lines, ferry routes, popular paths, etc. The magnitude of sequential effects will be affected by speed of travel and distance between viewpoints'*

The WEDG describes a cumulative effect as "*the perceived effect on the landscape of two or more wind energy developments visible from any one place*", and provides guidance as to the aesthetic effects of multiple turbine developments in various landscape contexts. It also requires that cumulative effects are represented using Zone of Theoretical Visibility maps that show other wind energy developments.

Based on both sets of guidance, cumulative impacts can be experienced in a variety of ways.

In terms of landscape character, additional wind energy developments might contribute to an increasing sense of proliferation. A new wind farm might also contribute to a sense of being surrounded by turbines with little relief from the view of them.

In terms of visual amenity, there is a range of ways in which an additional wind farm might generate visual conflict and disharmony with other wind energy developments. Some of the most common include visual tension caused by disparate extent, scale or layout of neighbouring developments. A sense of visual ambivalence might also be caused by adjacent developments traversing different landscape types. Turbines from a proposed wind farm that are seen stacked in perspective against the turbines of nearer or further developments tend to cause visual clutter and confusion. Such effects are exacerbated when, for example, the more distant turbines are larger than the nearer ones and the sense of distance is distorted.

**Table 12.5** provides Macro Works' criteria for assessing the magnitude of cumulative impacts. The approach adopted is informed by the NatureScot Guidelines (2021) and GLVIA3, but adopts a study area that is consistent with the main assessment to retain a proportionate focus on the most notable effects. As industry-specific guidance for the assessment of cumulative landscape and visual effects, this guidance is widely adopted for LVIA work and is considered best practice in Ireland, and the approach adopted in relation to many other schemes across Ireland.

Other wind energy developments are the most relevant type of development in a cumulative LVIA assessment given the comparable characteristics. In this regard, small and domestic-scale wind turbines are generally not considered relevant given their proportions and potential to generate notable cumulative effects. Given the potentially extensive scope of including all other types of development within a cumulative LVIA, a proportionate level of consideration is given to schemes that are considered to have the potential to significantly alter the cumulative landscape and visual baseline environment. Factors such as scale and

proximity of a proposed development are important factors, in addition to the characteristics of the development in question.

**Table 12.5 - Magnitude of Cumulative Impacts**

| Criteria | Description |
|---|---|
| Very High | • The proposed wind farm will strongly contribute to wind energy development being the defining element of the surrounding landscape.<br>• It will strongly contribute to a sense of wind farm proliferation and being surrounded by wind energy development.<br>• Strongly adverse visual effects will be generated by the proposed turbines in relation to other turbines. |
| High | • The proposed wind farm will contribute significantly to wind energy development being a defining element of the surrounding landscape.<br>• It will significantly contribute to a sense of wind farm proliferation and being surrounded by wind energy development.<br>• Significant adverse visual effects will be generated by the proposed turbines in relation to other turbines. |
| Medium | • The proposed wind farm will contribute to wind energy development being a characteristic element of the surrounding landscape.<br>• It will contribute to a sense of wind farm accumulation and dissemination within the surrounding landscape.<br>• Adverse visual effects might be generated by the proposed turbines in relation to other turbines. |
| Low | • The proposed wind farm will be one of only a few wind farms in the surrounding area and will be viewed in isolation from most receptors.<br>• It might contribute to wind farm development becoming a familiar feature within the surrounding landscape.<br>• The design characteristics of the proposed wind farm accord with other schemes within the surrounding landscape and adverse visual effects are not likely to occur in relation to these. |
| Negligible | • The proposed wind farm will most often be viewed in isolation or occasionally in conjunction with other distant wind energy developments.<br>• Wind energy development will remain an uncommon landscape feature in the surrounding landscape.<br>• No adverse visual effects will be generated by the proposed turbines in relation to other turbines. |

## 12.3 BASELINE DESCRIPTION

### 12.3.1 Landscape Baseline

The landscape baseline represents the existing landscape context and is the scenario against which any changes to the landscape brought about by the Proposed Development will be assessed. This also includes reference to any relevant landscape character appraisals and the current landscape policy context (both are generally contained within County Development Plans). The relevant County Development Plan (CDP) covering the site is the Louth CDP (2021-2027). Much of the Wider Study Area also falls within the Meath CDP (2021-2027).

A description of the landscape context of the proposed wind farm Site and Study Area is provided below under the headings of landform and drainage, vegetation and land use, centres of population, transport routes and public amenities and facilities as well as the immediate site context.

Additional descriptions of the landscape, as viewed from each of the selected viewpoints, are provided under the detailed assessments later using a similar structure. Although this description forms part of the landscape baseline, many of the landscape elements identified also relate to visual receptors i.e., places and transport routes from which viewers can potentially see the Proposed Development. The visual resource will be described in greater detail below. **Figure 12.2** shows the Site in its landscape context and the immediate surroundings.

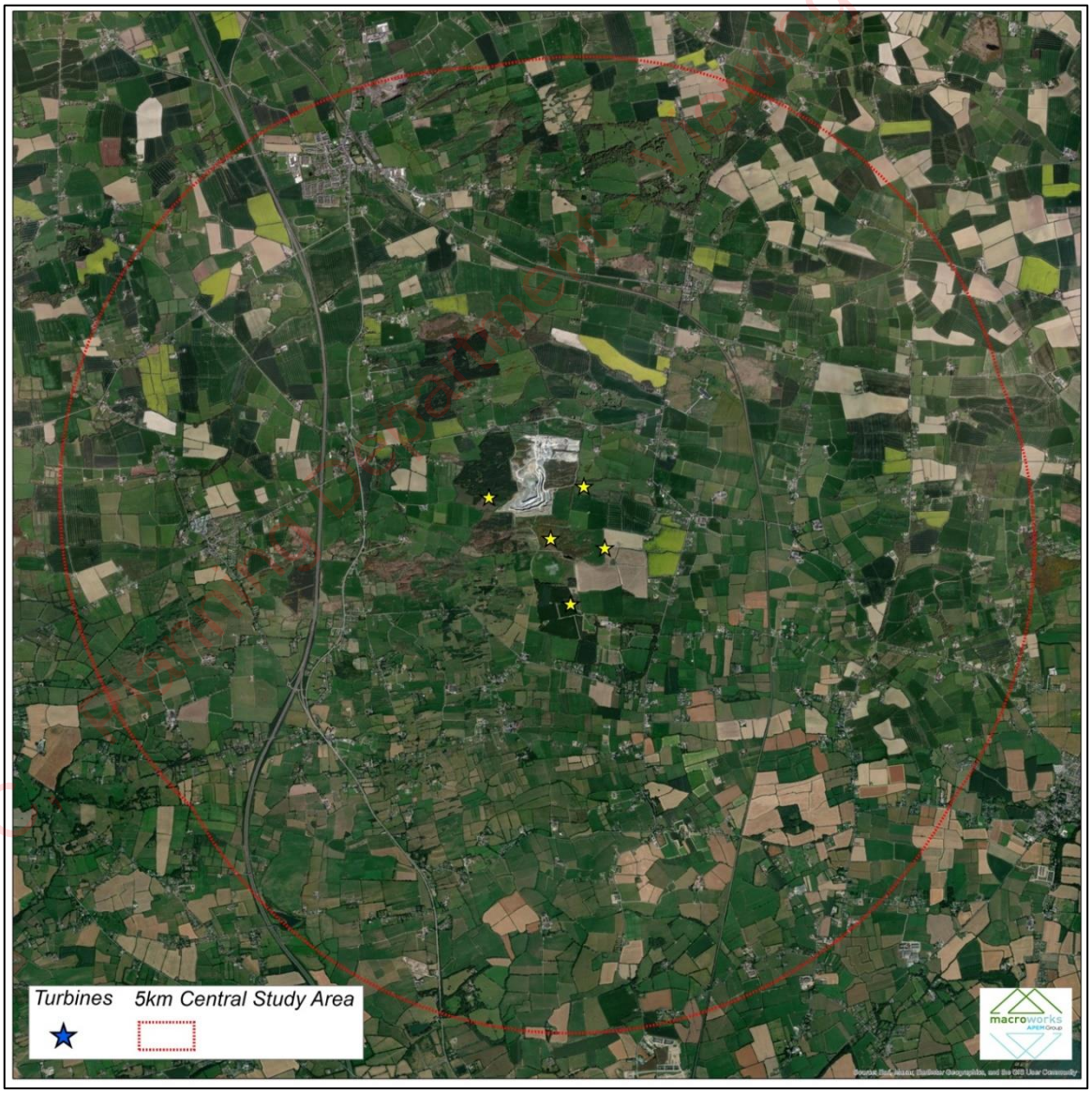


**Figure 12.2 - Aerial photograph showing the landscape context of the site and its immediate surrounds.**

### 12.3.2 Landform and Drainage

The site is located at an elevation of approximately 110m AOD, and forms part of a comparatively elevated plateau in the Wider Study Area. At a local level, the landform contains gentle undulations, with local high points of around 130m AOD, beyond which the landform rises to the south (within approximately 4km), and west where landform is defined by a series of rolling hills, some of which are above 200m AOD, including most notably Mount Oriel (251m AOD) approximately 9km to the west, and Slieve Breagh (226m AOD), approximately 14.5km to the west.

To the south of the site, high points include Fieldstown (187m AOD) within approximately 1.5km, Tullyeskar (167m AOD within approximately 2.5km, beyond which landform drops towards Drogheda which sits at below 20m AOD. The Bellewstown Hills lie approximately 15km to the south.

To the east and north of the site, landform falls towards the wider coastal plain that naturally sits at a lower elevation. Within this comparative lowland context, local high points to 100m AOD provide a varied character.

The area is drained in many directions by streams and rivers, the most notable being the River Boyne, which flows through Drogheda to the south and out into the sea east of Mornington.

### 12.3.3 Vegetation and Land use

Whilst the site forms part of a productive, rural landscape, that is underpinned by agricultural activities, it has a great deal of variety in terms of vegetation cover and land uses.

In comparison to the lowland areas present in the wider landscape which are defined by a mix of arable and pastoral agricultural use, the site, together with the more elevated parts of the landscape within the study are, are defined primarily by pastoral use. Due to the comparatively shallow soils, in several locations, this pastoral context has been given over to grasslands and scrubland.

At an immediate level, the site is located adjacent to Kilsaran Quarry, a large stone quarry that generates a wide range of aggregates, concrete products, and fill materials. This quarry is bound by commercial forestry and areas of rough grassland/scrub.

Commercial forestry is an occasional but not defining feature of the wider landscape. Large areas of woodland and vegetation within valleys, together with some striking and extensive

areas of tree cover at New Mellifont, Ballymakenny, and Piperstown, contribute to a well treed character, and generates a varied visual experience within the landscape.

In some parts of the wider landscape such as the lower coastal plains, agricultural landcover is bound by mixed hedgerow vegetation, and has a comparatively more open character, due to a comparatively reduced tree cover.

The wider landscape is important from an archaeological perspective, and contains many features of archaeological importance that contribute to a tangible sense of time depth. The complex of Round Tower, Crosses and Church at Monasterboice (c. 3.5km to the southwest of the site) is recognised as a National Monument and included in the itinerary of tourists who visit the Boyne Valley. Indeed, the Boyne Valley is internationally recognised for its assemblage of archaeological and historic features, which in the context of the Study Area includes the village of Slane and its Castle (15.7km to the south east), Old Mellifont Abbey (8.6km to the south east), and most notably Brú Na Bóinne (10.1km to the south west). Brú Na Bóinne is an ancient monument complex and ritual landscape dominated by the passage tombs of Newgrange, Knowth, and Dowth. It is recognised as one of the world's most important neolithic landscapes, and is designated a World Heritage Site.

In terms of urban land uses, Drogheda (6.7km to the south) is the most notable settlement in the Wider Study Area. Other notable settlements include Termonfeckin (c. 6.1km southeast), Dunleer (c. 4km northwest), Clogherhead (c.7km east), Monasterboice (c. 3km southwest), and Collon (c. 7.5km southwest). Beyond these more intense areas of settlement, there is a reasonably dispersed rural population, inhabiting crossroad settlements and linear clusters of dwellings along local roads and surrounding the aforementioned settlements.

Housing in the immediate vicinity of the site tends to follow a linear pattern, dispersed along the road network. These rural dwellings are a mixture of single and two storey and tend to be orientated facing the road along which they are situated.

Other notable anthropogenic land uses within the Study Area and its wider surrounds include the major transport corridor of the M1 which passes to the west of the site (within 2km). The N2, N33 and N51 National Roads pass through the Study Area. The N2 passes the site in a general north/south direction c. 7.7km to the west. The N51 passes through the southwest quadrant of the Study Area near Drogheda, in a southwest to northeast direction c. 6.9km away. The N33 connects the M1 to the N2, and is approximately 8km to the northwest of the site.

The Belfast to Dublin train line runs north-south through the landscape to the east of the site within approximately 1.8km at its closest point. Given the undulating nature of the landscape, it passes through the landscape in a series of cuttings.

The Regional Roads R132 and R170 pass the site in north/south and west/east directions at distances of c. 1.4km and 2.5km respectively. The nearest road to the site boundary is the L2275 local road which passes the site to the east at a distance of approximately 800m. Other unnamed local roads service the site as part of the local road network in the surrounding area.

There are a small number of turbines (6nr) present in the Wider Study Area, five of these being located between 11.4km and 12.9km to the west, and a single turbine around 17km to the west. In terms of other vertical elements in the Wider Study Area, it is noted that Mount Oriel has a number of radio and telecommunications masts, c. 9.4km to the west.

### 12.3.4 Landscape Policy Context and Designations

#### 12.3.4.1 The Department of Environment, Heritage and Local Government Wind Energy Development Guidelines (2006/2019 revision)

The WEDG provide guidance on wind farm siting and design criteria for a number of different landscape types. The site of the proposed Development is considered to be located within a landscape setting that is more consistent with the 'Hilly and Flat Farmland' landscape type than other landscape types from the Wind Energy Development Guidelines, the key characteristics of which are outlined in the guidance as follows:

- 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.

Of wind energy development in this type of landscape the guidelines state:

*"The essential key here is one of rational order and simplicity, as well as respect for scale and human activities. The predominance of field pattern introduces an organised patchwork landcover structure that not only prompts a similar response in the siting and design of wind energy developments, but also provides a spatial structure and rhythm. Although hilly and*

*flat farmland type is usually not highly sensitive in terms of scenery, due regard must be given to houses, farmsteads and centres of population."*

Key recommendations for siting and design within the 'Hilly and Flat Farmland' landscape type are set as follows:

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."*

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."*

The examples identified in the guidance of appropriate and inappropriate types of spatial extent outline that a small spatial extent with a grid or linear layout is deemed appropriate in this landscape type, considering the field patterns typically present.

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."*

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 possibly on a flat landscape a grid layout would be aesthetically acceptable."*

Height

*"Turbines should relate in terms of scale to landscape elements and will therefore tend not to be tall. However, an exemption 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."*

Cumulative

*"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 development is usually acceptable."*

### 12.3.4.2 Louth County Development Plan (2021-2027)

The site is located within the administrative area of Louth County Council and is therefore subject to the land use policies and objectives of the Louth County Development Plan (LCDP) 2021-2027. The LCDP provides a framework to guide future development within the county, and accordingly contains many policy objectives that deal with the strategic planning issues.

Chapter 8 of the LCDP contains policy objectives relating to Natural Heritage, Biodiversity and Green Infrastructure. Areas of relevance to this LVIA are presented below.

**Landscape Character Assessment**

At section 8.10, the LCDP refers to a Landscape Character Assessment that was compiled in 2002, which divides the county into 9 different Landscape Character Areas (LCAs). The site is entirely within the 'Uplands of Collon and Monasterboice' LCA which is classified as having Regional Importance.

The key characteristics of this LCA are as follows;

- *"Elevated plateau which offers views in each compass direction.*
- *The landscape in the Brownstown and Carricknashanagh areas display small fields with and loose stone wall elements similar to west of Ireland landscapes.*
- *Area is very rich in archaeological monuments.*
- *The area continues to remain a source for public water supplies.*

- *Area has two proposed N.H.A.s.*
- *Demand for isolated housing continues and this is exacerbated by the intricate network of roads in the area.*
- *Number of masts at Mount Oriel.*
- *Some fine examples of woodlands in the area."*

The key values of this landscape are as follows;

- *'Landscape quality is quite high with a variety of landcover elements*
- *The elevation of the area allows for a large number of views which have a high scenic quality value*
- *Rich in archaeological features, notably the round tower, high crosses and churches at Monasterboice.*
- *The Fieldstown, Brownstown, Carricknashanagh areas offer a sense of tranquillity and isolation close to Drogheda.*
- *New Mellifont Cistercian Monastery with its large estate, the greater part of which is a proposed NHA.'*

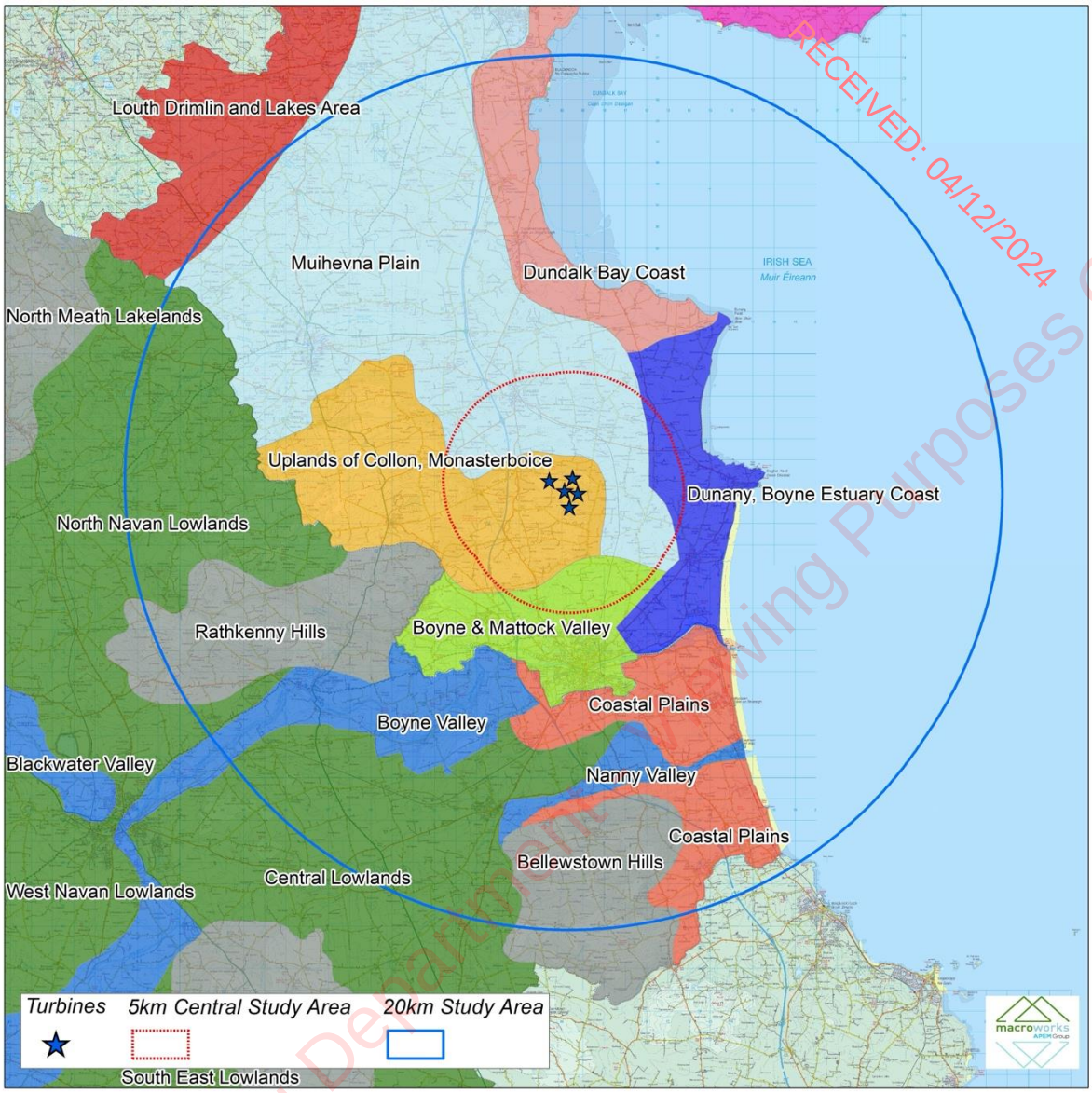


**Figure 12.3 - Map of Landscape Character Areas within County Louth and County Meath in relation to the Proposed Development site (see Volume III for larger scale map).**

The Wider Study Area contains areas covered by the Dundalk Bay Coast LCA (6.3km to the north and of Regional importance), Muirhevna Plain LCA (1km to the north and east and of Local importance), the Dunany to Boyne Estuary Coast LCA (3.5km to the east and of Regional importance), and the Boyne and Mattock Valley LCA (2.8km to the south and of National importance). Effects to the landscape character of these areas will occur indirectly.

The Dundalk Bay Coast LCA key characteristics are as follows:

- *Land is relatively flat and not higher than 20m O.D.*
- *Seashore is mainly of marsh at the northern end, which gives way to sandy beaches in the south. Coastal erosion is evident.*

- *Well-defined hedge rows with larger fields. Some examples of old Country house estates with broadleaf planting.*
- *Main settlements are Blackrock, Dromiskin, Castlebellingham, Kilsaran and Annagassan.*
- *Motorway to the west has reduced the traffic along the old N1*
- *The area is rich in archaeological features*
- *Dundalk Bay is a designated Special Protection Area (SPA)*
- *Isolated housing is very evident.*

The Muirhevna Plain LCA key characteristics are as follows:

- *Serves as a major traffic corridor between North and South.*
- *Extensive plain located between the Carlingford/Slieve Gullion mountain complex and the uplands of Collon and Monasterboice.*
- *Rich soils are conducive to extensive agricultural practices both in crop and animal production.*
- *Robust hedgerows give a sense of enclosure.*
- *The nature of the topography has had the effect that a number of small meandering rivers drain the flat landscape.*
- *Contains a number of fine broadleaf wooded areas around country houses.*
- *Area is rich in archaeological features.*
- *Renowned for its mythological past leading to the definition of the Táin Trail.*
- *Isolated housing is very evident especially in the eastern half.*

The Dunany to Boyne Estuary Coast LCA key characteristics are as follows:

- *Landscape is flat and undulating with the exception of the Head at Clogherhead and Castlecoo Hill.*

- *Clogher Head is a dominant promontory when viewed from the west, south and east (part of which is a proposed N.H.A).*
- *Area has an extensive sand beach for practically its entire coastline with some dune formations, which are subject to tidal, wind and traffic erosion.*
- *Area has one S.A.C. viz. the Boyne Coast and Estuary (1957) of which the Estuary is also an S.P.A.*
- *Field patterns vary from being reasonably large on the flat landscape to being smaller around the raised ground of the Almondstown/Glaspistol area.*

The Boyne and Mattock Valley LCA key characteristics are as follows:

- *Land tends to slope southward presenting panoramic views of Drogheda, the Coast and the plains of Meath. This landscape area should be considered as one which includes the southern side of the Boyne as defined by Meath Co. Council.*
- *Noted for its archaeological, historical and landscape values.*
- *New motorway Boyne Bridge has already become a dominant landscape icon. New interchanges will attract new commercial and industrial development.*
- *Drogheda town is recognised as being within the commuter belt for the greater Dublin region where in-migration is expected to increase at an even greater pace than in the past.*
- *Hinterlands of Drogheda are subject to pressures for further isolated housing development, mainly generated from within the town itself.*
- *The area is quite extensively covered with broadleaf trees and fine hedgerows.*
- *Popular Tourist destination particularly for bus tours from Dublin and beyond.*
- *Disused quarries tend to degrade the landscape qualities."*

Chapter 8 of the LCDP contains policy objectives relating to Natural Heritage, Biodiversity and Green Infrastructure. Those considered of relevance include:

Policy Objective NBG 23

*"To ensure the preservation of the uniqueness of a landscape character type by having regard to its character, value and objectives in accordance with national policy and guidelines and the Louth Landscape Character Assessment and by ensuring that new development meets high standards of siting and design and does not unduly damage or detract from the character of a landscape or natural environment. "*

Policy Objective NBG 24

*"To ensure development reflects and, where possible, reinforces the distinctiveness and sense of place of the landscape character types including the retention of important features or characteristics, taking into account the various elements, which contribute to their distinctiveness such as scenic quality, habitats, settlement pattern, historic heritage and land use. "*

Policy Objective NBG 25

*"Where appropriate, require that landscape and visual impact assessments prepared by suitably qualified professionals be submitted with development applications, which may have significant impact on landscape character areas, especially in highly sensitive areas "*

**Trees, woodlands, and hedgerows**

The Wider Study Area contains a variety of vegetative cover, with the descriptions of character for both the Central and Wider Study Areas citing the woodlands and hedgerows that pervade the agricultural landscape, contain river valleys, and form the setting to formal estates throughout the Study Area. In terms of the latter, many of the large woodlands that occur throughout the Study Area relate to these large estates. In more elevated locations, such as the locality of the site and Kilsaran Quarry, areas of upland pastoral fields are interspersed with areas of scrub and grasslands. Conversely, in more coastal locations such as the northern part of the Wider Study Area, vegetation cover is comparatively modest, with coastal scrub becoming prevalent in places.

In addition to the natural vegetation cover, and that which occurs within the large estates and throughout the agricultural landscape, the landscape also contains large blocks of commercial conifer forestry (particularly relevant in the context of the proposed development), as well as linear belts of planting adjoining transport corridors and surrounding urban development.

The variety of vegetation cover throughout the Study Area generates enclosure in many locations and contributes to a landscape experience that is highly variable.

At section 8.11, the LCDP refers to 'Trees, Woodlands and Hedgerows' and highlights the important role that trees and woodlands play. It states that three would be a presumption against the removal of trees and hedgerows, but that where this is unavoidable, replacement would be required. The following Policy Objective is considered of relevance:

Policy Objective NBG 31

*"Where in exceptional circumstances, trees and or hedgerows are required to be removed in order to facilitate development, this shall be done outside nesting season and there shall be a requirement that each tree felled is replaced at a ratio of 10:1 with native species and each hedgerow removed is to be replaced with a native species. In Drogheda and Dundalk, replacement trees will be required at a ratio of 5:1 where the removal of trees is required in order to facilitate development."*

It also identifies 'Trees and Woodlands of Special Amenity Value'. Whilst there are many that fall within the Wider Study Area, it is noted that trees located at Piperstown House lie in close proximity to the Proposed Development (approximately 650m to the southeast of the turbines at their closest). This vegetation is identified under reference TWSAV132. This vegetation will not be directly impacted by the Proposed Development, where the following Policy Objective would be considered of relevance:

Policy Objective NBG 30

*"To protect trees and woodlands of special amenity value. Review and where appropriate make Tree Preservation Order(s) in relation to trees of special amenity value."*

**Areas of Outstanding Natural Beauty and Areas of High Scenic Quality**

At section 8.12, the LCDP refers to 'Environment and amenities', and highlights both the Areas of Outstanding Natural Beauty (AONB), and Areas of High Scenic Quality (AHSQ) across the county.

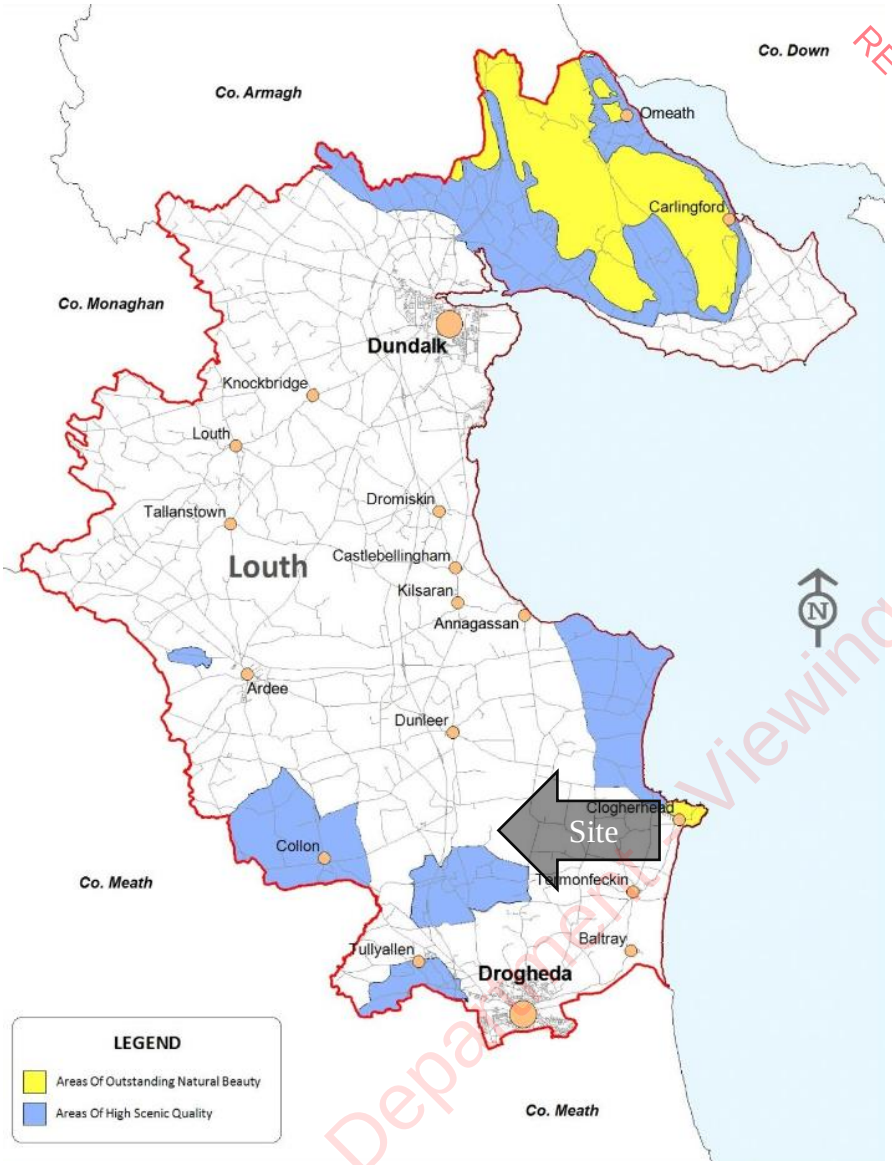


**Figure 12.4 - Map of AONBs and AHSQs within County Louth in relation to the Proposed Development site.**

AONBs are highlighted for protection because of their unspoiled natural landscape, special character and spectacular scenic quality. There are two distinct areas covered by AONB designation, the 'Carlingford and Feede Mountains' (outside of the Study Area), and the 'Clogherhead and Port Oriel' AONB. The LCDP describes this as:

*"The second AONB is located at Clogherhead and encompasses Port Oriel and the surrounding headland. Although less rugged and remote than the Carlingford and Feede Mountains, this area nevertheless, contains equally spectacular views eastwards to the Irish Sea, southwards towards the Boyne Estuary and County Meath and northwards over Dundalk Bay to the Carlingford and Mourne Mountains."*

It is important to note that whilst the area of landscape that falls within the 'Clogherhead and Port Oriel' AONB is considered sensitive, this area of landscape is located 7km to the

west at its nearest point, and that around one third of this area falls outside of the ZTV pattern. As outlined in the description of character, the scenic qualities of this landscape draws on the coastal views north, south and east, rather than directly towards the site.

The following Policy Objective is considered of relevance:

Policy Objective NBG 36

*"To protect the unspoiled natural environment of the Areas of Outstanding Natural Beauty (AONB) from inappropriate development and reinforce their character, distinctiveness and sense of place, for the benefit and enjoyment of current and future generations."*

AHSQs are highlighted for protection because of their scenic value. Whilst the site does not fall within an AHSQ, it is located in close proximity and to the north of AHSQ 2 – Monasterboice. Other areas in the Wider Study Area around Collon, west of Drogheda, and then covering the coastal landscape north of Clogherhead, also fall within the AHSQ designation.

The following Policy Objective is considered of relevance:

Policy Objective NBG 37

*"To protect the unspoiled rural landscapes of the Areas of High Scenic Quality (AHSQ) from inappropriate development for the benefit and enjoyment of current and future generations."*

**Views and Prospects of Special Amenity Value**

Section 8.12 outlines 'Views and Prospects of Special Amenity Value'. In the 20km Study Area, there are 29nr, albeit these vary in terms of their orientation from the site.

These are discussed in more detail as part of the visual baseline, where a critical analysis of their relevance in relation to the Proposed Development is undertaken. However, the following Policy Objective is considered of relevance:

Policy Objective NBG 38

*"Protect and sustain the established appearance and character of views and prospects listed in Tables 8.14 – 8.18 of this Plan that contribute to the distinctive quality of the landscape, from inappropriate development."*

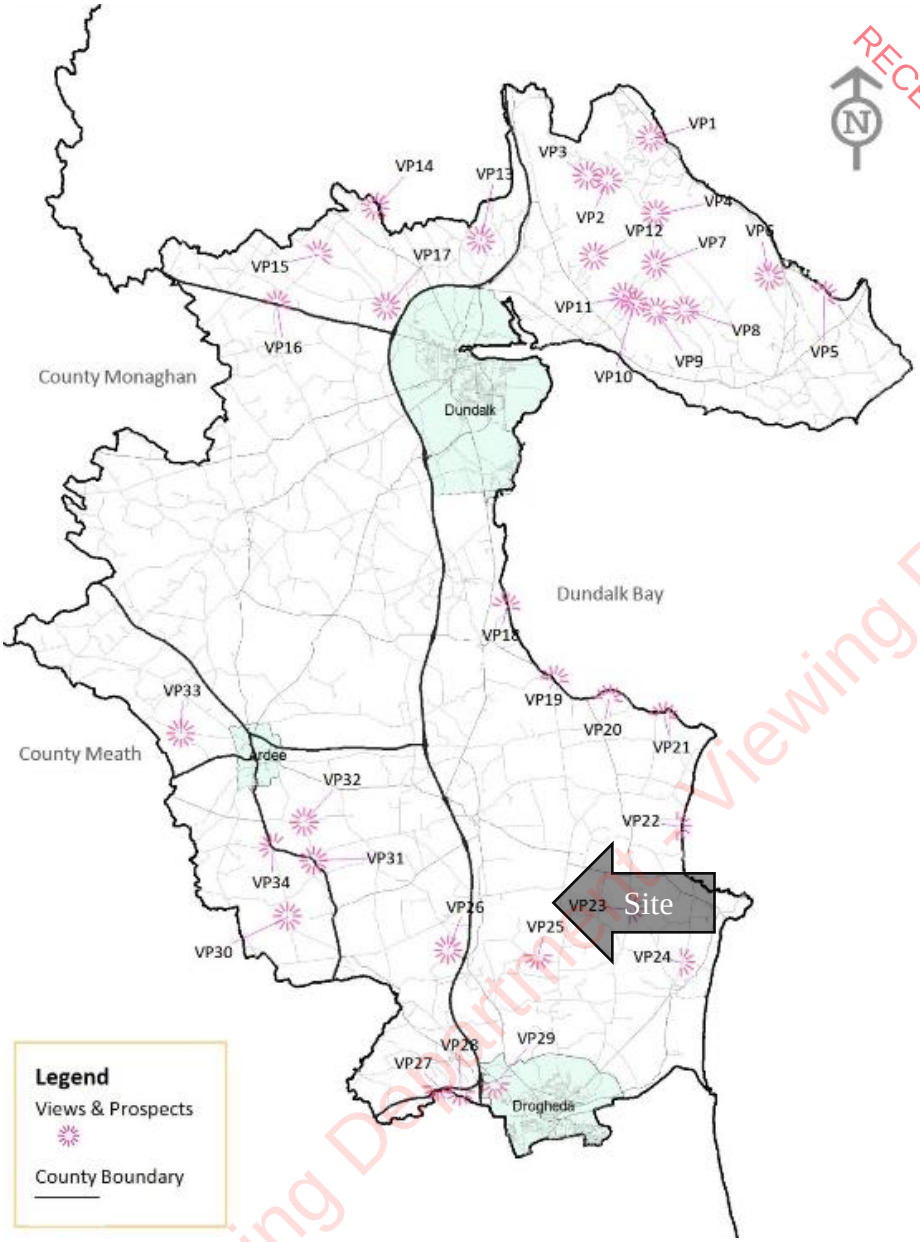


**Figure 12.5 - Map of Views and Prospects of Special Amenity Value within County Louth in relation to the Proposed Development site.**

### Scenic routes

At section 8.13, the LCDP refers to 'scenic routes' that are highlighted for protection because of their amenity and tourism value. Within the Study Area there are 7 (seven), and these too vary in terms of their relationship with the Proposed Development. Again, these are discussed in more detail as part of the visual baseline, where a critical analysis of their relevance in relation to the Proposed Development is undertaken. The following Policy Objective is considered of relevance:

Policy Objective NBG 40

*"To prohibit inappropriate development which would interfere with or adversely affect the Scenic Routes as identified in Table 8.19 and illustrated on Map 8.20."*

**Wind Energy**

Chapter 10 of the LCDP contains policy objectives relating to Infrastructure and Public Utilities. At section 10.6, the LCDP presents a map indicating 'areas suitable for Wind Development'. The Site straddles areas defined as 'Open to Consideration' and 'Preferred Areas'. The following Policy Objective is considered of relevance:

Policy Objective IU 56

*"To encourage the development of wind energy, in accordance with Government policy and guidance and the 'Wind Energy Development Guidelines' (2006) or any revisions thereof which may be issued during the lifetime of the Plan."*

Policy Objective IU 57

*"To facilitate the development of wind energy in an environmentally sustainable manner ensuring proposals are consistent with the landscape preservation objectives of the Plan, the protection of the natural and built environment and the visual and residential amenities of the area."*

Policy Objective IU 58

*"To promote the location of wind farms and wind energy infrastructure in the 'preferred areas' as outlined on Map 10.1, to prohibit such infrastructure in areas identified as 'no-go areas' and to consider, subject to appropriate assessment, the location of wind generating infrastructure in areas 'open for consideration'."*

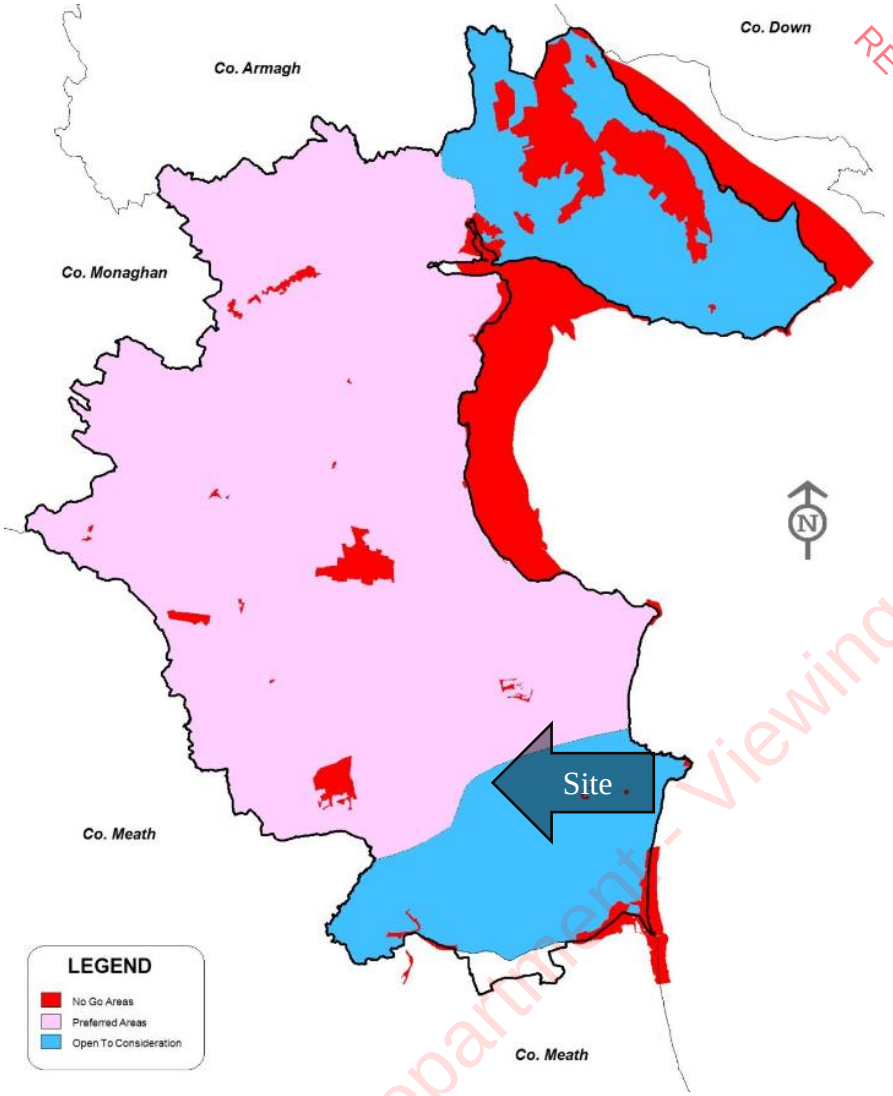


**Figure 12.6 - Map 10.1 of the LCDP – 'Areas suitable for Wind Development'.**

### 12.3.4.3 Meath County Development Plan (2021-2027)

Whilst the Proposed Development is wholly contained within County Louth, the western and southern sections of the Study Area fall within the administrative boundaries of County Meath, within 6.7km of the Site at its closest point. As such, the Meath County Development Plan (MCDP) 2021-2027 has been reviewed.

Policy objectives that are considered to be of particular relevance to landscape and visual issues are contained in Chapter 6 (Infrastructure Strategy), and Chapter 8 (Cultural and Natural Heritage Strategy) of the MCDP.

**Wind Energy Development**

Chapter 6 of the MCDP contains policy objectives relating to the Infrastructure Strategy. At section 6.15, the MCDP outlines the Council's support for the principle of wind energy subject to adherence to the provisions of the Landscape Characterisation Assessment of

the County and the Wind Energy Development Guidelines. The following Policy Objective is considered of relevance:



Policy Objective INF POL 41

*"To encourage the development of wind energy, in accordance with Government policy and having regard to the Landscape Character Assessment of the County and the Wind Energy Development Guidelines (2006) or any revisions thereof."*

**Landscape Character Assessment**

Chapter 8 of the MCDP contains policy objectives relating to Cultural and Natural Heritage. In section 8.17, the MCDP describes the landscape of the County and references the landscape character assessment carried out in 2007. The assessment divides the county into four main landscape character types. These are then subdivided into a further 20 geographically distinct Landscape Character Areas (LCAs).

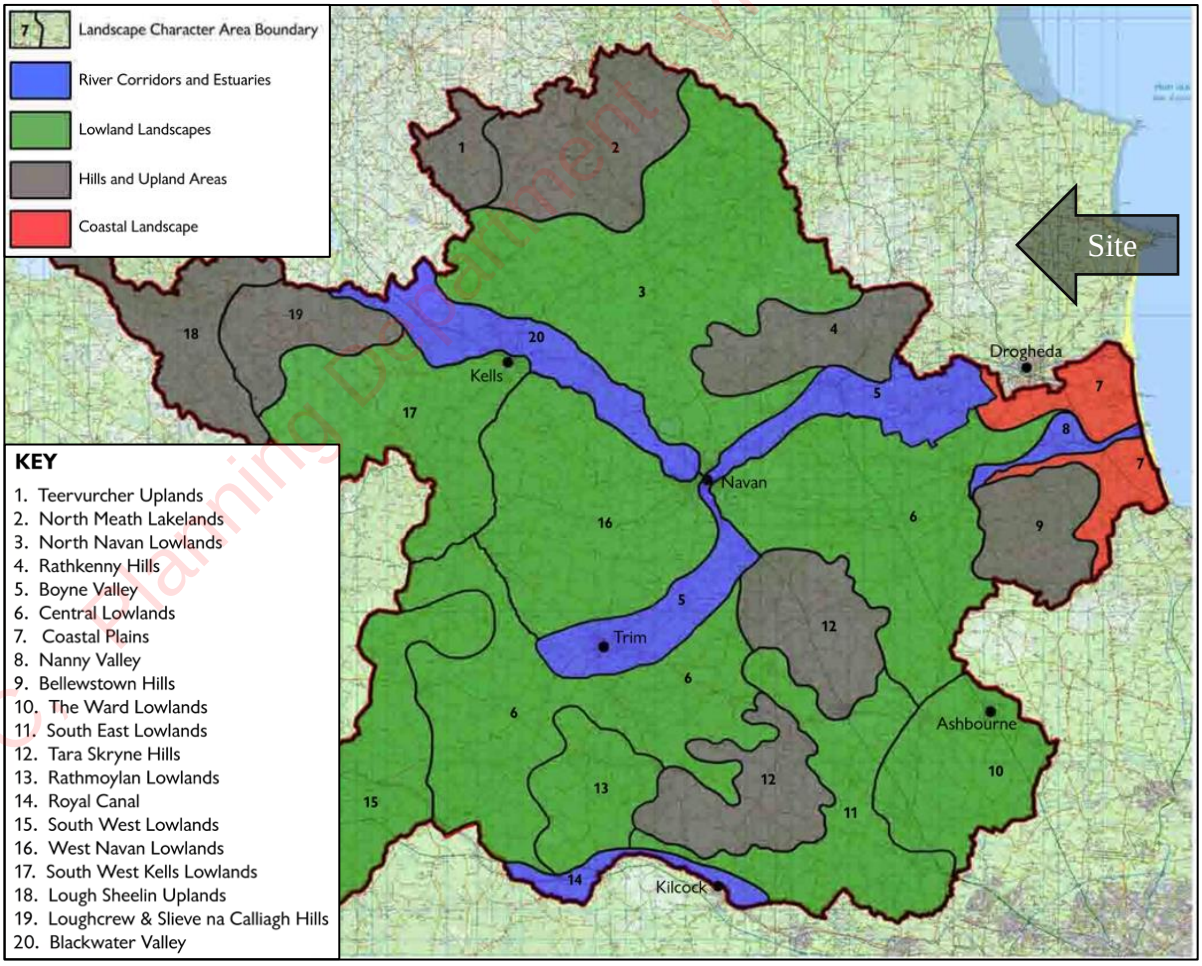


**Figure 12.7 - Meath LCA Map 1 showing approximate site location relative to landscape character areas and Landscape character types.**

Parts of the Wider Study Area fall within the 'River Corridors and Estuaries', 'Lowland Landscapes', Hills and upland areas' and 'Coastal Landscape LCTs. In addition, the following LCAs fall within the Wider Study Area:

- LCA 3 - North Navan Lowlands (Lowland Landscapes LCT);
- LCA 4 - Rathkenny Hills (Hills and Upland Areas LCT);
- LCA 5 - Boyne Valley (River Corridors and Estuaries LCT);
- LCA 6 - Central Lowlands (Lowland Landscapes LCT);
- LCA 7 - Coastal Plains (Lowland Landscapes LCT);
- LCA 8 - Nanny Valley (River Corridors and Estuaries LCT); and
- LCA 9 - Bellewstown Hills (Hills and Upland Areas LCT).

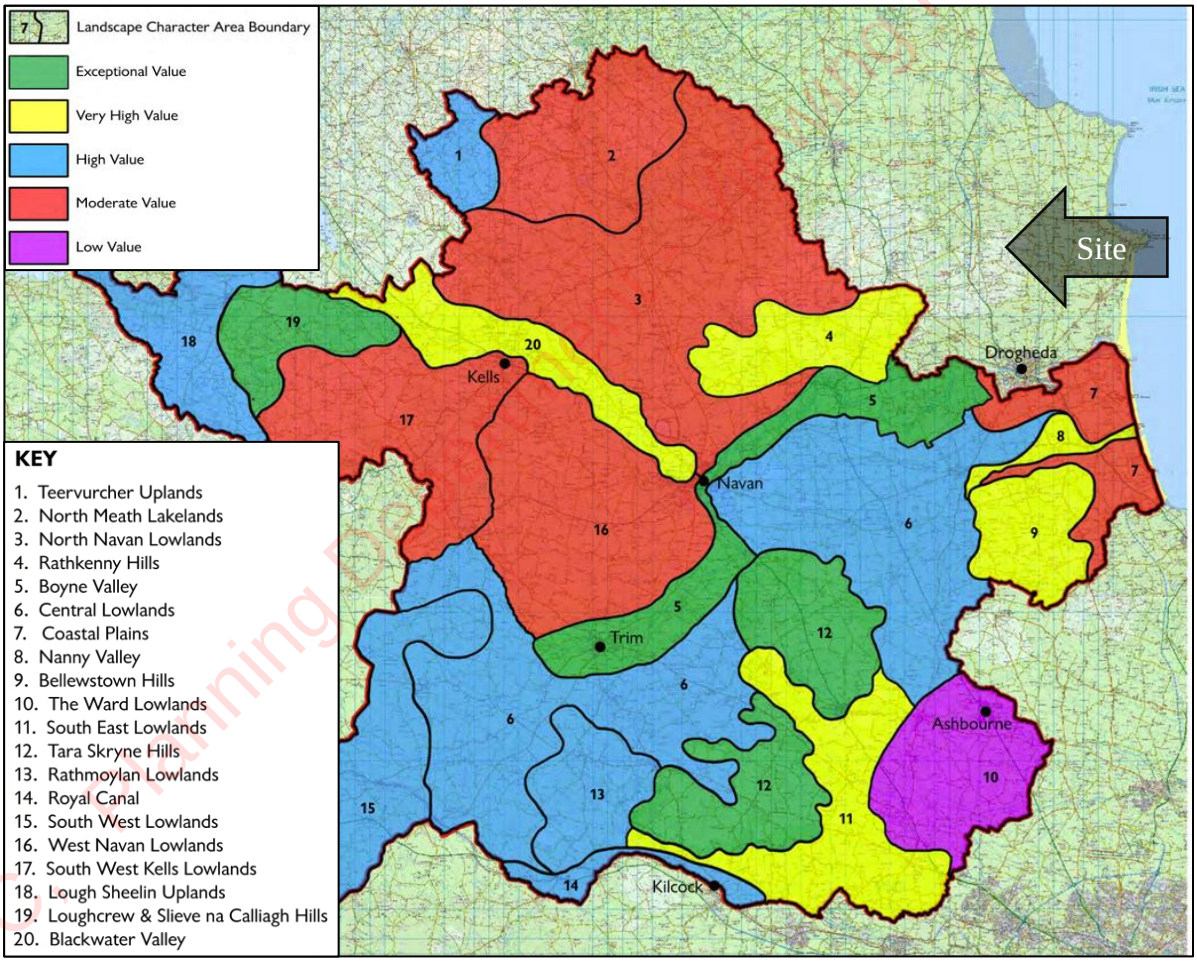


**Figure 12.8 - Meath LCA Map 2 showing approximate site location relative to landscape character areas and associated Landscape Value ratings.**

For each LCA, the assessment provides a landscape value categorisation ranging from 'Low' Value to 'Exceptional Value' (as shown in Figure 12.8). Of the LCAs that fall within the Study Area, it is acknowledged that these are of 'Moderate' and higher value, with the Boyne

Valley being identified as being of 'Exceptional' value, and LCA4, 8, and 9 being 'Very High' value.

Each LCA is also attributed a sensitivity, with all of those located along the interface between the administrative areas to the southwest of the site being categorised as having 'High' sensitivity.

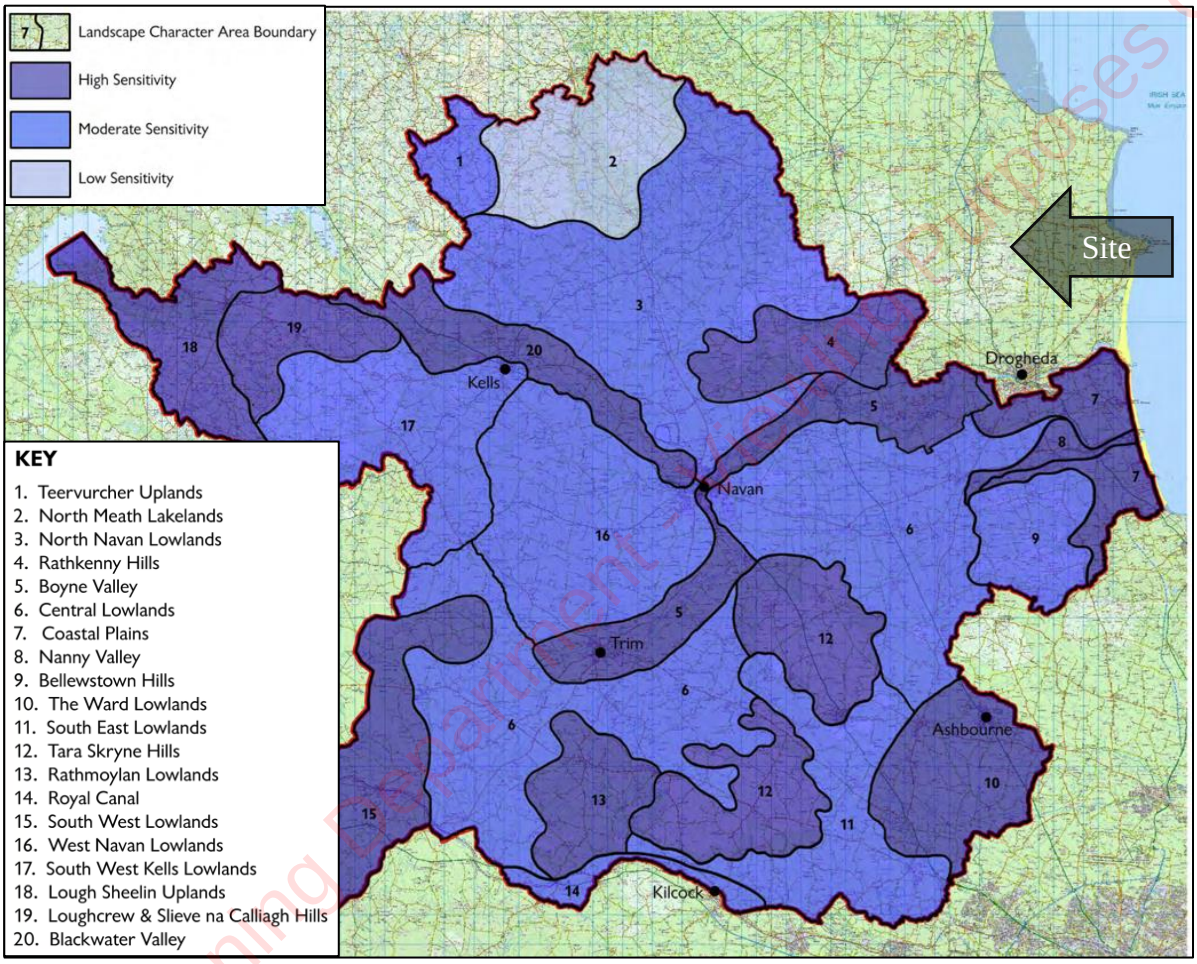


**Figure 12.9 - Meath LCA Map 3 showing approximate site location relative to areas of sensitivity.**

Whilst the Landscape Character Assessment also indicates the potential capacity for various development types, it is noted that this judgment pertains more to the capacity of that identified area of landscape to various types of development, rather than to developments that occur in the distant landscape which may indirectly influence character as a result of visibility. The following Policy Objectives are considered of relevance:

Policy HER POL 52:

*"To protect and enhance the quality, character, and distinctiveness of the landscapes of the County in accordance with national policy and guidelines and the recommendations of the*

*Meath Landscape Character Assessment (2007) in Appendix 5, to ensure that new development meets high standards of siting and design."*



Objective HER OBJ 49:

*"To ensure that the management of development will have regard to the value of the landscape, its character, importance, sensitivity and capacity to absorb change as outlined in Appendix 5 Meath Landscape Character Assessment and its recommendations."*

**Views and Prospects**

In section 8.18, the MCDP presents 'Views and Prospects' that are highlighted for protection because of their amenity and tourism value and their contribution to the quality of life. Designated Views and Prospects are indicated on Map 8.6 of the MCDP (**Figure 12.10** refers).

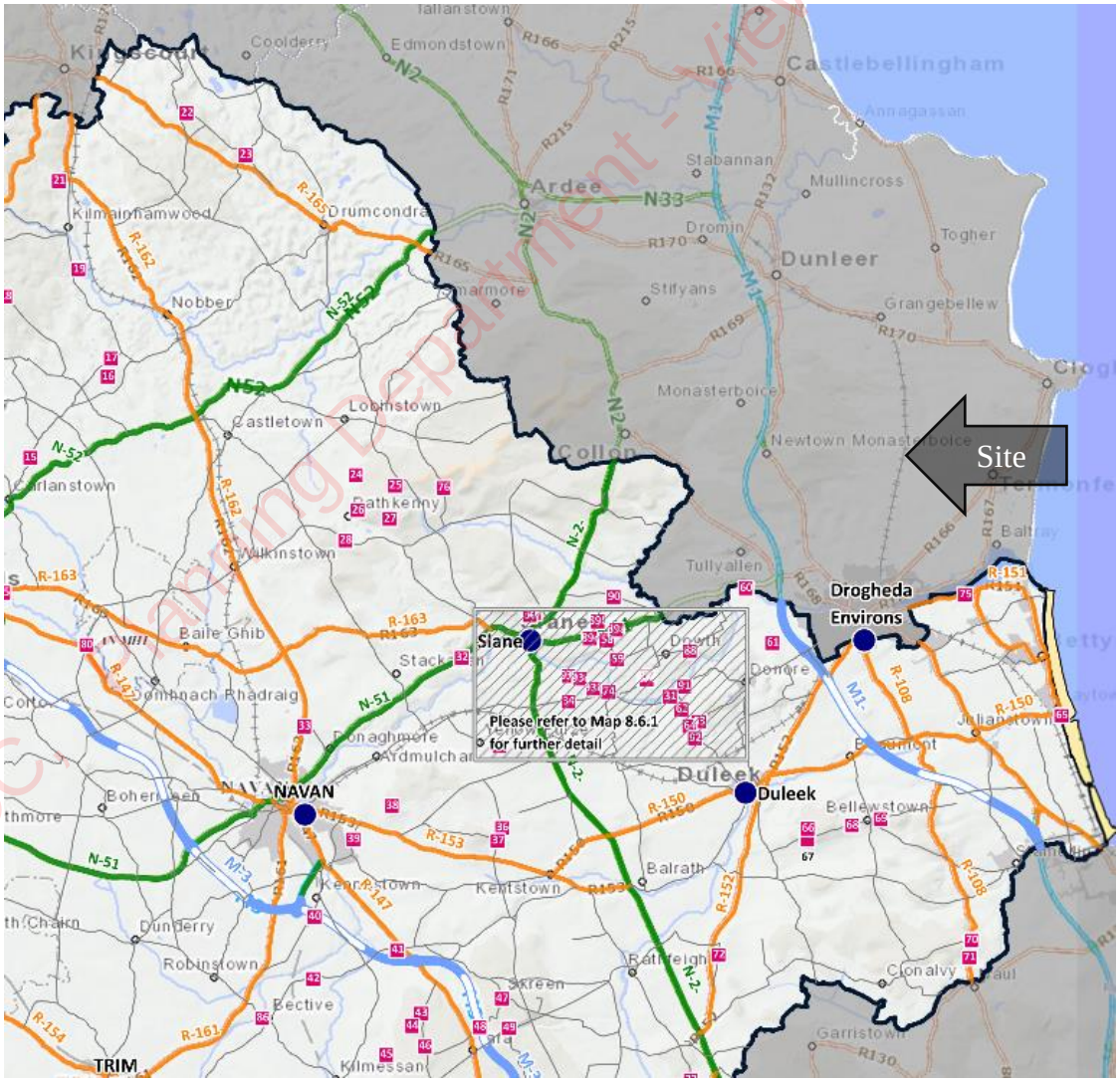


**Figure 12.10 - Meath LCA Map 8.6 showing Views and Prospects.**

Within the Study Area, there are 32 (thirty two) Designated Views and Prospects , and these vary in terms of their relationship with the Proposed Development with many orientating towards other parts of the landscape. Again, these are discussed in more detail as part of the visual baseline, where a critical analysis of their relevance to the Proposed Development is undertaken. The following Policy Objective is considered of relevance:

Objective HER OBJ 56:

*"To preserve the views and prospects listed in Appendix 10, in Volume 2 and on Map 8.6 and to protect these views from inappropriate development which would interfere unduly with the character and visual amenity of the landscape."*

### 12.3.5 Visual Baseline

#### 12.3.5.1 Zone of Theoretical Visibility (ZTV)

Only those parts of the Study Area that potentially afford views of the Proposed Development are relevant to this part of the assessment. Therefore, the first part of the visual baseline is establishing a ZTV and subsequently, identifying visual receptors on which to base the visual impact assessment.

A computer-generated ZTV map has been prepared to illustrate where the Proposed Development is potentially visible. The ZTV map is based solely on terrain data (bare ground visibility) and ignores features such as trees, hedges, or buildings, which may screen views. Given the nature of the topography in parts of the landscape, and the combined influence of successive layers of vegetation throughout the landscape, the main value of this form of ZTV mapping is to determine those areas from which the Proposed Development will not be visible, such as to retain a proportionate focus on locations where there is potential for visibility.

The following key points are illustrated by the 'bare-ground' ZTV map (Figure 12.11 refers).

**Within 10km**

Given the relative elevation of the site over the wider coastal plain to the northeast, and south, the 10km radius bare-ground (DTM) ZTV map indicates extensive theoretical visibility across this comparatively low-lying landscape. In certain locations, local high points (such as Castlecoo Hill (105m AOD) near Clogherhead, generate areas that are precluded from views. The ZTV pattern in this regard highlights the relatively flat / lightly undulating nature of the landscape to the northeast and south of the site.

Where the land rises more notably to the south (within around 4km), and to the west, (in the locality of Mount Oriel), the topography generates comparatively larger areas that are excluded from the ZTV pattern. Likewise, the relative elevation and incised nature of the valleys present (such as the Boyne Valley to the south), precludes theoretical visibility.

In general, theoretical visibility is comparatively reduced in the southwestern quadrant of the 10km Study Area.

Large portions of the surrounding settlements, namely Dunleer, Monasterboice, Termonfeckin, Clogherhead and Drogheda Town are afforded theoretical views of the Proposed Development.

**Over 10km**

Beyond 10km, the ZTV pattern remains relatively consistent, with extensive areas of theoretical visibility extending over the landscape to the north, east and south. The rolling hill range to the west of the site precludes visibility from large areas of landscape within the western portion of the Study Area, and the Bellewstown Hills and associated foothills, preclude visibility to large portions of the southern Study Area.

Whilst it is noted that the Boyne Valley substantively falls outside of the ZTV pattern, parts of its upper valley sides, fall within it. This includes the Brú Na Bóinne archaeological complex that includes Knowth, Dowth and Newgrange.

When comparing the ZTV that illustrates theoretical visibility of hub height and tip height, it is clear that much of the landscape that falls within the ZTV pattern to the southwest, and to the northwest relates to tip height only, meaning that the degree of visibility in these areas will be much more marginal than the ZTV suggests.

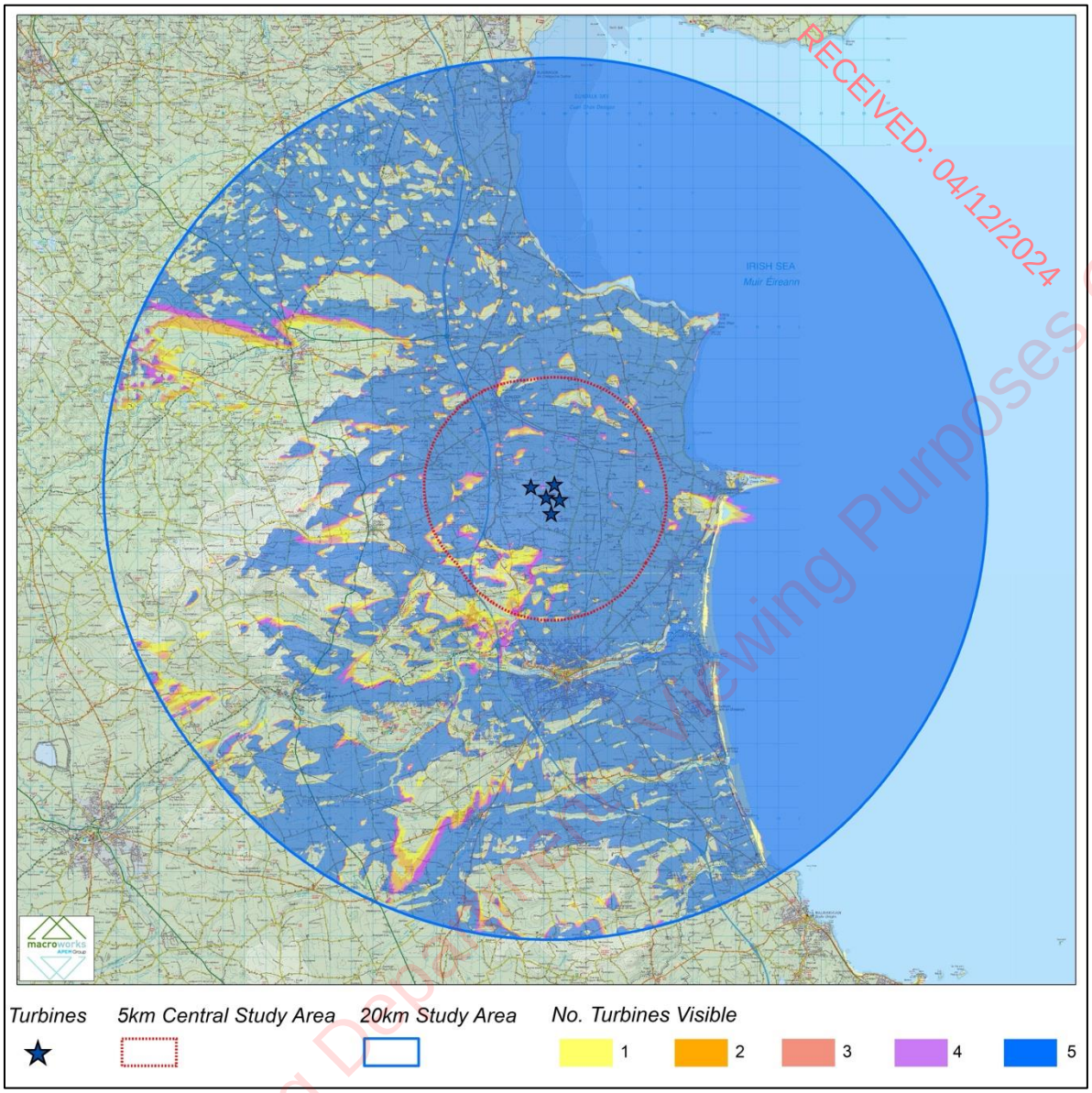


**Figure 12.11 - Bare-ground ZTV Map based on 180m tip height (See Volume III for larger scale map)**

The most important point to reiterate with respect to this 'bare-ground' ZTV map is that it is theoretical. Any development, including wind energy developments, has the potential to be screened by intervening or surrounding vegetation (e.g., roadside hedgerows), as well as buildings, walls, and embankments in proximity to the viewer, resulting in a much lesser degree of actual visibility. For these reasons, the ZTV represents a worst-case scenario of what is already an entirely theoretical projection.

### 12.3.6 Views of Recognised Scenic Value

Views of recognised scenic value are primarily indicated within County Development Plans in the context of scenic views/routes designations, but they might also be indicated on touring maps, guidebooks, roadside rest stops or on postcards that represent the area. The relevant scenic designations (views, prospects, and scenic routes) contained in the LCDP and the MCDP have been identified, and all of those that fall within the 20km Study Area have been identified in Table 12.6.

The number of these locations is numerous throughout the Study Area, and a critical analysis of these viewpoints was undertaken to determine their relevance to the assessment of visual effects. Where these fall outside the ZTV pattern, they have been discounted on the basis that the turbines have no potential to generate visual impacts.

As will be explained later in the assessment, Viewshed Reference Points (VRP's) have been used to study the landscape and visual impact of the proposed wind farm in detail. Those scenic designations that fall inside the ZTV pattern were investigated during fieldwork to determine whether actual views of the Proposed Development might be afforded. In some instances, the location offers limited potential for any visibility as a result of screening elements, and is therefore not considered to be of relevance to the LVIA. In other instances the primary aspect of view (identified in the LCDP and the MCDP) of relevance to the scenic designation, orientates away from the proposals. Where this is the case, the impact on the scenic view is not considered to be of primary relevance and visual effects are structured around other VRPs which are considered representative. Where visibility may occur and the location is considered helpful in understanding effects from parts of the landscape, a VRP has been selected for use in assessing visual impacts.

The analysis is presented in Table 12.6.

**Table 12.6 - Rational for selection of scenic designations within the relevant County Development Plans**

| Scenic View or Route Reference (CDP): | Relevance to visual impact appraisal | Represented herein by VRP No. |
|---|---|---|
| Louth County Development Plan (2021-2027) | | |
| VP18 Dromiskin - sea views across to Dundalk, Cooley and Mourne Mountains | **Not Relevant** – View orientated north and not in the direction of the site | VRP2 |
| VP19 North of Annagassan - sea views across to Cooley and Mourne Mountains | **Not Relevant** – View orientated north and not in the direction of the site | VRP2 |

| Scenic View or Route Reference (CDP): | Relevance to visual impact appraisal | Represented herein by VRP No. |
|---|---|---|
| VP20 Salterstown - sea views across to Dundalk Bay towards Cooley and Mourne Mountains | **Not Relevant** – View orientated north and not in the direction of the site | VRP2 |
| VP21 Corstown - sea views across to Dundalk Bay towards Cooley and Mourne Mountains | **Not Relevant** – View orientated north and not in the direction of the site | VRP2 |
| VP22 Lurganboy - sea views across to Dundalk Bay towards Cooley and Mourne Mountains | **Not Relevant** – View orientated east and not in the direction of the site. Views represented to understand visibility from coastal context. | VRP2 |
| VP23 Callystown to Clogherhead | **Not Relevant** – View orientated east and not in the direction of the site. Views towards the site represented. | VRP8 |
| VP24 Dardisrath towards coast and Clogherhead | **Not Relevant** – View orientated east and not in the direction of the site. Views towards the site represented. | VRP17 |
| VP25 Brownstown southwards over AHSQ towards Drogheda | **Not Relevant** – View orientated south and not in the direction of the site | VRP15 |
| VP26 Newtown Monasterboice towards Monasterboice Tower | **Relevant** – Potential for views | VRP13 |
| VP27 Townley Hall Nature Walk view of Battle of the Boyne site | **Not Relevant** –located outside of ZTV | - |
| VP28 Drybridge Escarpment view of Battle of the Boyne Site | **Not Relevant** –located outside of ZTV | - |
| VP29 Waterunder Plateau overview of Battle of the Boyne Site (Williamite Army) | **Not Relevant** – View orientated south and not in the direction of the site. Views north screened. | - |
| VP30 Mount Oriel | **Not Relevant** –located outside of ZTV | - |
| VP31 N2 Funshog | **Not Relevant** –located outside of ZTV | - |
| VP32 Millockstown | **Not Relevant** –located outside of ZTV | - |
| VP33 Townparks | **Not Relevant** – Views towards the site screened. | - |
| VP34 Anaglog | **Not Relevant** –located outside of ZTV | - |
| VP49 Views of the town from Millmount | **Relevant** – Potential for views | VRP19 |
| VP50 Views of the town from Ballsgrove | **Not Relevant** –located outside of ZTV | - |
| VP51 Views of Millmount from the West | **Not Relevant** –located outside of ZTV | - |
| VP52 Views of Millmount looking southward from the Town Centre | **Not Relevant** –located outside of ZTV | - |
| VP53 Views of the Boyne and the Loughboy Callows from Loughboy | **Not Relevant** –located outside of ZTV | - |
| VP54 Views of the Boyne East and West from vehicular and pedestrian bridges | **Not Relevant** –located outside of ZTV | - |

| Scenic View or Route Reference (CDP): | Relevance to visual impact appraisal | Represented herein by VRP No. |
|---|---|---|
| VP55 Views of the town from the Rathmullen Road | **Not Relevant** – Views likely to be substantively precluded by urban foreground. | - |
| VP56 Views of Millmount and the Presbytery from Donor's Green | **Not Relevant** –located outside of ZTV | - |
| VP57 Views of the railway viaduct from the town centre, the bridges along the Boyne and the Termonfeckin Road from the west | **Not Relevant** –located outside of ZTV | - |
| VP58 Mulladrillen Hill and Mullaghash from the Town Centre | **Not Relevant** –located outside of ZTV | - |
| VP59 Ardee Castle | **Not Relevant** –located outside of ZTV | - |
| VP60 Castleguard Motte | **Not Relevant** –located outside of ZTV | - |
| SR16 Coast Road, Dromiskin | **Relevant** – Potential for views | VRP1 |
| SR17 Townparks Ardee | **Not Relevant** –located outside of ZTV | - |
| SR18 Castlebellingham-Annagassan-Clogherhead-Termonfeckin | **Relevant** – Potential for views | VRP1, 2, 7, 17 |
| SR19 Baltray-Queensborough-Beaulieu | **Not Relevant** –located outside of ZTV | - |
| SR20 Slane Road, Townley Hall | **Not Relevant** –located outside of ZTV | - |
| SR21 King Williams Glen | **Not Relevant** – majority of route located outside of ZTV and is heavily enclosed by mature vegetation. | - |
| SR22 Mount Oriel (Collon-Belpatrick) | **Not Relevant** – majority of route located outside of ZTV and is heavily enclosed by mature vegetation. | - |
| Meath County Development Plan (2021-2027) | | |
| View 24 – County Road between Rathkenny and Parsonstown Demesne | **Not Relevant** –located outside of ZTV | - |
| View 25 - County Road between Horistown and Creewood I | **Not Relevant** –located outside of ZTV | - |
| View 26 - County Road between Rathkenny and Dremistown | **Not Relevant** –located outside of ZTV | - |
| View 27 - County Road between Horistown and Creewood II | **Not Relevant** –located outside of ZTV | - |
| View 28 - County Road between Rathkenny cross roads and Sallygarden cross roads | **Not Relevant** –located outside of ZTV | - |
| View 29 – Car park at Hill of Slane | **Relevant** – Potential for views | VRP21 |
| View 30 – Hill of Slane | **Relevant** – Potential for views | VRP21 |

| Scenic View or Route Reference (CDP): | Relevance to visual impact appraisal | Represented herein by VRP No. |
|---|---|---|
| View 31 – County Road between Boyne Canal and Roughgrange | **Not Relevant** –located outside of ZTV | |
| View 32 – At Cross off county road to north of N51 | **Not Relevant** –located outside of ZTV | - |
| View 34 – On local road L1600-28 between McGruder's Cross and Newtown/Rosnaree | **Relevant** – Potential for views | VRP23, 24 |
| View 35 - County Road between Beaupark and Painestown | **Not Relevant** –View orientated north west in opposite direction to the site | VRP23 |
| View 58 – County Road between N51 and Knowth | **Not Relevant** –View orientated south and not in the direction of the site | VRP23 |
| View 59 – Knowth tumulus | **Relevant** – Potential for views | VRP23 |
| View 60 – Obelisk Bridge at Oldbridge | **Not Relevant** –located outside of ZTV | - |
| View 61 - Hill at Graveyard at Sheephouse | **Relevant** – Potential for views | VRP22 |
| View 62 - County road between Duleek and Boyne Canal I | **Relevant** – Potential for views, albeit view orientated to north west | VRP22, 23, 24 |
| View 63 - County road between Donore and Redmountain | **Relevant** – Potential for views, albeit view orientated to north west | VRP22, 23, 24 |
| View 64 - County road between Duleek and Boyne Canal II | **Relevant** – Potential for views, albeit view orientated to north west | VRP22, 23, 24 |
| View 65 – Laytown Strand | **Not Relevant** –located outside of ZTV | - |
| View 66 - County road between Duleek and Carnes East | **Not Relevant** – located at edge of ZTV pattern with negligible prospect of visibility at this distance | - |
| View 67 - County road between Carnes West and Carnes East | **Not Relevant** –located outside of ZTV | - |
| View 68 - County road between Bellewstown and Carnes East | **Not Relevant** – located at edge of ZTV pattern with no realistic prospect of visibility | - |
| View 69 – County road at Bellewstown | **Not Relevant** – located at edge of ZTV pattern with no realistic prospect of visibility | - |
| View 74 – Boyne Valley from Rosnaree House | **Not Relevant** –View orientated east and not in the direction of the site | VRP23 |
| View 75 – Boyne estuary view from coast road between Mornington and Drogheda (past Grammar School) | **Relevant** – Potential for views | VRP20 |
| View 76 – Rathkenny Hills View from Creewood in south eastward direction | **Not Relevant** –located outside of ZTV | - |
| View 87 a-d – Newgrange Passage Tomb | **Relevant** – Potential for views | VRP24 |
| View 88 – Dowth Passage tomb | **Relevant** – Potential for views | VRP22 |

| Scenic View or Route Reference (CDP): | Relevance to visual impact appraisal | Represented herein by VRP No. |
|---|---|---|
| View 89 a-c - Views towards Brú na Bóinne from NS1 | **Not Relevant** –View orientated south and not in the direction of the site | VRP22, 23, 24 |
| View 90 – West of Crossroads | **Not Relevant** –located outside of ZTV | - |
| View 91 – Views from Boyne Towpath | **Not Relevant** –located outside of ZTV | - |
| View 92 - Corballis | **Not Relevant** –located outside of ZTV | - |
| View 93a-c - Local Road L16002, 1.2km east of Fenner Cross Roads | **Not Relevant** –View orientated east and not in the direction of the site | VRP22, 23, 24 |



#### 12.3.6.1 Centres of Population and Houses

The largest and most populated centre of population in the Study Area is Drogheda (6.7km to the south). Drogheda is an industrial and port town spanning the River Boyne. Due to its location on the Dublin-Belfast transport corridor, and its proximity to Dublin (c. 50km), it is one of the largest towns in the Republic of Ireland.

Other notable settlements include Termonfeckin (c. 6.1km southeast), Dunleer (c. 4km northwest), Clogherhead (c.7km east), Monasterboice (c. 3km southwest), and Collon (c. 7.5km southwest). Beyond these more intense areas of settlement, there is a reasonably dispersed rural population, inhabiting crossroad settlements and linear clusters of dwellings along local roads and surrounding the aforementioned settlements.

As illustrated in Chapter 2, residential properties in the immediate vicinity of the site (within 2km) tend to follow a linear pattern, dispersed in small groupings/clusters along the road network. These dwellings comprise a mixture of single and two-storey buildings and tend to be orientated facing the road along which they are situated. Unlike more remote locations in the wider agrarian landscape which plays host to a well-distributed rural population, there is a relatively high concentration of properties along this localised road network, with over 400 properties identified within 2km of the turbines. This is unsurprising in the context of the site's proximity to the M1 road corridor.

#### 12.3.6.2 Transport Routes

As previously outlined, the M1 is the most significant transport route that passes the site to the west at a distance of just under 2km from the proposed site boundary.

The N2, N33 and N51 are the next most major routes within the Study Area. The N2 passes the site to the west in a general north/south direction at a distance of approximately 7.7km.

The N51 passes through the southwest quadrant of the Study Area near Drogheda Town, in a southwest to northeast direction and is located approximately 6.9km away. The N33 is located northwest, connecting the M1 to the N2, and is approximately 8km away from the proposed site.

Whilst the Wider Study Area contains numerous regional roads, the R132 and R170 are the most proximate roads, passing the site in north/south and west/east directions at distances of c. 1.4km and 2.5km respectively.

The nearest road to the site boundary is the L2275 local road which passes the site to the east at a distance of approximately 800m. This is typical of the network of local roads that pass through the wider agricultural landscape.

The Belfast to Dublin train line runs north-south through the landscape to the east of the site within approximately 1.8km at its closest point. Given the undulating nature of the landscape, it passes through the landscape in a series of cuttings.

#### 12.3.6.3 Tourism, Recreational and Heritage Features

As previously outlined, this landscape is recognised as playing host to numerous important archaeological and historic sites, many of which are important and highly frequented visitor sites. These include:

- Drumshallon Forge Heritage Centre c. 700m east;
- Monasterboice Church, Roundtower and High Cross c. 3.5km southwest;
- Athclare Castle c. 2.8km northwest;
- Barmeath Castle c. 3.4km northeast;
- Termonfeckin Castle c. 6.2km southeast;
- Melifont Abbey c. 7km west;
- Brú Na Bóinne (Newgrange, Knowth, Dowth) c. 10.1km southwest; and
- Hill of Slane c. 13km southwest.

Connecting these sites and others in the wider landscape, is the Boyne Valley Drive, a 225km signposted driving route. In the context of the Study Area, it follows the R132 and R168 between Drogheda and Collon via Monasterboice, before following the base of the Boyne Valley west of Drogheda, connecting to some of the historic sites interspersed along the valley, including most notably Brú Na Bóinne.

The Táin Trail Cycling and Touring Route is another recreational route that passes close to the site. It retraces the journey taken by Queen Medb and her armies from her palace at

Rathcroghan, Co. Roscommon (one of the Royal Sites of Ireland), across the heart of Ireland, to the Cooley Peninsula, Co. Louth, the home of the Donn Cúailnge. In the context of the Study Area, it routes north from Monasterboice to Dunleer along the R132, passing to the west of the site within approximately 1.4km, before turning southeast on the R170 towards Grangebellew (2.3km to the north), and then north towards Annagassan and Castlebellingham. Further to the west, it travels south through Ardee towards Kells.

In addition to these larger-scale recreational routes, there are a multitude of promoted walks and trails present within the Wider Study Area, with particular concentration in the Boyne Valley, including the Boyne Valley Greenway, Boyne Valley Camino, and walks from Townley. There are also numerous promoted circular walks along the coastal edge, such as at Clogherhead, Baltray, and Laytown, and this area of the landscape plays host to various other coastal golf courses, including Seapoint Golf Course, County Louth Golf Club, and Laytown and Bettystown Golf Club, all of which adjoin the mouth of the River Boyne.

#### 12.3.6.4 Identification of Viewshed Reference Points (VRP) as a Basis for Assessment

The results of the ZTV analysis provide a basis for the selection of VRP's, which are the locations used to study the landscape and visual impact of the proposed wind farm in detail. It is not warranted to include every location that provides a view of the Proposed Development as this would result in an unwieldy report and make it extremely difficult to draw out the key impacts arising from the project. Instead, a variety of receptor locations was selected that are likely to provide views of the proposed wind farm from different distances, different angles and different contexts.

The visual impact of a proposed development is assessed using up to 6 categories of receptor type as listed below:

- Key Views (from features of national or international importance);
- Designated Scenic Routes and Views;
- Local Community views;
- Centres of Population;
- Major Routes; and
- Amenity and heritage features.

Where a VRP might have been initially selected for more than one reason it will be assessed according to the primary criterion for which it was chosen. The characteristics of each receptor type vary as does how the view is experienced. These are described below.

**Key Views**

These VRPs are at features or locations that are significant at the national or even international level, typically in terms of heritage, recreation or tourism. They are locations that attract a significant number of viewers who are likely to be in a reflective or recreational frame of mind, possibly increasing their appreciation of the landscape around them. The location of this receptor type is usually quite specific.

**Designated Scenic Routes and Views**

Due to their identification in the County Development Plan, this type of VRP location represents a general policy consensus on locations of high scenic value within the Study Area. These are commonly elevated, long-distance, panoramic views and may or may not be mapped from precise locations. They are more likely to be experienced by static viewers who seek out or stop to take in such vistas.

**Local Community Views**

This type of VRP represents those people who live and/or work in the locality of the Proposed Development, usually within a 5km radius of the Site. Although the VRPs are generally located on local level roads, they also represent similar views that may be available from adjacent houses. The precise location of this VRP type is not critical; however, clear elevated views are preferred, particularly when closely associated with a cluster of houses and representing their primary views. Coverage of a range of viewing angles using several VRPs is necessary to sample the spectrum of views that would be available from surrounding dwellings.

**Centres of Population**

VRPs are selected at centres of population primarily due to the number of viewers that are likely to experience that view. The relevance of the settlement is based on the significance of its size in terms of the Study Area and/or its proximity to the Site. The VRP may be selected from any location within the public domain that provides a clear view either within the settlement or in close proximity to it.

**Major Routes**

These include national and regional level roads and rail lines and are relevant VRP locations due to the number of viewers potentially impacted by the Proposed Development. The precise location of this category of VRP is not critical and might be chosen anywhere along

the route that provides clear views towards the Site, but with a preference towards close and/or elevated views. Major routes typically provide views experienced whilst in motion and these may be fleeting and intermittent depending on screening by intervening vegetation or buildings.

**Tourism, Recreational and Heritage Features**

These views are often one and the same given that heritage locations can be important tourist and visitor destinations and amenity areas or walking routes are commonly designed to incorporate heritage features. Such locations or routes tend to be sensitive to development within the landscape as viewers are likely to be in a receptive frame of mind with respect to the landscape around them. The sensitivity of this type of visual receptor is strongly related to the number of visitors they might attract and, in the case of heritage features, whether these are discerning experts or lay tourists. Sensitivity is also heavily influenced by the experience of the viewer at a heritage site as distinct from simply the view of it. This is a complex phenomenon that is likely to be different for every site. Experiential considerations might relate to the sequential approach to a castle from the car park or the view from a hilltop monument reached after a demanding climb. It might also relate to the influence of contemporary features within a key view and whether these detract from a sense of past times. It must also be noted that the sensitivity rating attributed to a heritage feature for the purposes of a landscape and visual assessment, is not synonymous with its importance to the Archaeological or Architectural Heritage record.

The VRPs selected in this instance are set out in Table 12.7 and their location and orientation are shown on the Map in the photomontage booklet. They have all been selected based on relevant guidance and best practice.

**Table 12.7 - Outline description of selected Viewshed Reference Points (See Viewpoint Location Map – Figure 12.12)**

| VRP No. | Location | Representative of* | Distance to nearest turbine (km) | Direction of view |
|---|---|---|---|---|
| **VP1** | Scenic Route SR18 at Linns along R166 | DSR, MR | 10.6km (T2) | S |
| **VP2** | Scenic Route SR18 at Lurganboy along L2244 | DSR | 7km (T2) | SW |
| **VP3** | R170 at Skibbolmore, Dunleer | LCV, CP, MR, AH | 3.5km (T1) | SSE |
| **VP4** | Local road north of site at Rokeby | LCV | 0.9km (T2) | SW |
| **VP5** | Local road north of site at Stonehouse | LCV | 0.8km (T1) | SE |
| **VP6** | Local road west of site at Priest Town | LCV | 2.1km (T1) | E |

| VRP No. | Location | Representative of* | Distance to nearest turbine (km) | Direction of view |
|---|---|---|---|---|
| **VP7** | Clogherhead Hill | DSR | 8.4km (T4) | W |
| **VP8** | L2278 east of site at Garrolagh | DSR, LCV | 3.6km (T4) | W |
| **VP9** | The Brambles at Drumshallon, east of site | LCV | 0.9km (T4) | W |
| **VP10** | Drumshallon Forge Heritage Centre | LCV, AH | 0.9km (T4) | NW |
| **VP11** | Local road southwest of site at Kircock | LCV | 1.8km (T1) | ENE |
| **VP12** | Local road east of site at Piperstown | LCV | 1.1km (T5) | NE |
| **VP13** | Monasterboice Cemetery carpark | DSR, LCV | n/a (T1) | ENE |
| **VP14** | L2278 at Milltown | LCV | 3.3km (T4) | WNW |
| **VP15** | Local road at Fieldstown | LCV | 1.4km (T5) | NNE |
| **VP16** | Ballymakenny Road | LCV | 1.8km (T5) | NNW |
| **VP17** | Scenic Route SR18 at Duffsfarm along R166 | DSR | 6.5km (T4) | WNW |
| **VP18** | Irish Military Museum at Starinagh | DSR, LCV, AH | 7.3km (T1) | ENE |
| **VP19** | Local road at Yellowbatter, north of Drogheda | LCV | 5.7km (T5) | N |
| **VP20** | Scenic View VP75 along R151 | LCV, AH | n/a (T5) | NW |
| **VP21** | Hill of Slane | KV, DSR, AH | 14.2km (T1) | NE |
| **VP22** | Dowth Passage Tomb | KV, DSR, AH | 10.8km (T5) | NE |
| **VP23** | Knowth Passage Tomb | KV, DSR, AH | 12.8km (T5) | NE |
| **VP24** | Newgrange Passage Tomb | KV, DSR, AH | 12.7km (T5) | NE |
| **VP25** | R132 at Roxborough | LCV, MR, AH | 1.5km (T1) | E |

*Key Views (KV) / Designated Scenic Routes and Views (DSR) / Local Community views (LCV) / Centres of Population (CP) / Major Routes (MR) / Amenity and heritage features (AH)

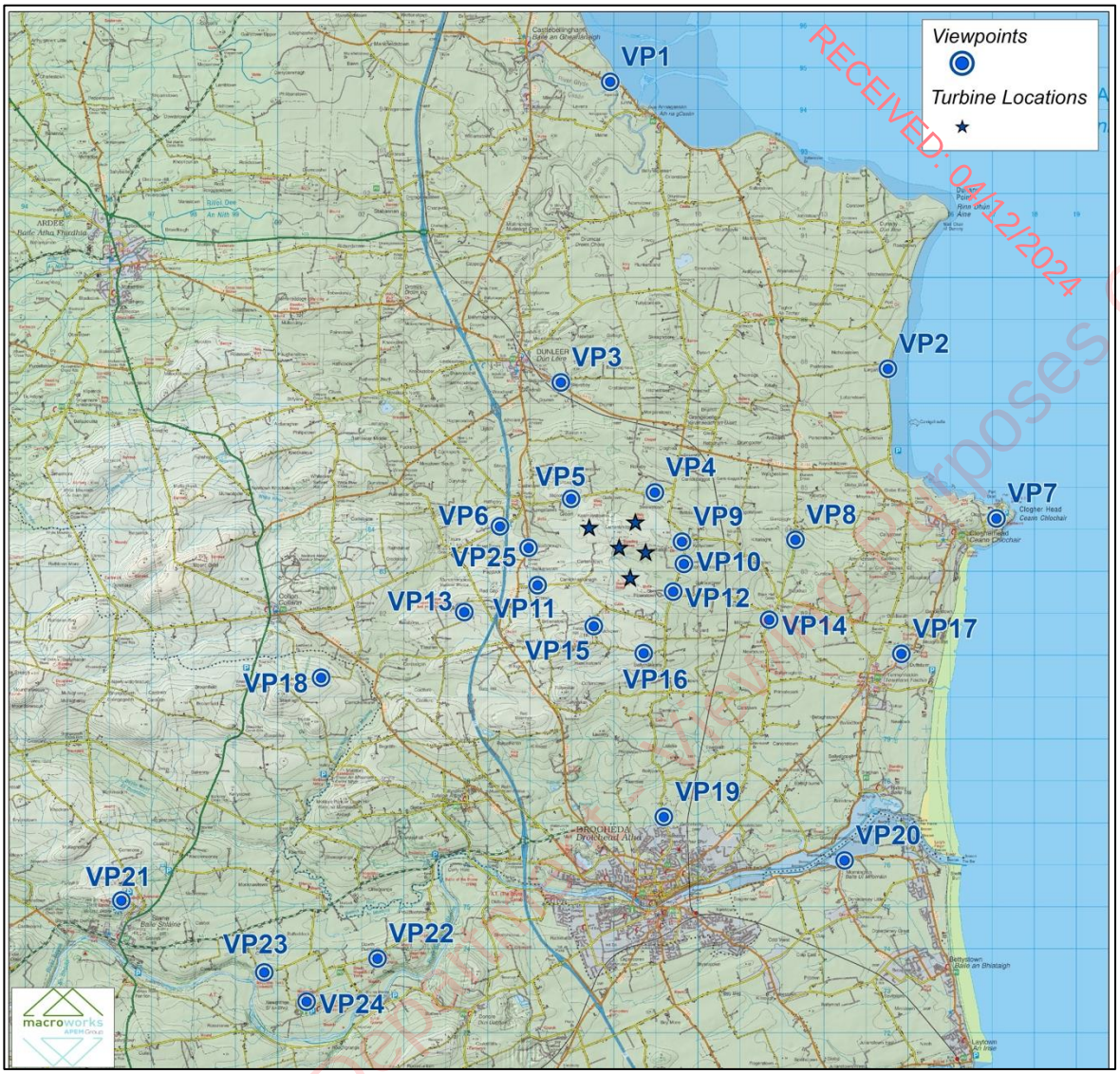


**Figure 12.12 - Map showing selected representative viewpoints within the Study Area**

### 12.3.7 Cumulative Baseline

Within the 20km Study Area, four operational wind farms were identified. These are outlined in Table 2.1 but include a four-turbine development at Dunmore Wind Farm (Parts 1 and 2), the single-turbine Leaby Cross Wind Farm, and the single-turbine Meade Potato Company Wind Farm. Turbines associated with these developments are located over 10km to the west as illustrated in Figures 2.4 and Figure 12.13.

Through ongoing searches undertaken throughout the assessment period (up to the end of October 2024), with the exception of a single turbine over 19.5km to the north (WuXi Biologics) which has been granted planning permission but is being appealed, no wind farms were identified that were under construction, subject to a valid planning application, or at a pre-planning stage were identified within the Study Area. Details are again outlined in Table 2.1, with the location illustrated in Figures 2.4 and Figure 12.14.

Ongoing searches considered other types of development in the Wider Study Area that were considered to be of relevance to a cumulative LVIA. Given its proximity and relationship with the site, the only development that was considered to be of note relates to the nearby Kilsaran Quarry Extension, the details of which are provided in section 2.4.4.2.

### 12.3.8 Evolution of the baseline

In advance of identifying the potential landscape and visual effects of the proposed development, it is considered relevant to consider the changes that are likely to occur in the landscape over time in its absence. From a landscape and visual perspective, there are many political, economic, social and environmental factors that may influence the baseline landscape and visual environment in the longer term, and being accurate in how these may individually, or in combination, influence the baseline landscape and visual environment is problematic.

In terms of wind energy development, Figure 12.6 demonstrates that the majority of County Louth is defined as being within either a 'Preferred Area' or an area that is 'Open to consideration'. At the time of writing no other wind energy developments were identified that were under construction or at pre-planning, however in the longer term, it is not unreasonable to assume that wind energy proposals would come forward across the wider landscape, which would change the baseline situation. In lieu of any detail, it is not considered appropriate to speculate where this may or may not occur given that only localised areas are identified in the LCDP as being 'No Go Areas' in relation to wind energy.

The main influences on the future landscape and visual environment are considered to pertain to the impacts of climate change and the character of vegetation in the landscape.

Large parts of this landscape are covered by woodland, both natural and commercial forestry plantations, as well as hedgerows, and belts of vegetation associated with agricultural use. Climate change together with the natural ongoing maturation of vegetation in the wider landscape, is likely to influence vegetation cover, whether as a result of biological pests and pathogens, or rainfall patterns, albeit the lack of certainty means that identifying likely changes is problematic.

Vegetation management is also likely to influence the character of the landscape. In relation to commercial forestry activities, large-scale felling and replanting activities will impact the character of the landscape as areas of woodland become mature. Whilst this will result in changes to the wider landscape and visual environment, commercial forestry is an ongoing

commercial land use which is embedded in this landscape. In areas of woodland that are older in origin, these will continue to have a natural character, regenerating over time.

Changes to agricultural uses of land throughout the landscape may occur over time, subject to a variety of external factors. All change in this regard, is likely to be localised in its influence and would be consistent with this type of landscape change across Ireland, rather than being specific to this locality.

Other development pressures are difficult to accurately predict, but like many similar landscape contexts that are influenced by large urban areas close to notable public transport infrastructure, it is very likely that the landscape will be subject to ongoing development pressure and that the landscape will incrementally change as a result of it. Accurately predicting this change is problematic and subject to a variety of external factors, but is inherently controlled through the planning process. The focus of urban pressure is likely to relate to larger built-up areas such as around Drogheda, and whilst domestic scale change is likely to occur throughout the landscape, this is not considered to have the potential to significantly alter the character of the wider landscape.

The approval for the continued operation and extension of Kilsaran Quarry would result in a change to the landscape at a local level. However, the LVIA undertaken in relation to this application determined that it would either not be visible, or would be negligibly so. As such it is not considered to have the potential to generate notable change in the landscape.

In this instance, it is considered that the receiving landscape and visual baseline would remain in the same or similar condition as it is currently.

## 12.4 MITIGATION MEASURES

In relation to the WEDG, It is considered that the Proposed Development is in keeping with the siting and design criteria presented in the guidance for the 'Hilly and Flat Farmland' landscape type, with the following noted:

- Location: The Proposed Development is located on a broad elevated plateau, which is preferred within the guidance, and is located at a sufficient distance from surrounding properties such that they do not visually dominate them. Their elevated location also ensure that they do not contribute to visual clutter.
- Spatial Extent: The wind farm has a relatively small spatial extent that responds to the scale of this landscape, and the scale of its plateau location.

- Spacing: The turbines are well-spaced, allowing a high degree of visual permeability between the turbines. Their regular spacing corresponds with the scale of the underlying field pattern.
- Layout: The staggered linear layout adopted is advocated for this landscape type.
- Height: The turbines are considered to be consistent with the scale of this relatively elevated plateau landscape and respond to the scale of the surrounding agricultural and commercial forestry context. Importantly, the turbines do not appear over-scaled in relation to the topography of the receiving landscape and are in no instances considered to dominate.

Section 6.18 refers to appropriate setback distances for visual amenity purposes. The guidelines outline a mandatory minimum setback distance of "500 meters" or the distance of "4 times the tip height" of the proposed turbines "between the nearest point of the curtilage of any residential property". This is set out in SPPR2 which is included below:

*SPPR 2: With the exception of applications where reduced setback requirements have been agreed with relevant owner(s) as outlined at 6.18.2 below, planning authorities and An Bord Pleanála (where relevant), shall, in undertaking their development planning and development management functions, ensure that a setback distance for visual amenity purposes of 4 times the tip height of the relevant wind turbine shall apply between each wind turbine and the nearest point of the curtilage of any residential property in the vicinity of the proposed development, subject to a mandatory minimum setback of 500 metres from that residential property. Some discretion applies to planning authorities when agreeing separation distances for small scale wind energy developments generating energy primarily for onsite usage. The planning authority or An Bord Pleanála (where relevant), shall not apply a setback distance that exceeds these requirements for visual amenity purposes.*

The proposals have been designed to ensure that the turbines achieve the minimum setback distance of 720m from residential dwellings, and agreements are in place with regard to the four properties located within this.

All construction activities will follow best practice methods to reduce environmental impacts upon the environment, as outlined in the Construction and Environmental Management Plan (CEMP) which will manage the environmental commitments of the Project through the construction phase, and will be continued through to the commissioning, operation and final decommissioning phases. It is noted that an Environmental Manager / Ecological Clerk of Works (ECoW) with appropriate experience will be appointed for the duration of the construction phase so that the CEMP is effectively implemented.

Full details of the proposals, including works required in relation to the turbine delivery and grid connection are outlined in Chapter 2 of this report.

With regard to landscape and visual matters, it is recognised that vegetation removal will be required to facilitate the construction of access tracks, civil works and turbine hardstands. This would comprise Sitka Spruce and additional broadleaves, and all works would be undertaken in regard to the Forestry Service specifications outlined in Chapter 2. This chapter also outlines that all felled areas would be replaced in the form of replacement afforested land.

The construction methodology has considered the minimisation of landscape disturbance, with measures such as Horizontal Directional Drilling (HDD) being proposed as part of the grid connection works to minimise any damage. Temporary works required in relation to the turbine delivery route and grid connection will require the installation of load bearing surfaces, cable trenches (in-road, and off-road), and the localised disturbance of grass and vegetation. At the R162 / L-6274-0 Junction a degree of hedgerow removal and embankment reprofiling will be required in connection with the delivery of the turbine components.

All areas damaged during construction will be reinstated to their original condition, with the exception of the long-term infrastructure required for the proposed wind farm. Replacement of trees and hedgerows will be undertaken in accordance with approved landscaping plans, with landscape works undertaken in accordance with best practice. The following standards are widely adopted as representing best practice in landscape operations:

- BS 4428:1989 Code of practice for general landscape operations (excluding hard surfaces). BS 5837:2012 – Trees in Relation to design, demolition and construction.
- BS 8545 Trees: from nursery to independence in the landscape – Recommendations.
- BS 3936 – Part 1: Nursery stock specification for trees and shrubs.

Upon decommissioning, the turbines, meteorological mast, and all underground electrical and communications cabling will be removed. Other elements will be retained in situ to serve ongoing forestry and agriculture activity.

No specific landscape or visual mitigation measures are proposed in relation to the proposed wind farm, in addition to the measures outlined.

## 12.5 MONITORING

Given that there are no specific mitigation measures proposed in regard to the moderation of landscape and visual effects, monitoring measures are not required. It is reiterated however, that an Environmental Manager / Ecological Clerk of Works (EcoW) with appropriate experience will be appointed for the duration of the construction phase so that the CEMP is effectively implemented. This will include replacement landscaping works.

## 12.6 ASSESSMENT OF POTENTIAL EFFECTS

### 12.6.1 Landscape Impacts

Landscape impacts are assessed on the basis of landscape sensitivity weighed against the magnitude of physical landscape effects within the Site and effects on landscape character within the wider landscape setting. This wider setting is considered with respect to the Central Study Area (<5 km) as well as the Wider Study Area (5-20km).

#### 12.6.1.1 Landscape Character, Value and Sensitivity

Landscape value and sensitivity are considered in relation to a number of factors that accord with GLVIA3, which are set out below and discussed relative to the Central and Wider Study Area.

**Central Study Area (58pprox.. <5km)**

The Central Study Area contains gentle undulations, with local high points of around 130m AOD, beyond which the landform rises to the south (within approximately 4km), and west where the landform is defined by a series of rolling hills. The site's location on the edge of this more elevated area marks a transition to the wider coastal plain to the east and north.

The site and much of the Central Study Area are contained within the 'Uplands of Collon and Monasterboice' LCA (County Louth), the description of which recognises the site's relatively elevated plateau location and the opportunities this brings for views over the wider landscape from parts of it. It states that the landscape quality is 'quite high', and that the elevation affords a 'high scenic quality value'. In this regard, it is noted that much of the land within the southwest of the Central Study Area is designated an AHSQ in recognition of its scenic qualities.

Within the Central Study Area there are also three designated views and prospects, View 23 (Callystown to Clogherhead), View 25 (Brownstown southwards over AHSQ towards Drogheda), and View 26 (Newtown Monasterboice towards Monasterboice Tower). Whilst

these reflect the scenic opportunities presented in the Central Study Area, it is noted that none of these views directly orientate towards the Proposed Development, and in the case of View 23, and 25 orientate in the opposite direction from the site.

In some locations, broad views and vistas across the distant rolling landscape and uplands are often afforded, and from some of the more elevated locations, longer-range views are available towards the Cooley Mountains to the north. Where views are more open and long distance in nature, this generally affords a higher scenic value. However, it is also recognised that in many locations, the relative elevation of the Central Study Area, and the presence of belts of vegetation in the landscape, act to restrict these longer range views and retain a focus on the immediate working landscape, where the scenic value is considered comparatively reduced.

The description of character outlines the variety of landcover present, and this is considered particularly pertinent to the Central Study Area where the prevailing pastoral agricultural context is influenced by blocks of conifer plantation, an operational quarry, major road and rail corridors, and modern residential developments.

The description of character highlights the archaeological significance of the landscape and the prevalence of archaeological monuments, with particular reference to features at Monasterboice. Whilst it is recognised that there are features present in the Central Study Area (such as Monasterboice) that have notable heritage and archaeological value, in terms of the contemporary experience and perception of the landscape, the Central Study Area is not considered to have a notable time-depth quality, relative to other parts of the wider landscape such as in the Boyne Valley, where a mix of modern residential properties and working characteristics that relate to subsistence informing landscape character.

To the westof the Central Study Area, the underlying agrarian landscape is influenced by the M1 road corridor and other notable roads such as the R132. The scale of this infrastructure, and its audible and visual influence, degrades the landscape and scenic qualities of the Central Study Area.

To the north and east the landscape forms part of the wider Muirhevna Plain LCA, which is an extensive plain that plays host to extensive agricultural land uses as a result of its rich soils. Whilst it is dissected by a variety of small meandering rivers, and in places has a lightly undulating character, it is generally a flat and large scale landscape.

To the east, the landscape falls towards the coastal edge, and retains a working, agricultural character, albeit this is dissected by the Belfast to Dublin railway corridor. To the south, the

land slopes southward towards Drogheda, with the agricultural context becoming increasingly influenced by its proximity to the urban edge.

Whilst the landscape of the Central Study Area is recognised for its scenic and archaeological values, these values reflect the longstanding human interaction with this landscape over time, rather than being explicitly informed by naturalistic qualities and values. It is a working landscape, that is extensively influenced by typical productive rural landscape activities and land uses, and so whilst some parts are inherently more susceptible to change, such as in the locality of Monasterboice, it is considered to be a robust landscape.

On balance of the reasons outlined above, the landscape sensitivity of the Central Study Area is deemed to be **Medium**.

**Wider Study Area (c.5-20km).**

In terms of the Wider Study Area, the landscape remains a rural, working, inhabited landscape that is underpinned by typical rural land uses, and which displays extensive signs of human influence, including most notably, the major road and rail corridors that traverse the Study Area, the urban area of Drogheda, as well as existing wind turbine development. Although wind energy development is not extensive across the Wider Study Area, there are turbines present in the landscape to the west of the site, and other vertical features such as telecommunications masts are present.

It is rich and varied in terms of its topographical characteristics, including hills and upland areas, transitional lands, notable urban areas, extensive lowland plains, coastal landscapes, and incised valley landscapes rich in archaeological heritage. As a result of its diverse nature, it naturally displays an array of contrasting landscape sensitivities, qualities and associations.

As with the Central Study Area, the landscape of the Wider Study Area has noted scenic value, with numerous designated views, prospects, and scenic routes. Notable concentrations of these relate to the hills and upland areas to the west of the site, the coastal edge to the east and northeast of the site, and then the lowland areas to the south and southwest of the site associated with the River Boyne and its containing landscape. The scenic qualities of these locations are also reflected by the AHSQ designations present, and in the case of Clogherhead to the east of the site, is designated as an AONB, in recognition of the 'unspoiled natural landscape', 'special character' and 'spectacular scenic quality'.

Whilst these locations highlight the scenic qualities of the landscape and reflect locations where the landscape has potentially stronger scenic attributes, it is noted that in many cases, the primary scenic values and views are not directly associated with views towards the site, many orientating in the opposite direction to the site, or with other features/aspects of the landscape away from the site. In the case of the coastal landscape for instance, the primary scenic value and landscape experience relates with the broad coastal panoramas available, rather than inland views towards the site. Conversely, where the visual experience pertains to important features in the landscape (such as Bru na Bóinne within the Boyne Valley), the visual experience relates to the feature and its setting, rather than directly towards the site (albeit it is recognised that the proposals may form part of this setting). The scenic attributes, and the concentration of heritage sites, have led the wider landscape to have notable recreational value and become a notable tourist destination, playing host to a variety of walks, cycling routes, and driving routes.

The Meath LCA recognises much of the wider landscape to the west, northwest, and southeast of the site within the Wider Study Area as having 'Moderate' value, with the landscape to the southwest being of 'Very High' (Rathkenny Hills) and 'Exceptional' (Boyne Valley). In terms of the sensitivity judgements presented in the Meath LCA, the landscape to the west and south of the site associated with the Rathkenny Hills, Boyne Valley, Coastal Plains, Nanny Valley, are identified as having high sensitivity. The remaining LCAs are of no greater than 'Moderate' sensitivity.

In recognition of the various elements that influence landscape character, including urbanising features and extensive human intervention in the landscape, it is considered that the landscape character of the Wider Study Area has an underlying **Medium** tending to **Medium-low** landscape sensitivity. Outside of the urban context of Drogheda, and in relation to the landscape of the Boyne Valley to the southwest and southeast, as well as coastal edge locations (including the 'Clogherhead and Port Oriel' AONB) where the character of the landscape is more heavily informed by the scenic qualities of the landscape, landscape sensitivity would be **High.** Sensitivity tends towards **Very High,** in the more distinctive valley floor landscapes associated with the River Boyne, where the topography and relationship with the surrounding landform are important to scenic qualities and a sense of place, and are more susceptible to change.

#### 12.6.1.2 Magnitude of Landscape Effect

The physical landscape as well as the character of the Proposed Development and its Central Study Area (<5km) is affected by the proposed wind turbines as well as ancillary

development such as access and circulation roads, areas of hard standing for the turbines, borrow pits, grid connection and the substation compounds. By contrast, for the wider landscape of the Study Area, landscape impacts relate exclusively to the influence of the proposed turbines on landscape character.

Those aspects of the Proposed Development that are likely to have an impact on the physical landscape and landscape character are described in Chapter 2 (Description of Proposed Development) with construction processes described in the Construction and Environmental Management Plan (CEMP) at **Appendix 2.1**.

**Construction Stage Effects on Landscape Character**

It is considered that the Proposed Development will have a modest physical impact on the landscape within the site as none of the Proposed Development features have a large 'footprint' and land disturbance/vegetation clearing will be relatively limited. Tree felling will be required to accommodate turbines T01 and T05 and the required access tracks and hardstanding areas, albeit this will be vegetation that is not readily discernible from locations in the wider landscape.

The topography and land cover of the proposed site will remain largely unaltered with construction being limited to access tracks, turbine hardstands, the on-site substation and control building compound, temporary construction compound and proposed Met Mast. Excavations will tie into existing ground levels and will be the minimum required for efficient working. Any temporary excavations or stockpiles of material will be re-graded to marry into existing site levels and reseeded appropriately in conjunction with advice from the project ecologist.

The finalised internal access track layout has been designed to avoid environmental constraints, and follow the natural contours of the land wherever possible reducing the extent of 'cut and fill'. There will be an intensity of construction stage activity associated with the access tracks and turbine hardstands consisting of the movement of heavy machinery and materials, but this will be temporary/short term in duration. The construction stage effects on landscape character from these activities will be minor.

There will be one 38kV on-site substation constructed to collect the generated power from the Proposed Development before connecting to the national grid at the 110kV Drybridge substation. The on-site substation will be located c. 300m to the north of the Piperstown Equestrian Centre on Ballymakenny Road and c.500m east of turbine T05, within a small arable field enclosed by existing hedgerow vegetation. The proposed substation compound

will be enclosed by a 2.5 metre high steel palisade fence, and will be heavily screened by the surrounding vegetation. The most notable construction stage landscape impacts resulting from the proposed on-site substation relate to the minor levelling of the site to form a level platform, and the removal of a short length of hedgerow to facilitate an access track.

All internal site cabling will be underground and will follow site access tracks without the need for trenching through open ground. Indeed, the land cover of the site will only be interrupted as necessary to build the structures of the proposed wind farm and to provide access. Impacts from land disturbance and vegetation loss at the site are considered to be modest in the context of this landscape setting that is influenced by an array of working rural land uses.

A permanent Met mast will be erected on site, c. 510m to the southeast of turbine T04. It will comprise a 36m high lattice steel mast with a shallow concrete foundation. The most notable construction stage effects will relate to the minor amount of ground excavation required to facilitate the shallow foundations for the steel mast structure. The proposed project also includes the construction of two new site entrances, both connecting onto the local road to the north of the site near Kilsaran Quarry, connecting the R132 with the L2275 (Ballymakenny Road).

The grid connection cabling will run from the onsite 38kV Substation to Drybridge 110kV Substation, Co. Louth across the site and public road corridor. No overhead lines are required for the connection. Connection works will involve the installation of ducting, joint bays, drainage and ancillary infrastructure. This will require delivery of plant and construction materials, followed by ground excavation, stockpiling of materials, laying of cables, and subsequent reinstatement of trenches, resulting in minor and very localised construction stage landscape effects.

Site activity will be at its greatest during the construction phase due to the operation of machinery on site and the movement of heavy vehicles to and from the site. This phase will have a more notable influence on the character of the site and cable routes than the operational phase, but it is a 'short-term' impact that will cease as soon as the Proposed Development is constructed and becomes operational.

There will be some long-term/permanent construction stage effects on the physical landscape in the form of turbine foundations and hardstands, access tracks and a substation, but only the substation is likely to remain in perpetuity as part of the national grid network. It is likely, that except for some residually useful access tracks, all other development features will be removed from the Site and it will be reinstated/restored to the

prevailing land cover. Ground workings of this scale should be considered alongside the quarrying activities nearby, and are of a very localised influence only. As such, the construction stage landscape effects of the Proposed Development are largely reversible.

There will be some construction stage effects on landscape character generated by the intensity of construction activities (workers and heavy machinery) as well as areas of bare ground and stockpiling of materials as identified in the Construction and Environmental Management Plan (CEMP), which accompanies this application.

Impacts during the construction stage will inherently be most notable at the immediate landscape level, and with distance, the comparative influence of these effects will diminish. Overall, construction stage landscape effects are considered to be of a **High-Medium** magnitude within the site and its immediate environs (within approximately 1km), reducing to **Medium** for the remainder of the Central Study Area.

Beyond the Central Study Area (5km from the site) and relevant to the Wider Study Area, the magnitude of landscape impact during the construction phase is deemed to reduce to **Low** and **Negligible** at increasing distances. The quality of the landscape effects would remain **Negative.**

Such effects will be **temporary/short-term** in duration and are an inevitable consequence of the development proposed.

**Operational Stage Effects on Landscape Character**

For most commercial wind energy developments, the greatest potential for landscape impacts occurs as a result of the change in character of the immediate area due to the introduction of tall structures with moving components. Thus, wind turbines that may not have been a characteristic feature of the area become a defining element of that landscape character. In this instance, wind turbines are not a characteristic feature of the immediate site context or Central Study Area, with existing wind turbines being located over 10km to the west. Effects are therefore generated primarily as a result of the introduction of a new and relatively unfamiliar feature (in a localised context).

In terms of scale, the broad scale of the plateau landform helps to assimilate the wind farm within the context of the Central Study Area, where these attributes reduce the type of scale conflict that can occur in more intricate landscape areas. In terms of function, the broad plateau has a utilitarian character due to the presence of working rural land uses such as agriculture, commercial forestry, mineral extraction, and residential development. Although the Proposed Development represents a stronger human presence and level of built

development than currently exists on the site, it will not detract significantly from the rural working character of this plateau landscape, and an understanding of these other land uses will remain a key part of the landscape experience.

Whilst it is recognised that parts of the Central Study area have scenic value, this scenic value is considered to relate primarily to the availability of longer range views, and views towards the coast and distant mountainous landscape, as well as over the much altered rural landscape context. Although the proposed development will influence the scenic properties of the landscape by merit of their presence, the spacing afforded between the turbines, allows a high degree of visual permeability such that these visual relationships will remain available, and the underlying features and characteristics of the landscape will be retained. With reference to the AHSQ that covers much of the southern part of the Central Study Area falls, whilst the proposed turbines will not occur within the AHSQ, their presence will indirectly influence the designated scenic value. Again, this scenic value is influenced by extensive human intervention in the landscape, including the M1 road corridor which passes through it.

In terms of the indirect effects of the Proposed Development on the character of the landscape in the Wider Study Area, the influence of the proposed turbines on the perceived landscape character will progressively lessen with distance, as they become incrementally small and partially visible features in a wider landscape context, and the degree to which they remain visible and noticeable reduces. With distance, other aspects and features in the landscape such as the Mary McAleese Bridge, and the prominent Irish Cement plant at Mullaghcrone also influence views, which together with the wider landscape context prevail in their influence on character.

With respect to the 'Clogherhead and Port Oriel'AONB to the east of the site, whilst it is acknowledged that this location is sensitive from a scenic perspective, it is noted that the site is located 7km to the west at its nearest point and that from around one third of this area falls outside of the ZTV pattern. From the description of the AONB in the CDP, it is clear that the site does not sit within any of the views presented as being of particular importance, those being of the coastal aspects to the north, east, and south, and the proposed turbines (whilst visible) would be present as a long range visible feature in inland views. It is not considered that the proposed development would notably influence the character of this area of landscape in any notable manner.

In relation to the landscape of the Boyne Valley to the southwest and southeast, and in particular, the distinctive valley floor landscapes which are considered to be of high

sensitivity, where visible, the proposed turbines would be seen partially at distance, as modest scale background features, and occupy a limited spatial extent in wider panoramic views. The influence of this visibility would be comparable to the existing wind turbine context present, and it is not considered that the degree of visibility would generate any notable indirect effects on perceived character.

Whilst it is noted that there are parts of the wider landscape that are considered to be highly sensitive, and which have high scenic and archaeological value, in all instances, the landscape (and views of it) is influenced by a longstanding human interaction with the landscape. Where the landscape has more natural qualities (such as along the coastal edge), in no location is landscape character devoid of human influence.

It is important to note that in terms of duration, the Proposed Development represents a long-term (but not permanent) impact on the landscape, and is reversible. The lifespan of the project is 35 years, after which time it will be dismantled and the landscape reinstated to prevailing conditions.

In summary, there will be physical impacts on the land cover of the site as a result of the Proposed Development during the operational phase, but these will be relatively minor in the context of this working, rural landscape, that includes quarrying activities and commercial forestry. The scale of the Proposed Development will be well assimilated within its landscape context without undue conflicts of scale with underlying landform and land use patterns.

The influence of the proposed development on landscape character will inherently be most notable at the immediate landscape level, where their scale and form have the potential to generate considerable change to the character of the landscape. With distance the comparative influence of the proposed development reduces. For these reasons, and within the context of the Central Study Area, the magnitude of the landscape impact during the operational phase is deemed to be **High-medium** within the site and its immediate environs (within approximately 1km) reducing to **Medium** for the remainder of the Central Study Area.

The quality of the landscape effects Is deemed **Negative**, and the duration of the impact is **long- term.**

Beyond the Central Study Area (5km from the site) and relevant to the Wider Study Area, the magnitude of landscape impact during the operational phase is deemed to reduce to **Low** and **Negligible** at increasing distances as the wind farm becomes a proportionately

smaller and component of the overall landscape fabric. The quality of the landscape effects would remain **Negative**, and the duration **long-term.**

**Decommissioning Stage Effects on Landscape Character**

The decommissioning phase will have similar impacts as the construction phase, primarily as a result of the removal of turbines and the movement of large turbine components away from the site. There may be a minor disturbance to roadside and trackside vegetation that has grown during the operational phase, and temporary stockpiling of material, albeit this these aspects would be temporary and readily reinstated upon completion of decommissioning. Areas of hard standing that are of no further use will be reinstated and reseeded to blend with the prevailing surrounding land cover of the time, albeit some will be retained and utilised for forestry activities. Any such elements being retained in the longer term would have a negligible influence on landscape character.

It is expected that the decommissioning phase will be completed within one year and that within a relatively short period of time following decommissioning (approximately 2-3 years) there will be little evidence that a wind farm was present. Effects will therefore be **temporary/short-term** in duration and are an inevitable consequence of the development proposed. Overall, decommissioning stage landscape effects are considered to be of no greater than a **Medium** magnitude in relation to the Central Study Area, reducing to **Low** and **Negligible** in relation to the Wider Study Area with increasing distance.

Such effects will be **temporary/short-term** in duration and are an inevitable consequence of the development proposed.

### 12.6.1.3 Significance of Potential Landscape Effects

The significance of landscape impacts is a function of landscape sensitivity weighed against the magnitude of landscape impact. This is derived from the significance matrix (Table 12.3) used in combination with professional judgment.

Central Study Area

Based on a Medium sensitivity judgement and a High-medium magnitude of construction stage landscape impact within the site and its immediate environs (within approximately 1km), the significance of the impact is considered to be **Substantial-moderate / Negative / Short-term** during construction. With distance, the Medium magnitude of construction stage landscape impact would result in the significance reducing to **Moderate/Negative/Short-term**.

The construction phase landscape effects in relation to the Central Study Area are not considered to be significant.

Based on a Medium sensitivity judgement and a High-medium magnitude of operational stage landscape impact within the site and its immediate environs (within approximately 1km), the significance is considered to be **Substantial-moderate / Negative / Long-term** during the operational phase. With distance, the Medium magnitude of operational stage landscape impact would result in the significance reducing to **Moderate/Negative/Long-term**.

The operational phase landscape effects in relation to the Central Study Area are not considered to be significant.

Based on a Medium sensitivity judgement and a Medium magnitude of decommissioning stage landscape impact within the Central Study Area, the significance of the impact is considered to be no greater than **Moderate / Negative / Short-term** during decommissioning. This would progressively reduce with distance.

The decommissioning phase landscape effects in relation to the Central Study Area are not considered to be significant.

Wider Study Area

Based on a Medium sensitivity judgement and a Low tending to Negligible magnitude of construction stage landscape impact, the significance of the impact is considered to be no greater than **Slight / Negative / Short-term** during construction. In more sensitive parts of the landscape as outlined previously, the High and in places Very High sensitivity, combined with the Low tending to Negligible magnitude of construction stage landscape impact, would result in the significance being no greater than **Moderate-Slight/Negative/Short-term**.

The construction phase landscape effects in relation to the Wider Study Area are not considered to be significant.

Based on a Medium sensitivity judgement and a Low tending to Negligible magnitude of operational stage landscape impact, the significance of the impact is considered to be no greater than **Slight / Negative / Short-term** during the operational phase. In more sensitive parts of the landscape as outlined previously, the High and in places Very High sensitivity, combined with the Low tending to Negligible magnitude of construction stage landscape impact, would result in the significance being no greater than **Moderate-Slight/Negative/Long-term**.

The operational phase landscape effects in relation to the Wider Study Area are not considered to be significant.

Based on a Medium sensitivity judgement and a Low tending to Negligible magnitude of decommissioning phase landscape impact, the significance of the impact is considered to be no greater than **Slight / Negative / Short-term** during the decommissioning phase. In more sensitive parts of the landscape as outlined previously, the High and in places Very High sensitivity, combined with the Low tending to Negligible magnitude of construction stage landscape impact, would result in the significance being no greater than **Slight/Negative/Short-term**.

The decommissioning phase landscape effects in relation to the Wider Study Area are not considered to be significant.

### 12.6.2 Visual Effects

In the interests of brevity and so that this chapter remains focussed on the outcome of the visual assessment (rather than a full documentation of it), the visual impact assessment at each of the 25 selected representative viewpoint locations has been placed into Technical Appendix 12.1, and this section should be read in conjunction with it.

Reference should also be made to the associated photomontage set contained in a separate booklet accompanying the EIAR. A summary table (Table 12.10) collates the assessment of visual impacts. A discussion of the results is provided thereafter.

**Table 12.10–- Summary of Visual Impact Assessment at Representative Viewpoint Locations (refer to Technical Appendix 12.1)**

| VP No. | Distance to nearest turbine | Visual Receptor Sensitivity | Magnitude of Visual Impact | Significance / Quality / Duration of Impact |
|---|---|---|---|---|
| **VP1** | 10.6km (T2) | High-Medium | Low | Slight/ Negative/ Long-term |
| **VP2** | 7km (T2) | High-Medium | Low | Slight/ Negative/ Long-term |
| **VP3** | 3.5km (T1) | Medium | Medium-Low | Moderate-Slight/ Negative/ Long-term |
| **VP4** | 0.9km (T2) | Medium–- Low | Medium-Low | Moderate / Negative/ Long-term |
| **VP5** | 0.8km (T1) | Medium–- Low | Medium | Moderate / Negative/ Long-term |
| **VP6** | 2.1km (T1) | Medium–- Low | Medium-low | Moderate-Slight/ Negative/ Long-term |
| **VP7** | 8.4km (T4) | High-Medium | Low | Slight/ Negative/ Long-term |
| **VP8** | 3.6km (T4) | Medium | Medium-Low | Moderate-Slight/ Negative/ Long-term |
| **VP9** | 0.9km (T4) | Medium–- Low | High-Medium | Substantial-Moderate/ Negative/ Long-term |

| VP No. | Distance to nearest turbine | Visual Receptor Sensitivity | Magnitude of Visual Impact | Significance / Quality / Duration of Impact |
|---|---|---|---|---|
| **VP10** | 0.9km (T4) | Medium–- Low | High-Medium | Substantial-Moderate/ Negative/ Long-term |
| **VP11** | 1.8km (T1) | Medium | Medium-low | Moderate/ Negative/ Long-term |
| **VP12** | 1.1km (T5) | Medium–- Low | Medium | Moderate/ Negative/ Long-term |
| **VP13** | n/a (T1) | High | Negligible | Imperceptible/ Negative/ Long-term |
| **VP14** | 3.3km (T4) | Medium–- Low | Medium-low | Moderate-Slight/ Negative/ Long-term |
| **VP15** | 1.4km (T5) | High-Medium | Medium | Moderate/ Negative/ Long-term |
| **VP16** | 1.8km (T5) | Medium | Medium-low | Moderate-Slight/Negative/Long-term |
| **VP17** | 6.5km (T4) | Medium | Low-Negligible | Slight–- Imperceptible/ Negative/ Long-term |
| **VP18** | 7.3km (T1) | Medium | Low | Slight/ Negative/ Long-term |
| **VP19** | 5.7km (T5) | Medium–- Low | Low | Slight–- Imperceptible/ Negative/ Long-term |
| **VP20** | n/a (T5) | High-Medium | Negligible | Imperceptible/ Negative/ Long-term |
| **VP21** | 14.2km (T1) | Very High-High | Low-Negligible | Slight/ Negative/ Long-term |
| **VP22** | 10.8km (T5) | Very High-High | Low-Negligible | Slight/ Negative/ Long-term |
| **VP23** | 12.8km (T5) | Very High-High | Low-Negligible | Slight-imperceptible/ Negative/ Long-term |
| **VP24** | 12.7km (T5) | Very High | Low-Negligible | Slight / Negative/ Long-term |
| **VP25** | 1.5km (T1) | Medium | Medium | Moderate / Negative/Long-term |

### 12.6.3 Visual Impact summary by receptor type

The significance of visual impacts is a function of visual receptor sensitivity and visual impact magnitude, determined through professional judgement as informed by the significance matrix in **Table 12.3**. Visual impacts are summarised below by receptor type.

#### 12.6.3.1 Visual Impacts on Key Views

As previously set out in **Section 12.3**, numerous features in the wider landscape are considered to be of significant importance at a national and international level, and from which views of the wider landscape are an important part of the experience.

Although this landscape contains many sites of archaeological and heritage importance, and are included in the wider consideration of visual impacts concerning designated views, and Tourism, Recreational & Heritage Features, four of the viewpoints (VP21, 22, 23, and 24) were selected as being of particular importance in terms of being key views. This includes panoramic views from the Hill of Slane, and from the iconic passage tombs of one of the world's most important neolithic landscapes, Brú Na Bóinne, which includes the Dowth, Knowth, and Newgrange passage tombs.

The sensitivity is categorised as Very High – High in recognition of the importance of these locations, and the sensitivity of visual receptors to changes in views of the surrounding landscacpe, whilst simultaneously recognising that the landscape is not immune from human influence.

Of the four viewpoints, views from the Hill of Slane (VP21) are the most extensive, albeit at 14.2km, views are distant, and seen as part of a wider panoramic view within which other turbines are visible. The limited spatial extent and minor visual intrusion results in no greater than a 'Slight' likely visual impact significance.

Despite being marginally closer to the site, visibility is more partial from the three passage tombs, giving rise to 'Slight' and 'Slight-imperceptible' likely visual impact significance.

It is **not considered that the Proposed Development will generate significant visual impacts** concerning key views at these important heritage sites. Residual impacts at these locations relate more to the sensitivity of the location and visual receptors than to the magnitude of change.

### 12.6.3.2 Visual Impacts on Local Community Views

Local Community views are considered to be those experienced by those people who live, work and move around the area within approximately 5km of the Site (i.e., the Central Study Area). These are generally the people who are most likely to have their visual amenity affected by a wind energy proposal due to proximity to the turbines, a greater potential to view turbines in various directions, or having turbines as a familiar feature of their daily views. Owing to proximity, local community views understandably tend to have the highest likely visual impact significance of all receptors within the Study Area.

In total, of the 25 viewpoints assessed as part of this LVIA, 13 (VP3–- 6, 8–- 12, 14–- 16, and 25) were selected as being relevant to a consideration of visual effects in relation to the local community.

The sensitivity ranges between High-Medium and Medium-low with the higher-ranging sensitivities associated with designated scenic areas, where comparatively broad, and long-ranging views are afforded across the wider landscape. Those receptors identified with a 'medium' to 'medium-low' sensitivity are more typical views influenced by the surrounding working landscape, such as broad areas of pastoral farmland and extensive blocks of commercial conifer forestry.

Two of the viewpoints (VPs 9 and 10) experienced the highest likely visual impact recorded for the Proposed Development; that of 'Substantial-Moderate' Visual Impact Significance, and six of the viewpoints (VP4, 5, 11, 12, 15 and 25) experienced a 'Moderate' Visual Impact Significance. All of these viewpoints are located within 1.8km of the proposed turbines, where views are proximate and the scale of the turbines is perceived as being most prominent.

All of the other viewpoints experienced a 'Moderate-Slight' Visual Impact Significance, which reflected the more distant nature of views being between 1.8km and 3.6km distant, as well as the more partial and interrupted nature of views as a result of foreground topography and vegetation.

The proposed turbines will become one of the defining features in this local landscape context, although the dispersed layout of the proposed turbines results in a strong degree of visual permeability through the scheme so as not to generate any strong sense of enclosure or heavily obstruct views of the distant landscape where available. Overall, whilst the turbines will present at a considerable scale from some of the nearest local community receptors, they do not generate any notable sense of over-bearing.

As such, it is **not considered that the Proposed Development will generate significant visual impacts** for local community receptors.

#### 12.6.3.3 Visual impacts on designated scenic routes and views

As previously set out in **Section 12.3**, all of the scenic routes and views that fall inside the ZTV pattern were investigated during fieldwork to determine whether actual views of the Proposed Development might be afforded. In total, of the 25 viewpoints assessed as part of this LVIA, 10 (VP1, 2, 7, 8, 13, 17, 20-24) were selected as being relevant to the consideration of visual effects. The others either fell outside of the ZTV pattern or were not considered relevant.

One of the viewpoints (VP8) experienced the highest likely visual impact recorded; that of 'Moderate-Slight' Visual Impact Significance. Six of the viewpoints (VP1, 2, 7, 21, 22 and

24) experienced a 'Slight' Visual Impact Significance. Except for VP8 which lies 3.6km distant, all of these viewpoints are over 7km from the proposed scheme. All of the other viewpoints experienced 'Slight-Imperceptible' or 'Imperceptible' Visual Impact Significance.

In many instances, the modest effects are a result of the distance at which the turbines would be seen, but also, the expansive nature of the views and the limited degree to which the proposed turbine array would feature within it. Similarly, from many of these locations, the scenic aspects of the view are not considered to lie with the site, but rather views available in other directions, reducing the degree to which views of the proposed turbines impact the view.

Thus, it is **not considered that the Proposed Development will generate significant visual impacts** on designated scenic routes and views.

#### 12.6.3.4 Visual impacts on centres of population

As previously set out in Section 12.3, there are numerous settlements throughout the Study Area. In total, of the 25 viewpoints assessed as part of this LVIA, five (VP3, 14, 15, 17, 19) are located within centres of population, albeit it is recognised that the landscape is widely settled and there are numerous properties dispersed throughout the wider landscape.

The sensitivity of these views ranges between High-Medium and Medium-low with the higher-ranging sensitivities associated with designated scenic areas, where comparatively broad, and long-ranging views are afforded across the wider landscape.

One of the viewpoints (VP15) experienced the highest likely visual impact recorded for the Proposed Development; that of 'Moderate' Visual Impact Significance. This reflected views available from Fieldstown, an area of population to the south of the site (1.4km) where the turbines would occupy that part of the view where views are available towards the distant Cooley Mountains. Residual impacts at this location are considered to relate more to the sensitivity of the location and visual receptors, than to the magnitude of change.

Two of the viewpoints (VP3 and 14) experienced 'Moderate-Slight' Visual Impact Significance, and represent views from the southern edge of Dunleer, and Milltown respectively. At between 3.3 and 3.5km, the turbines will present at a modest scale.

Other viewpoints (representing Termonfeckin, and Drogheda) experienced no greater than 'Slight' Visual Impact Significance.

As a result of the reasons outlined above, it is **not considered that the Proposed Development will result in significant visual impacts** on Centres of Population within the Study Area.

#### 12.6.3.5 Visual impacts on major routes

As previously set out in **Section 12.3**, there are multiple major routes within the Study Area. In total, of the 25 viewpoints assessed as part of this LVIA, five (VP1, 3, 17, 20, and 25) are from major routes, located on regional roads.

The sensitivity ranges between High-Medium and Medium with the higher ranging sensitivities associated with designated scenic routes.

One of the viewpoints (VP 25) experienced the highest likely visual impact recorded; that of 'Moderate' Visual Impact Significance. This reflected views available from the R132 at Roxborough where it passes the site within approximately 1.5km, and where owing to proximity, the turbines would appear prominently in transient oblique views.

One of the viewpoints (VP3) experienced 'Moderate-Slight' Visual Impact Significance, where at 3.5km, the turbines will present at a modest scale. Other viewpoints experienced no greater than 'Slight' Visual Impact Significance.

In many instances, the modest effects are a result of the distance at which the turbines would be seen, but also, the expansive nature of the views and the limited degree to which the proposed turbine array would feature within it. particularly in the context of transient visual receptors travelling at often high speeds

As a result of the reasons outlined above, it is **not considered that any significant visual impacts will occur** for visual receptors on major routes.

#### 12.6.3.6 Visual Impacts on Tourism, Recreational & Heritage Features

As previously set out in **Section 12.3**, there are numerous tourism, recreational & heritage features within the Study Area, some of which are considered to be of international importance. In total, of the 25 viewpoints assessed as part of this LVIA, ten (VP 3, 10, 13, 18, 21-25) adhere to this receptor type.

The sensitivity of these views ranges between Very High-High and Medium-Low. The higher-ranging sensitivities are associated with the iconic heritage sites throughout the Boyne Valley, which include Monasterboice (VP13), the Hill of Slane (VP21) and the iconic passage tombs at Brú na Bóinne (VP22, 23, and 24), all of which have a strong relationship

with their wider landscape context. In the case of VP10 and VP18 which reflect the Drumshallon Forge Heritage Centre and the Irish Military Museum at Starinagh, whilst views are available from car parking and curtilage areas, the museum is a contained element to which the wider landscape plays a minor part. As such, sensitivities are lower-ranging.

One of the viewpoints (VP10) experienced the highest likely visual impact recorded, that of 'Substantial-Moderate' Visual Impact Significance. This represents visitors to the Drumshallon Forge Heritage Centre, where views of the turbines are seen at under 1km, and where their prominent visual presence is accentuated by the slightly uphill nature of the view at this location. As stated, these effects relate to external car parking areas only.

VP 25, and VP3, which reflect users of the Táin Trail Cycling and Touring Route experienced a 'Moderate' and 'Moderate-Slight' visual impact significance respectively, where these pass between 1.5km and 3.5km from the site respectively.

Other locations include the Monasterboice Cemetery car park (VP13), and the Irish Military Museum at Starinagh (VP18), where views are screened or seen at greater distances respectively, which reduces the degree to which the turbines influence views. This results in users receiving 'Imperceptible' and 'Slight' visual impact significance respectively.

Viewpoints 21 to 24 have been discussed previously, albeit it is noted that these locations are key locations on the Boyne Valley Drive waymarked driving route. Except for a section of road south of Monasterboice and west of the M1 road corridor where views may be marginally more open and proximate (just over 3km), views from the drive would be more marginal given the relatively elevated nature of these viewpoint locations and the roadside vegetation that would preclude wider views towards the site. Where views are possible from the waymarked driving route, the judgements are considered relevant, whereby the Proposed Development would give rise to no greater than a 'Slight' likely visual impact significance.

It is **not considered that the Proposed Development will generate significant visual impacts** concerning views from these tourism, recreational, and heritage features, and routes.

### 12.6.4 Consideration of wind turbine parameters

As outlined within the methodology, the LVIA is based on candidate Turbine Scenario 3 (as presented in Table 1.5) which has a maximum tip height dimension of 180 m, and a median hub height and rotor diameter. Compared with candidate turbine Scenarios 1 and 2, Scenario 3 had the greatest overall turbine height, which allowed the greatest level of

potential visibility to form the basis of the LVIA. In terms of the median characteristics of the hub height and rotor diameter, Scenario 3 offered a minimal departure from the dimensions of candidate turbine Scenarios 1 and 2 and was therefore considered more relevant and representative as the basis of the main assessment.

In order to examine the full range of potential wind turbine dimensions and to illustrate the corresponding immaterial impact, Macro Works prepared comparative photomontages at three of the previously selected viewpoints (VP3, VP7 and VP15) to represent short and mid-distance views of the Proposed Development in differing contexts. It was not considered necessary to use long-distance views (10 km+) for this comparative exercise as any variation in turbine dimensions of the order proposed would be discernible at longer distances.

As can be seen from the comparative photomontages (contained at the end of the Photomontage Volume) the variation in turbine dimensions is difficult to discern across the three scenarios even with considerable scrutiny. This is unsurprising as the overall height of candidate Turbine Scenario 3 is only 0.5m greater, with the variation in hub height (between 6-8 m), and rotor diameter (between 2.5 and 4.5 m), being considered negligible in the context of the scale of the turbines proposed.

Regardless of whether the difference between the alternative turbine dimensions presented in the comparative photomontages can be discerned or not, it is considered that there is no material difference in the level of visual impact between them and certainly no impact that is greater than that presented in the main body of the LVIA. As such, the submitted LVIA is deemed to comfortably cover the range of potential turbine dimension options proposed and it is not considered necessary to prepare separate photomontages/assessments at all viewpoints for all possible turbine dimensions within the range.

#### 12.6.4.1 Visual impacts Conclusion

Based on the visual impact assessment outlined in **Sections 12.4.4.1 - 12.4.4.5** above, it is not considered that the Proposed Development will generate significant visual impacts at receptors in the Central Study Area or Wider Study Area.

### 12.6.5 Decommissioning Phase

The decommissioning Phase will see the removal of all turbines and infrastructure from the site, with areas of hard standing that are of no further use reinstated and reseeded to blend with the prevailing surrounding land cover of the time.

The Decommissioning phase will see a similar nature of effects to the construction stage due to the movement of heavy machinery within the Site and to and from the Site removing turbine components. However, such effects will be temporary in duration and decrease in scale as turbines are removed from view and the landscape is substantially reinstated.

As with construction stage impacts, Decommissioning stage effects are not considered to be significant.

### 12.6.6 Cumulative Impacts

Whilst not relating to wind energy proposals, given its relationship with the site, consideration has been given to the cumulative impact of the proposed development with the nearby Kilsaran Quarry Extension. It is noted from the LVIA produced in relation to that application that the continued operation of the quarry and the consented extension would either not be visible, or would be negligibly so, and as such its potential to generate significant cumulative landscape and visual effects would be negligible. The consideration of cumulative landscape and visual effects is therefore placed principally on the cumulative wind energy developments outlined in Table 2.1.

Cumulative ZTV maps are provided in Figures 12.13 and 12.14. A colour grading has been employed to illustrate the following types of visibility:

- Blue wash: indicates parts of the Study Area where theoretical visibility of the Proposed Development occurs in isolation and therefore where the proposed turbines will not be seen in combination with existing (and/or 'in-planning') turbines in the landscape;
- Pink wash: indicates parts of the Study Area where the proposed development has the potential to be seen cumulatively with the existing (and/or 'in-planning') wind farms;
- Green wash: indicates parts of the Study Area where the proposed development would not be visible, but existing (and/or 'in-planning') wind turbines would be.

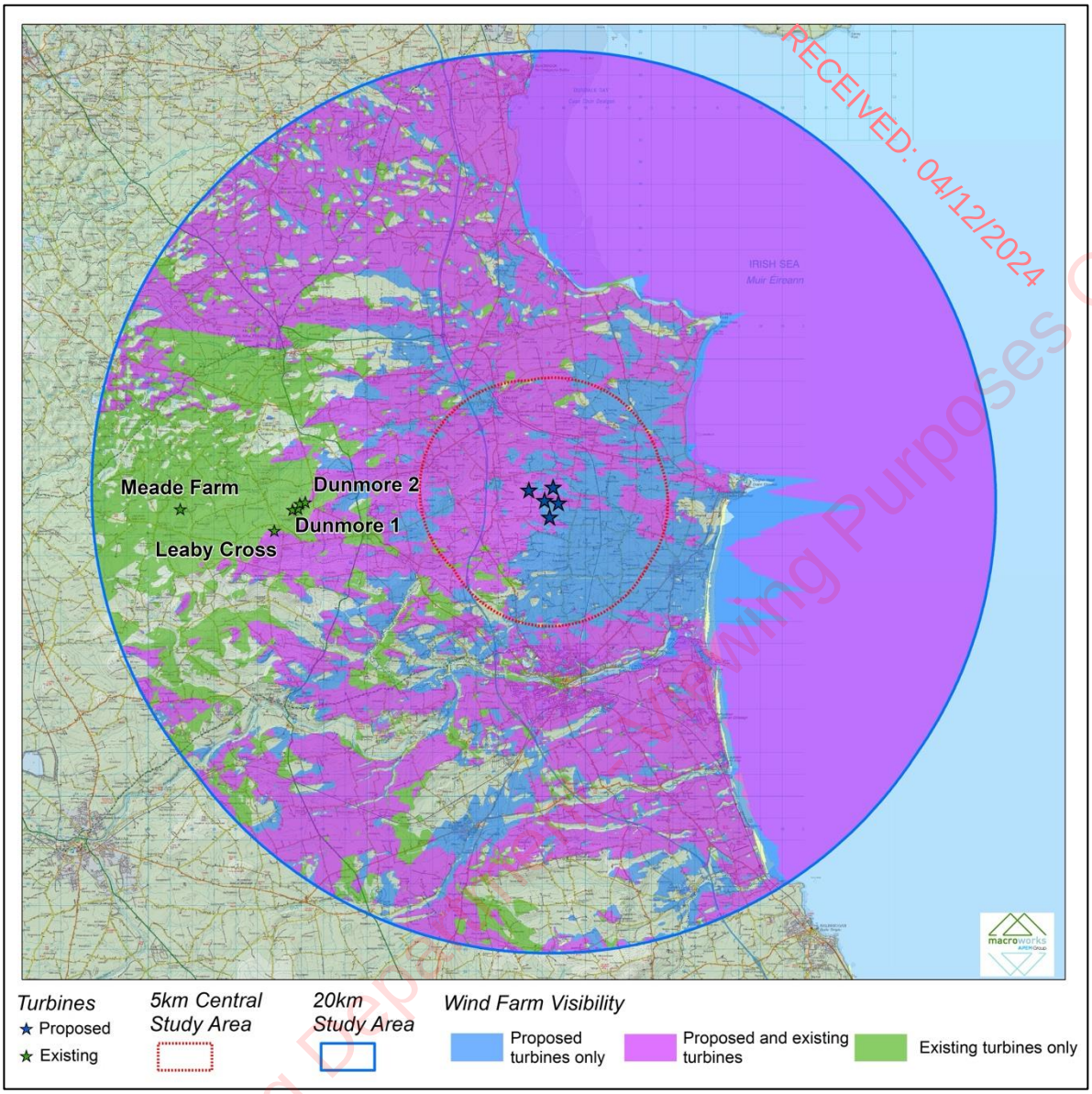


**Figure 12.13 - Cumulative ZTV (Zone of Theoretic Visibility) showing the theoretical potential for cumulative visibility of the Proposed Development and other existing wind farm developments within the Study Area. (See Volume III for larger scale map)**

As with other ZTV mapping presented, it is important to note that the cumulative ZTVs are based on bare-ground data and that cumulative wind farm visibility is likely to be much less than identified on the ZTV maps. Given the relative scale of the existing turbines and their distance from the proposed site, in combination with the influence of undulating topography and vegetative features that occur throughout this landscape, it inherently overemphasises the degree to which the proposed development would be seen cumulatively.

In relation to the proposed turbines only, the cumulative ZTV highlights that within the 20km Study Area, the Proposed Development has the potential to be viewed in isolation for 13.5% of the Study Area. The geographical area to which this relates is primarily the less elevated parts of the landscape to the east, northeast, and southeast of the proposed turbines, and

then in pockets of landscape throughout the Wider Study Area where topography acts to screen views of existing turbines.

In relation to the existing wind turbines, these have the potential to be viewed in isolation for 10.9% of the Study Area. The geographical area to which this relates is primarily within the western part of the Study Area (indicated by the green pattern), where the hill range precludes views further east. Again, theoretical visibility extends to other areas of the landscape where topography restricts views of the proposed turbines.

Given the topographical character of the Study Area, and the scale and relative elevation of both the existing and proposed turbines, it is unsurprising that the ZTV indicates that 63.3% of the Study Area has theoretical potential for visibility of both the Proposed Development and the other existing wind farm developments. This is relatively extensive in its coverage, and it is recognised that only 12.3% of the Study Area has no theoretical visibility of either the existing or proposed turbines.

It is important to note that the 63.3% combined visibility includes approximately one-third of the Study Area (32.9%) that relates to open water. In terms of the potential for cumulative landscape and visual effects, and with a focus on land-based receptors, the ZTV indicates that only 32.3% of the Study Area offers theoretical land-based cumulative visibility where both the existing and proposed turbines are theoretically possible in combination.

Given that these figures relate to bare-ground data only, the figures presented are considered the worst case, and the extent of the Study Area to which the turbines may be seen cumulatively will be considerably less, once the screening effects of existing vegetation and surrounding built development are incorporated.

With the existing wind farms located within the western portion of the Study Area, the potential for the most notable cumulative landscape and visual issues, occurs in the western portion of the Study Area, and in the landscape between the existing and proposed turbines, where they have the potential to be visible within around 6km of any given location. This area of landscape includes the M1 and N2 Road corridors, the R162 and R132 roads, and other small roads that traverse the intervening landscape. Where combined visibility is possible, this would be in succession, where the turbines would appear in different directions.

Where the existing and proposed turbines have the potential to be visible in combination (i.e. in the same view), the respective turbines would be at such distances that they would appear as distinctly separate clusters and would have minimal influence on the other. From

locations to the north, east and south of the proposed Wind Farm, given their comparative scale, the proposed turbines would generally be perceived as existing in isolation.

In terms of sequential visual effects, it is noted that the landscape plays host to numerous roads, and promoted recreational routes that afford sequential views over the landscape over a range of distances and that the undulating character, and layers of vegetation present in the landscape act to generate varying degrees of visibility. Where visible sequentially, given the distance between the existing and proposed turbines, the undulating nature of the landscape, and the vegetative features that occur throughout the landscape, cumulative visibility will be occasional and infrequent, and the existing and proposed turbines would be seen as distinctly separate clusters in separate parts of the view.

Where visible in combination or sequentially, although the scale of the proposed turbines is greater than the existing turbines, given their relative distance, it is not considered that this will generate any visual conflict or distance distortion. Separation distances will minimise any visual tension caused as a result of clutter or scale confusion, and given the number of turbines present, there will be little sense of being surrounded by turbines.

Figure 12.4 illustrates the potential influence of the single wind turbine to the north of the site. Whilst this turbine is not present in the landscape, and is subject to planning permission (currently at appeal), a comparative exercise was undertaken to understand the potential influence of this turbine on cumulative baseline scenario.

In this cumulative scenario, the proposed turbines would be theoretically visible in isolation for 10.1% of the Study Area. This is comparable, but slightly reduced in extent and location to that previously described (13.5%), as would be expected when additional turbines are being incorporated into the analysis.

In the context of locations where the existing, 'in-planning', and proposed turbines are theoretically visible, the ZTV indicates that 66.6% of the Study Area has theoretical potential for visibility, comparable in extent and location to that previously described (63.3%). This equates to 35% theoretical land-based cumulative visibility within the study area, which is only marginally greater than previously described (32.9%).

Of the Study Area with no potential for any visibility of existing, 'in-planning', and proposed turbines, this would be marginally reduced to 10.2% (from 12.3%).

As a single turbine of a smaller overall height, and at over 19.5km distance from the proposed wind turbines, its presence is not considered to have the potential to generate any noteworthy or meaningful influence on the cumulative baseline against which the

proposals are assessed. At such distances, where seen in combination, the proposed and 'in-planning' turbines would not generate any visual conflict or distance distortion, visual tension, or visual clutter.

Given the separation distances, the cumulative influence of this additional turbine would be most relevant in relation to landscape and visual receptors to the north of the proposed site, where successional visibility of the proposed and 'in planning' turbines may be possible in opposite directions. Where this is the case, the existing and 'in-planning' turbines would be seen as distant visible elements respectively at distances of over 9km. Whilst this turbine would introduce wind energy infrastructure to the landscape to the north of the site, as a single turbine it is not considered to have the potential to generate any perceivable sense of being surrounded by turbines.

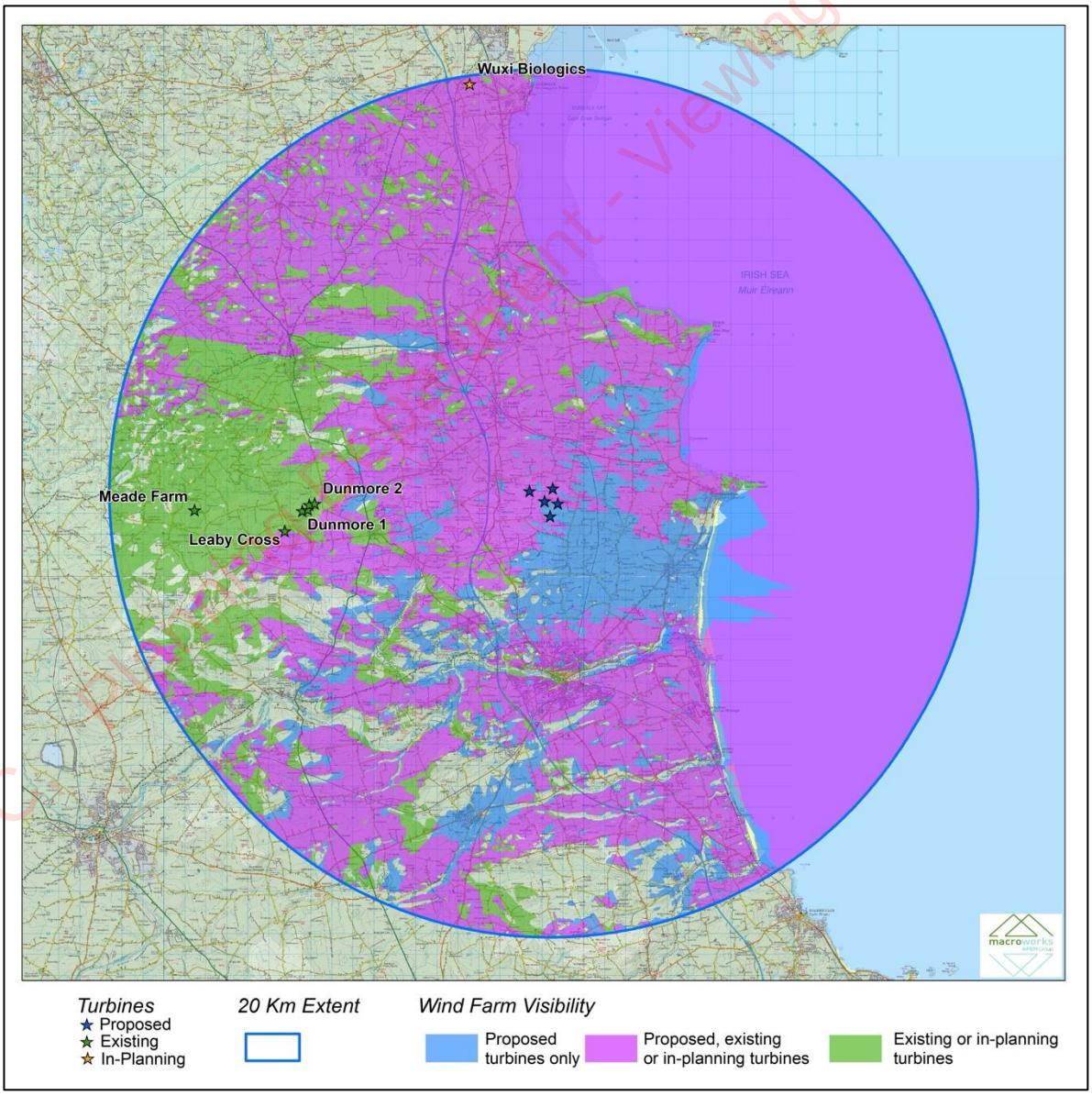

**Figure 12.14 - Cumulative ZTV (Zone of Theoretic Visibility) showing the theoretical potential for cumulative visibility of the Proposed Development and other existing and 'in-planning' wind farm developments within the Study Area. (See Volume III for larger scale map)**



**Summary**

The proposed wind farm will be one of only a few present in the wider landscape, and in the great majority of instances will be viewed in isolation. The influence of the WuXi turbine on the cumulaitvve baseline againstwhich the proposals are assessed is considered negligible.

As such, and in relation to other reasons outlined above, it is considered that the proposed wind farm will contribute to cumulative impacts in a very minor way. Overall, the magnitude of cumulative impact is deemed to be low.

## 12.7 INTERACTIONS

The Proposed Development involves features and activities that have the potential to generate physical changes to the landscape and visual environment (both physical and perceptual), which will also incur wider environmental impacts. This includes aspects relating to vegetation loss, construction of access roads and road junctions, and the presence of construction and maintenance plant on the site. Likewise, there are aspects (such as noise) that have the potential to influence experiential aspects of landscape character.

Whilst these aspects will generate a degree of change to the landscape and visual environment, the main interactions relate to the construction and presence of the turbines and other vertical infrastructure due to their visibility.

The main interactions are considered to relate to Population and Human Health, and Cultural Heritage as follows:

**Landscape and Visual and Population and Human Health**

Landscape and Visual impacts arising from the construction, operation, and decommissioning of the wind turbines are considered in the LVIA with respect to the effect on perceived landscape character, views and on the general visual amenity experienced by people, including local residents. Proportionately, the operational effects of the turbines are considered to give rise to the most notable landscape and visual effects given the long-term nature of the change, and a greater focus is placed on them. However, whilst they have the potential to be prominent, the turbines will be seen in the context of a modified landscape, and it is noted that the findings of the assessment did not identify any significant impacts in

relation to receptors in the Central or Wider Study Area. The findings of the LVIA have contributed to the Population and Human Health assessment.

**Landscape and Visual and Cultural Heritage**

Common receptors were considered in relation to landscape character and the setting of heritage features as well as views from heritage features visited by the public and for whom views of the landscape are a contributing factor to the experience. Whilst the turbines have the potential to be visible, they will be seen in the context of an extensively modified landscape. From particularly important locations such as Brú na Bóinne, the turbines would be seen at a considerable distance as a small part of wider panoramic views within which other turbines are visible. Again, it is noted that the findings of the assessment did not identify any significant impacts in relation to receptors in the Central or Wider Study Area.

## 12.8 SUMMARY OF SIGNIFICANT EFFECTS

It is not considered that there will be any significant effects arising from the proposed Kellystown Wind Farm.

## 12.9 STATEMENT OF SIGNIFICANCE

Based on the landscape, visual and cumulative assessment contained herein, it is considered that there will not be any significant effects arising from the proposed Kellystown Wind Farm.

## 12.10 REFERENCES


- Environmental Protection Agency (EPA) publication 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports (2022) and the accompanying Advice Notes on Current Practice in the Preparation of Environmental Impact Assessment Reports;
- Landscape Institute and the Institute of Environmental Management and Assessment publication entitled Guidelines for Landscape and Visual Impact Assessment – Third Edition (2013);
- NatureScot: Assessing the cumulative landscape and visual impact of onshore wind energy developments (2021);
- Department of the Environment, Heritage and Local Government Wind Energy Development Guidelines (2006) and Draft Revised Wind Energy Development Guidelines (2019);

- Scottish Natural Heritage (SNH) Visual representation of wind farms: Best Practice Guidelines (version 2.2 - 2017); and
- Landscape Institute Technical Guidance Note (TGN) 06/19 Visual Representation of development proposals (2019)