

9 LANDSCAPE AND VISUAL

9.1 INTRODUCTION

This report describes the landscape and visual context of the proposed Kilcumber Bridge 110kV substation in the townlands of Ballykilleen, Cloncreen and Ballinowlart North, County Offaly and assesses the likely impacts of the proposed development on the receiving environment, in terms of both landscape and visual.

Landscape Impact Assessment (LIA) relates to changes in the physical environment, brought about by a proposed development, which may alter its character. This requires a detailed analysis of the individual elements and characteristics of a landscape that go together to make up the overall character of that area. By understanding the aspects that contribute to this 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 changes in the composition of views as a result of changes to the landscape, how these are perceived and the effects on visual amenity. Such impacts are population based rather than resource based as in the case of landscape impacts.

Cumulative impact assessment relates to the effect of proposed development in addition to other relevant permitted developments. In this case there is the permitted Cushaling Wind Farm (with associated permitted Ballykilleen substation immediately adjoining the proposed development); and the permitted Cloncreen Wind Farm (with associated permitted substation).

9.1.1 Relevant Guidance

This landscape and visual impact assessment is based on:

- EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports (2002) and an updated version published in 2017
- Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, UK Landscape Institute
- Landscape related designations in the Offaly County Development Plan 2014-2020 and Draft Plan 2021-2017.

9.1.2 Statement Of Authority

This Landscape and Visual Assessment report was prepared by Macro Works Ltd of Cherrywood Business Park, Loughlinstown, Dublin 18; a consultancy firm specialising in Landscape and Visual Assessment and associated maps and graphics. Relevant experience includes a vast range of infrastructural, industrial and commercial projects since 1999, including numerous electrical infrastructure projects.

9.1.3 Methodology

Production of this Landscape and Visual Impact Assessment involved;

- A desktop study to establish an appropriate study area, relevant landscape and visual designations in the Offaly County Development Plan 2014-2020 (as amended), as well as other sensitive visual receptors. This stage culminated in the selection of a set of six potential viewpoints from which to study the likely effects of the proposed development;
- Fieldwork to establish the landscape character of the receiving environment and to confirm and refine the set of viewpoints to be used for the visual assessment stage;
- Assessment of the significance of the landscape impact of the proposal as a function of landscape sensitivity weighed against the magnitude of the landscape impact;
- Assessment of the significance of the visual impact of the proposal as a function of visual receptor sensitivity weighed against the magnitude of the visual impact.

9.1.4 Assessment Criteria

9.1.4.1 Landscape Criteria

When assessing the potential impacts on the landscape resulting from a proposed development, the following criteria are considered:

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

9.1.4.1.1 Landscape Sensitivity

The sensitivity of the landscape to change is the degree to which a particular receptor (Landscape Character Area (LCA) or feature) can accommodate changes or new features without unacceptable detrimental effects to its essential characteristics. Landscape value and sensitivity is classified using the following criteria derived from GLVIA (Table 9.1 refers):

Table 9.1: Landscape Value and Sensitivity

Landscape Sensitivity	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 (e.g. World Heritage Site), 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 landscape, protected at a national or regional level (National Parks), 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 landscape, 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 landscape that may also have some elements or features of recognisable quality, where landscape management objectives relate to enhancement rather than protection.

Negligible	Areas of landscape character that include dereliction and industrial uses 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 value.
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9.1.4.1.2 Magnitude of landscape Impacts

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 application site boundary that may have an effect on the landscape character of the area. The criteria are set out in Table 9.2.

Table 9.2: Magnitude of Landscape Impacts

Magnitude of Impact	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.

9.1.4.2 *Visual Criteria*

As with the landscape impact, the visual impact of the proposed development will be assessed as a function of sensitivity versus magnitude. In this instance the sensitivity of the visual receptor (viewer), weighed against the magnitude of the visual effect.

9.1.4.2.1 Sensitivity of Visual Receptors

Unlike landscape sensitivity, the sensitivity of visual receptors has an anthropocentric basis. It considers factors such as the perceived quality and values associated with the view, the landscape context of the viewer, the likely activity they are engaged in and whether this heightens their awareness of the surrounding landscape. A list of the factors considered by the assessor in estimating the level of sensitivity for a particular visual receptor is outlined below and used in Table 9.6 in Section 9.2.4 to establish visual receptor sensitivity at each Viewshed Reference Point:

- Susceptibility of Receptors - In accordance with the Institute of Environmental Management and Assessment (“IEMA”) Guidelines for Landscape and Visual Assessment (3rd edition 2013) 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; and
- 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; and
- 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".
- 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 Developments Plans, for example, 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 within 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;
- Primary views from dwellings. A proposed development might be seen from anywhere within a particular residential property with varying degrees of sensitivity. Therefore, this category is reserved for those instances in which the design of dwellings or housing estates, has been influenced by the desire to take in a particular view. This might involve the use of a slope or the specific orientation of a house and/or its internal social rooms and exterior spaces;
- Intensity of use, popularity. This relates to the number of viewers likely to experience a view on a regular basis and whether this is significant at 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. Receptors taking in a remote and tranquil scene, which is likely to be fairly static, are likely to be more receptive to changes in the view than those taking in the view of 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 distinctly manmade features;

- 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 and / or spiritual significance. Such attributes may be evident or sensed by receptors at certain viewing locations, which may 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 the receptor could take in similar views anywhere in the broader region or the country;
- Integrity of the landscape character. This looks at 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 considers whether there is special sense of wholeness and harmony at the viewing location; and
- Sense of awe. This considers whether the view inspires an overwhelming sense of scale or the power of nature.

Those locations which are deemed to satisfy many of the above criteria are likely to be of higher sensitivity. Overall sensitivity may be a result of a number of these factors or, alternatively, a strong association with one or two in particular.

9.1.4.2.2 Magnitude of Visual Impacts

The magnitude of visual effects is determined on the basis of two factors: the visual presence (relative visual dominance) of the proposed development, as well as its effect on visual amenity. The magnitude of visual impacts is classified in Table 9.3, which is derived from the aforementioned Guidelines for Landscape and Visual Impact Assessment (2013).

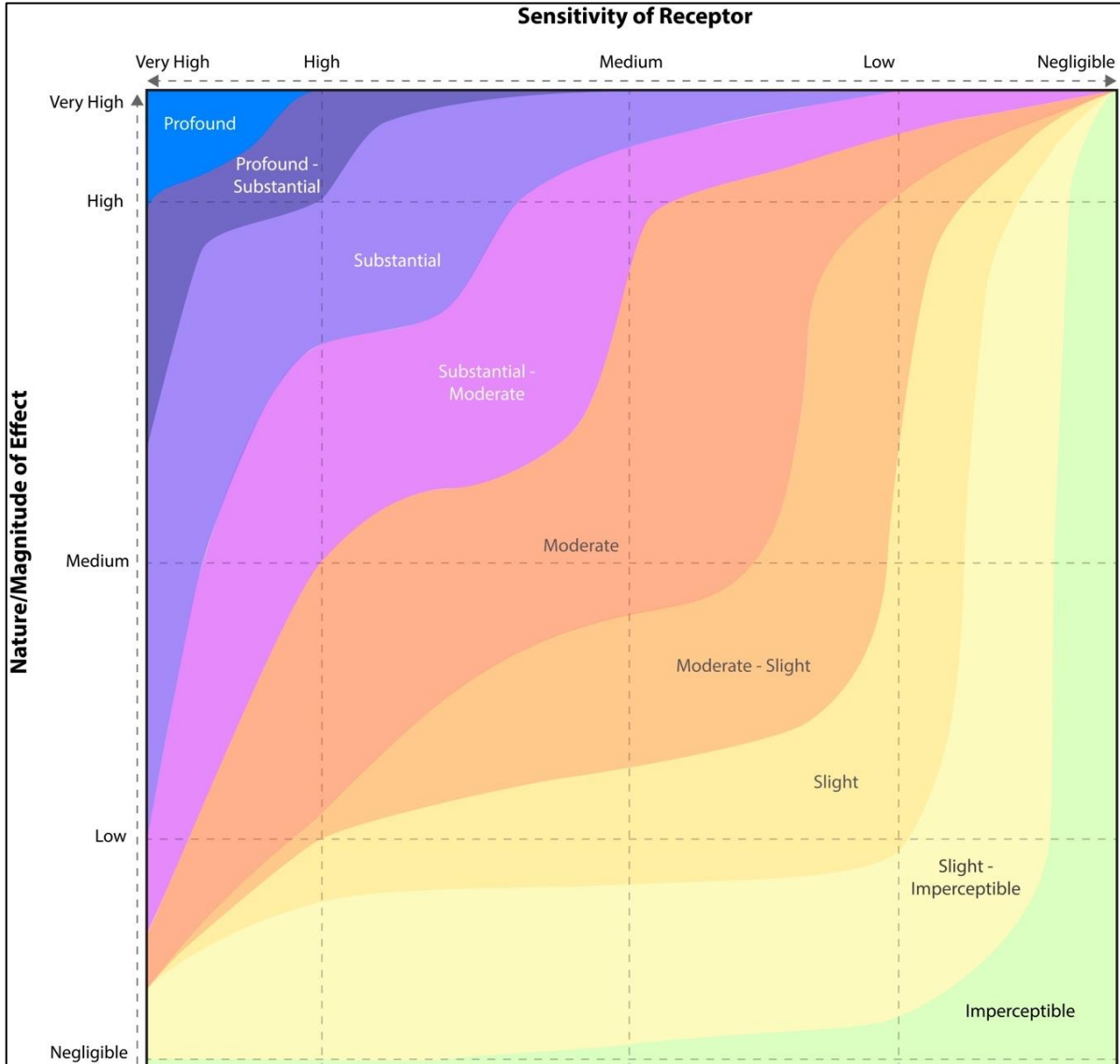
Table 9.3: Magnitude of Visual Impacts

Magnitude of Impact	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 clutter 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 clutter 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 clutter 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.

9.1.4.3 Impact Significance for Landscape and Visual

The significance of impact is based on a balance between the sensitivity of the landscape or visual receptor and the magnitude of the impact on the receptor. The significance of landscape impacts is arrived at using the following matrix, which is derived from the GLVIA (Table 9.4 refers):

Table 9.4: Impact Significance Matrix



Note: Judgements deemed 'substantial' and above are considered to be 'significant impacts' in EIA terms.

9.1.5 Definition Of Study Area

The proposed development is likely to be difficult to discern beyond approximately 2km and even if visible, is not likely to give rise to significant landscape or visual impacts beyond this distance, therefore a 2km radius study area is used in this instance.



Figure 9.1: Landscape and visual study area

9.2 EXISTING ENVIRONMENT

The landscape baseline represents the existing landscape context and is the scenario against which any changes to the landscape brought about by the development will be assessed. A description of the landscape context of the site and wider study area is provided below. 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 in Section 9.2.2.)

9.2.1 Landscape Baseline

9.2.1.1 Landform and Drainage

The landform of the study area is characterised by flat to low rolling terrain which is typical of the midlands of Ireland. The application site and its immediate surrounds lie at between 60 to 70m Above Ordnance Datum (AOD), with much of the surrounding landscape comprising of exceptionally flat peatbogs. The most notable landscape feature in relation to the site is that of Ballykilleen Hill, which rises to a max height of c. 109 AOD at the northern periphery of the study area. The site itself is bound to the south by the Figile River, which meanders through the study area in a general southerly direction.

9.2.1.2 Vegetation and Land Use

The predominant land use within the study area is that of agricultural farmland, which comprises of medium to large sized geometric fields that are often bound by dense mature tree lined hedgerows. A large proportion of the study area is occupied by notable areas of former industrial bog, primarily cutaway now, with some areas of commercial forestry, regenerating scrub, wetlands and woodland. There is a vegetated esker in the north-eastern periphery of the study area. A number of large overhead transmission lines also traverse the southern portion of the study area, many of which originate from Edenderry Power Plant which is situated immediately to the east of the application site.

9.2.1.3 Centres of Population and Houses

The proposed development is located approximately 2.8km to the north of the settlement of Clonbullogue and 6.4km to the southwest of Edenderry. Aside from the immediate surrounds of the largescale peatbogs within the study area, which are typically sparsely populated areas, there is a rural population that comprises of isolated farmsteads and small linear clusters of dwellings in the drier areas. The nearest dwellings to the proposed development are located along the R401 regional road that flanks the eastern boundary of the application site.

9.2.1.4 Transport Routes

The most notable transport route in relation to the proposed development is the R401 regional road. Oriented in a north-south direction, this road passes immediately to the east the application site. There are few local roads in the study area but there are several private access tracks. Within the peatbogs there is an Industrial Railways network.

9.2.1.5 Public Amenities, Facilities and Heritage Features

No public amenities or facilities were identified within the study area.

9.2.1.6 Offaly County Development Plan 2014-2020

The Offaly County Development Plan contains information on the character of the county’s landscape and has set out views and prospects which are important at county level. This section sets out the sensitive parts of the landscape most relevant to this assessment.

9.2.1.6.1 Landscape Classification

The Offaly CDP does not designate specific Landscape Character Areas. Instead, landscape areas or features are classified as being of ‘high’, ‘medium’ or ‘low’ sensitivity. It describes the sensitivity of a landscape as ‘the measure of its ability to accommodate change or intervention without suffering unacceptable effects to its character and values.’ Table 7.11.1 in the Offaly CDP outlines the general classifications of sensitivity and an extract is included below in Figure 9.2. The site is located in an area of Offaly which has been designated as having ‘low’ sensitivity (Figure 9.3 refers). Although the bogs located to the east and west have been designated as ‘medium’ sensitivity and a section adjoining the Figle River in the northern portion of the study area is designated as ‘high’ sensitivity (Figure 9.4 refers).

Sensitivity Class [General Classification]	
<u>LOW SENSITIVITY AREAS</u>	
<ul style="list-style-type: none"> This class largely encompasses the county’s main urban and farming areas. These areas comprise natural enclosing features (e.g. topography, vegetation) which have the capacity to absorb a range of new development 	
Acceptability of Development for consideration	A wide range of Development subject to appropriateness / conditions
Need for Landscaping and Appropriate Design	High
<u>MODERATE SENSITIVITY AREAS</u>	
<ul style="list-style-type: none"> Areas which are generally ‘open’ in character with intrinsic quality and moderate capacity to absorb new development 	
Acceptability of Development for consideration	Some form of development subject to appropriateness / conditions
Need for Landscaping and Appropriate Design	Very High
<u>HIGH SENSITIVITY AREAS</u>	
<ul style="list-style-type: none"> Identified features or areas of natural beauty or interest which have extremely low capacity to absorb new development Areas included within this class are designated Areas of High Amenity¹². 	
Acceptability of Development for consideration	Very limited development subject to appropriateness / conditions
Need for Landscaping and Appropriate Design	Essential

Figure 9.2: Excerpt from the Offaly County Development Plan 2014 – 2020, showing sensitivity classification matrix.

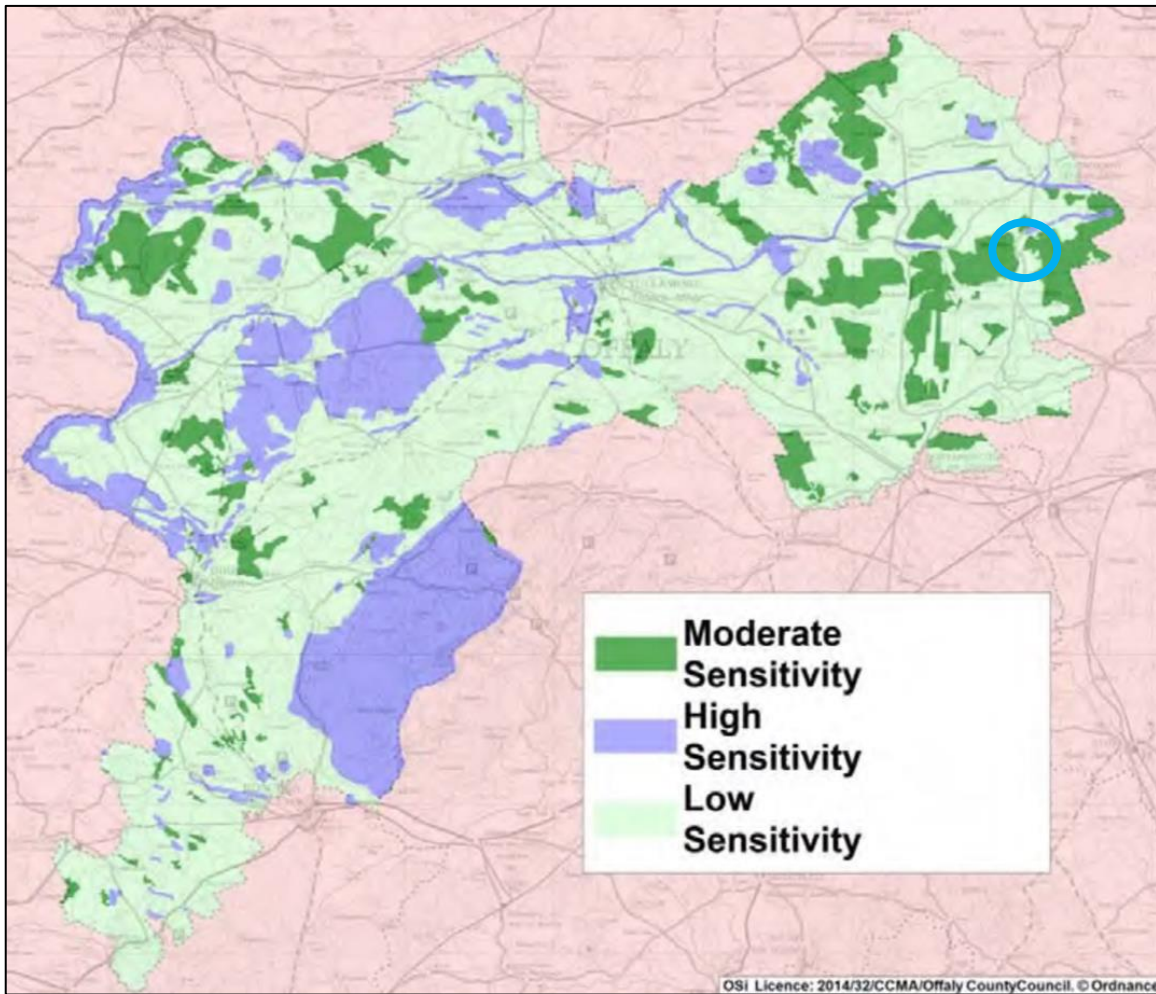


Figure 9.3: Excerpt from map 7.15 Landscape Classification relative to the study area (blue circle)

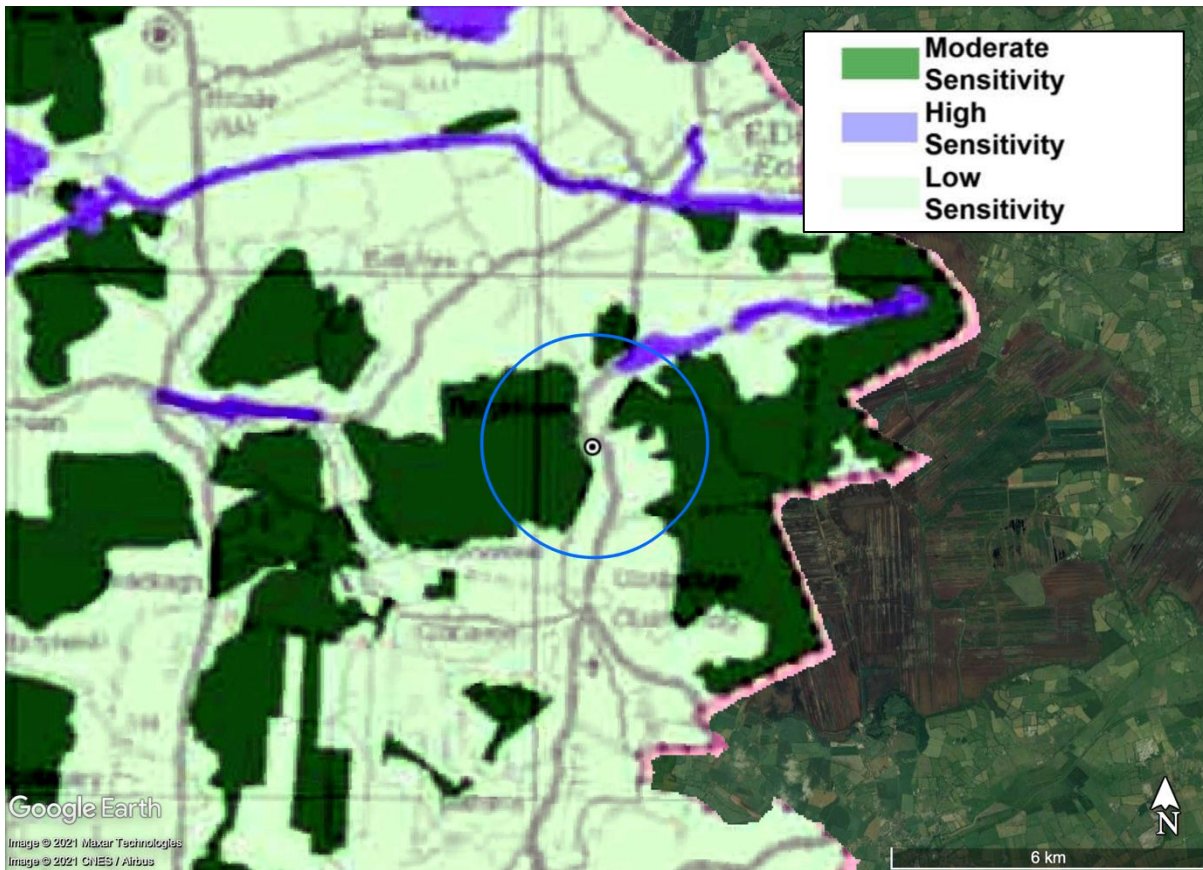


Figure 9.4: Excerpt from map 7.15 Landscape Classification, showing sensitivity classification and approximate location of the application site (centre icon) and relative to the study area (blue circle).

9.2.1.6.2 Amenity and Recreational Value

The Area of High Amenity (AHA) designation aims to protect and enhance areas of scenic and amenity value in Offaly which are worthy of special protection in order to preserve their uniqueness and amenity value. The Offaly CDP highlights an AHA adjoining the Figile River in the northern portion of the study area (Figure 9.5 refers) with extents similar to the area of high sensitivity described above. No other areas or features were identified in the surrounding landscape that are considered to be of particular amenity or recreational importance.

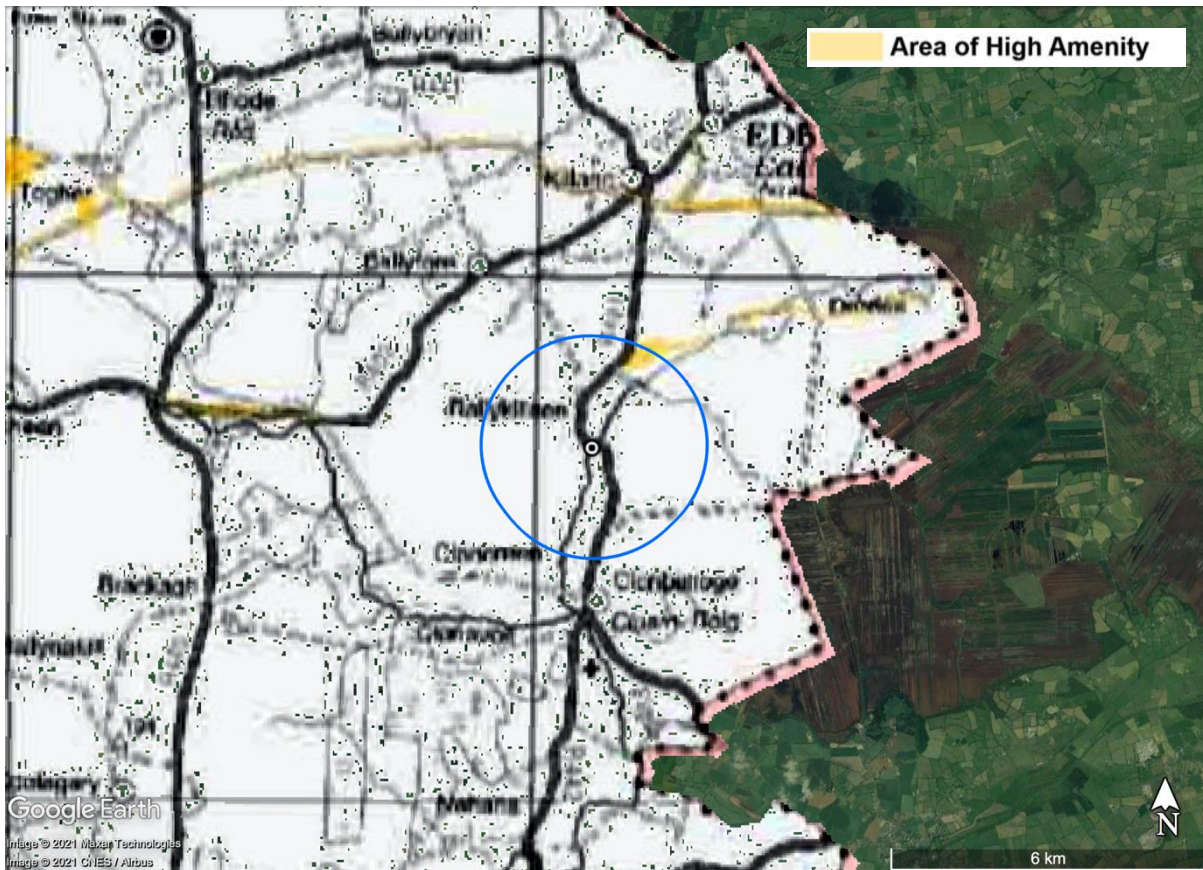


Figure 9.5: Excerpt from map 7.17 showing Areas of High Amenity and approximate location of the application site (centre icon) relative to the study area (blue circle).

9.2.2 Visual Baseline

9.2.2.1 Scenic Designations

Views of recognised scenic value are primarily indicated within local or county development plans in the context of scenic views / routes designations (but they might also be indicated on touring maps, guide books, road side rest stops or on post cards that represent the area.) According to Section 7.12.1 Views and Prospects' of the current Offaly CDP:

“The designation of Areas of High Amenity and scenic amenity routes within County Offaly provide a basis for the protection of views and prospects of certain visually vulnerable features.”

9.2.2.1.1 Scenic Views

The nearest protected view is V09, in the townlands of Grovesend and Coole, with views south to boglands (Figure 9.6 refers). It looks in the direction of the application site but at a distance of over 10km significant impacts as a result of the proposed development are highly unlikely due to the modest scale of the proposed development relative to the notable intervening distance.

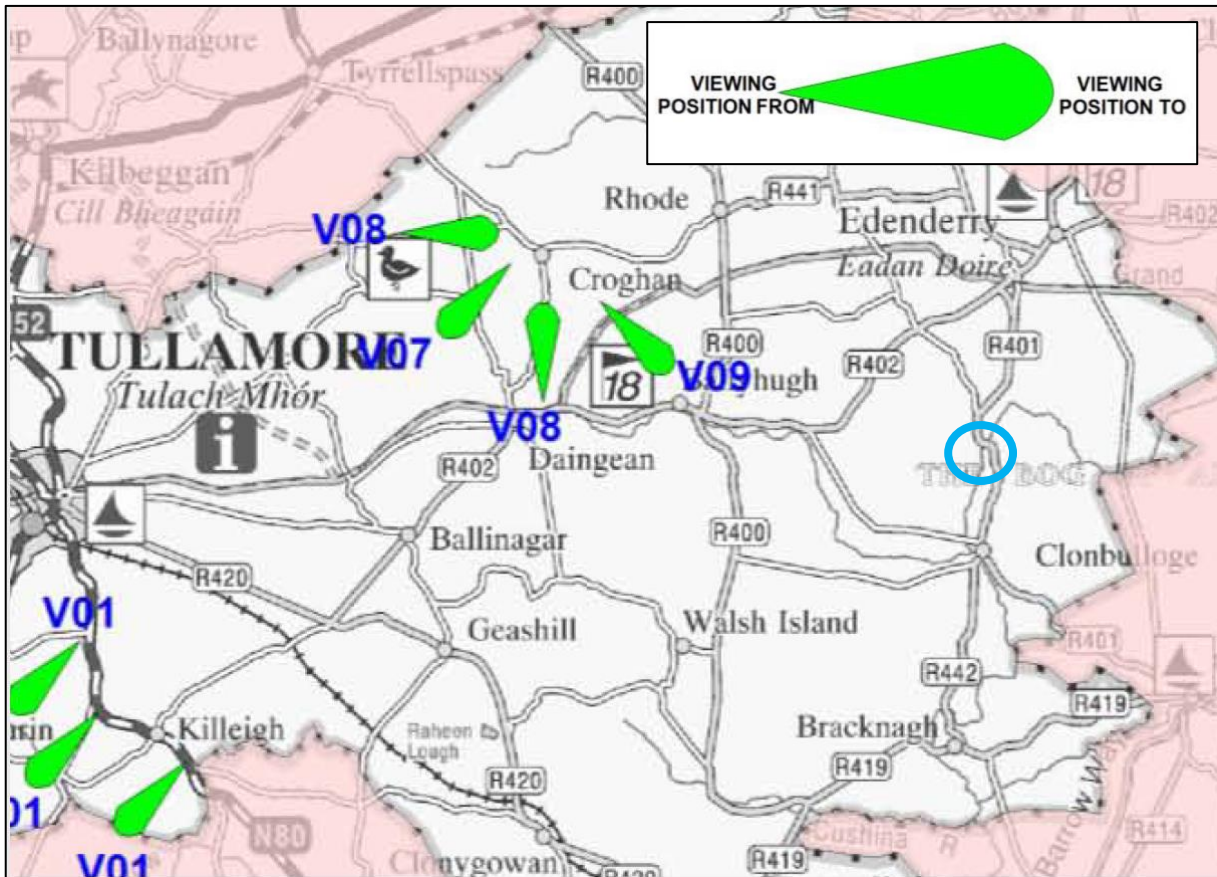


Figure 9.6: Views and Prospects as shown on Map 7.18 in the Offaly County Development Plan relative to the study area (blue circle)

9.2.2.1.2 Scenic amenity routes

No scenic routes as shown in Figure 7.19 of the Offaly County Development Plan will be affected by the proposed development (Figure 9.7 refers).

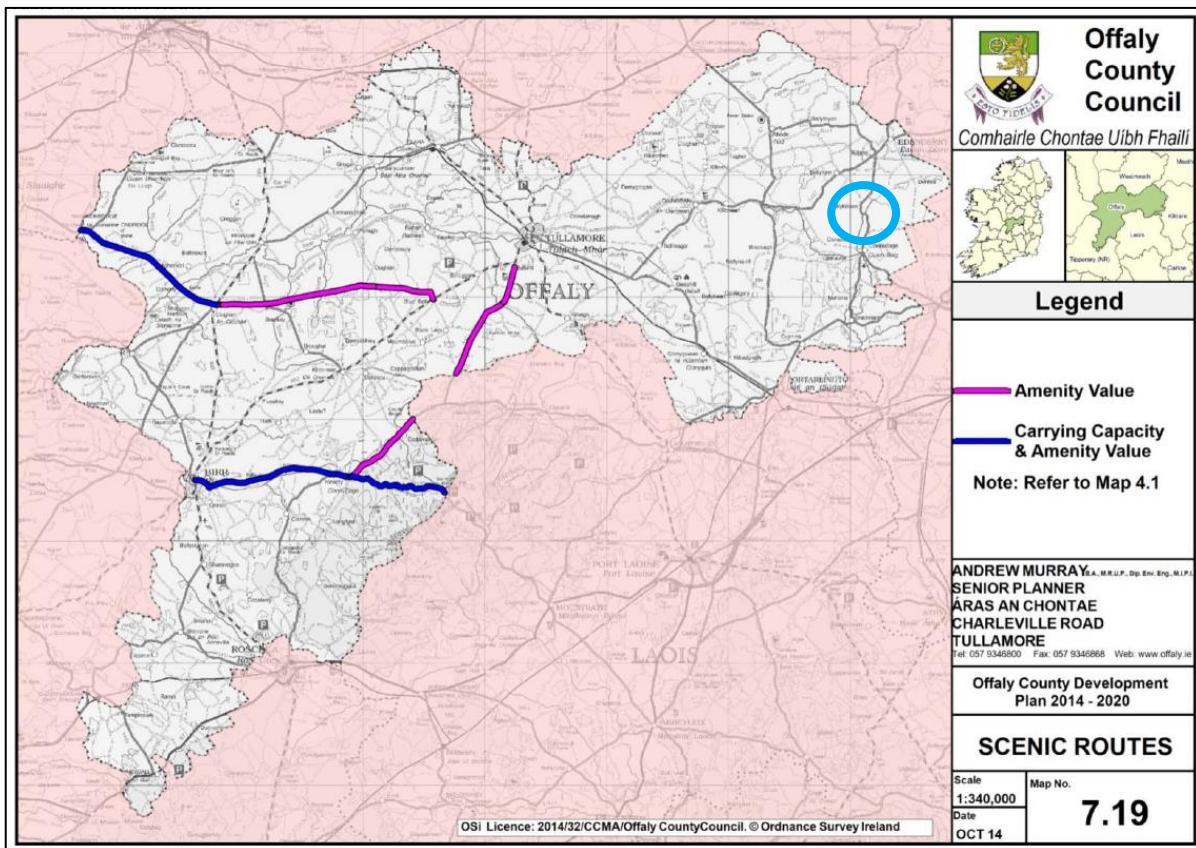


Figure 9.7: Scenic Routes as set out in the Offaly County Development Plan

9.2.2.2 Zone of Theoretical Visibility

Only those parts of the receiving environment that potentially afford views of the proposed development are of concern to this section of the assessment. A computer-generated Zone of Theoretical Visibility (ZTV) map has been prepared to illustrate where the proposed development is potentially visible from. The ZTV map is based solely on terrain data (i.e. bare ground visibility), and ignores features such as trees, hedges or buildings, which may screen views. Given the complex vegetation patterns within this landscape, the main value of this form of ZTV mapping is to determine those parts of the landscape from which the proposed development will definitely not be visible, due to terrain screening, within the 2km study area. See Figure 9.8 below.

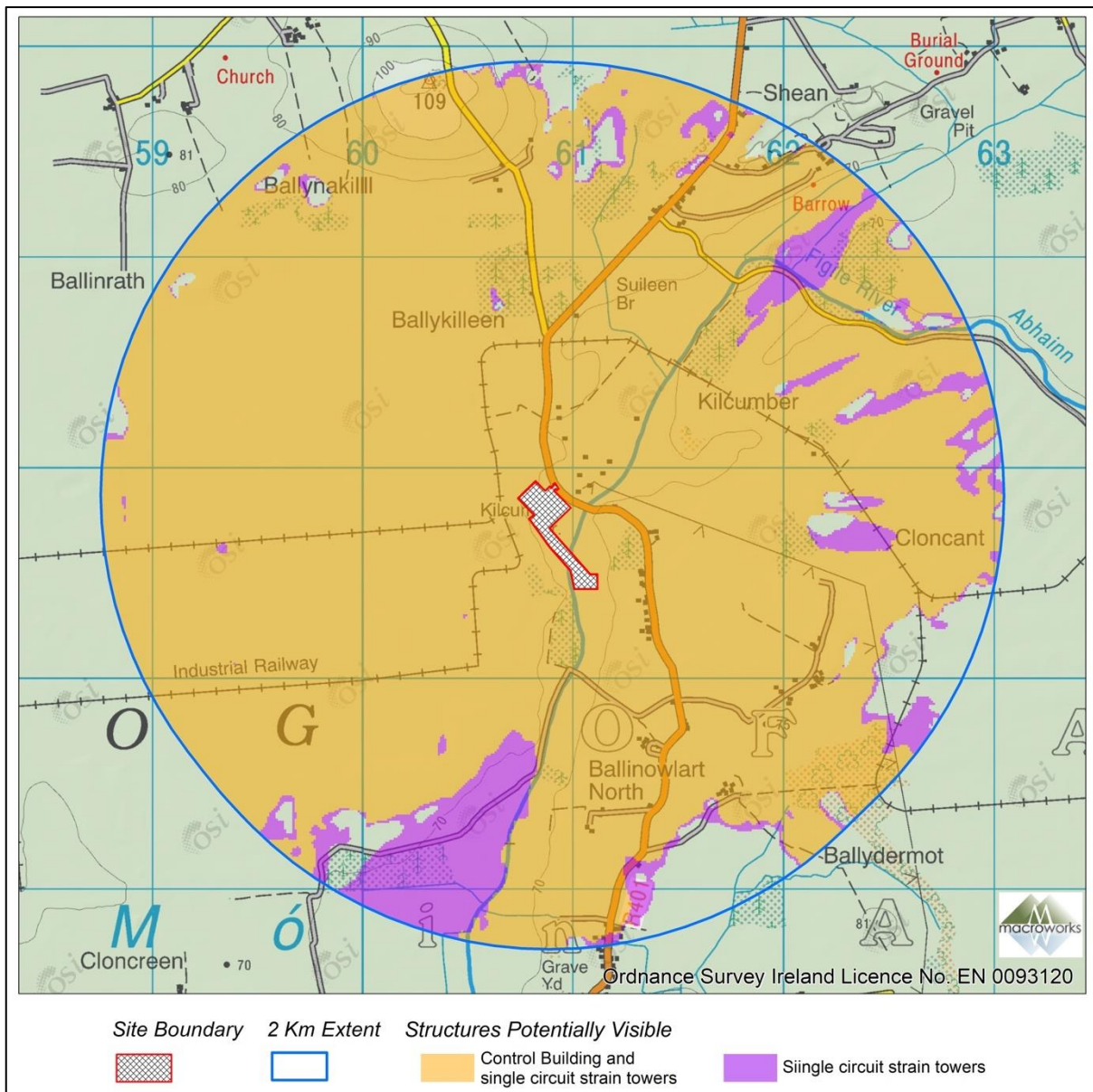


Figure 9.8: Standard (bare-ground) ZTV map to extent of 2km radius study area

The following key points are illustrated by the above 'bare-ground' ZTV map:

- Comprehensive theoretical visibility (orange ZTV pattern) of the proposed development is indicated across the majority of the study area which is due to the flat nature of the study area.
- There are several small areas in the study area (purple ZTV pattern) where there will be the potential for views of a portion of one or more of the proposed steel lattice pylons along the grid connection but not of the lower Control Building in the substation. These occur in small slivers throughout the eastern quarters of the study area and in a larger patch to the southwest.
- There will be no views of the proposed development from the areas where there is an absence of any coloured ZTV pattern. These occur in small patches near the extents of the study area.

The most important point to make in respect of this 'bare-ground' ZTV map is that it is theoretical. The proposed development will be considerably screened by intervening vegetation, resulting in a much lesser degree of actual visibility.

9.2.2.3 Identification of Viewshed Reference Points

Viewshed Reference Points (VRP's) are the locations used to study the visual impacts of a proposal in detail. It is not warranted to include each and every location that provides a view of a development as this would result in an unwieldy report and make it extremely difficult to draw out the key impacts arising from the proposed development. Instead, the selected viewpoints are intended to reflect a range of different receptor types, distances and angles. The visual impact of a proposed development was assessed using up to 6 no. 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.

VRP's might be relevant to more than one category and this makes them even more valid for inclusion in the assessment. The receptors that are intended to be represented by a particular VRP are listed at the beginning of each viewpoint appraisal. The Viewshed Reference Points selected in this instance are set out in the Table 9.5 and Figure 9.9 below.

Table 9.5: Outline Description of Selected Viewshed Reference Points (VRPs)

VRP	Location	Direction of View
VP1	Local road, Ballykilleen	S
VP2	Local road, Shean	SW
VP3	Regional road, Shean	SW
VP4	Regional road, Ballinowlart North	NW
VP5	Regional road, Kilcumber	NW
VP6	Regional road, Ballykilleen	W

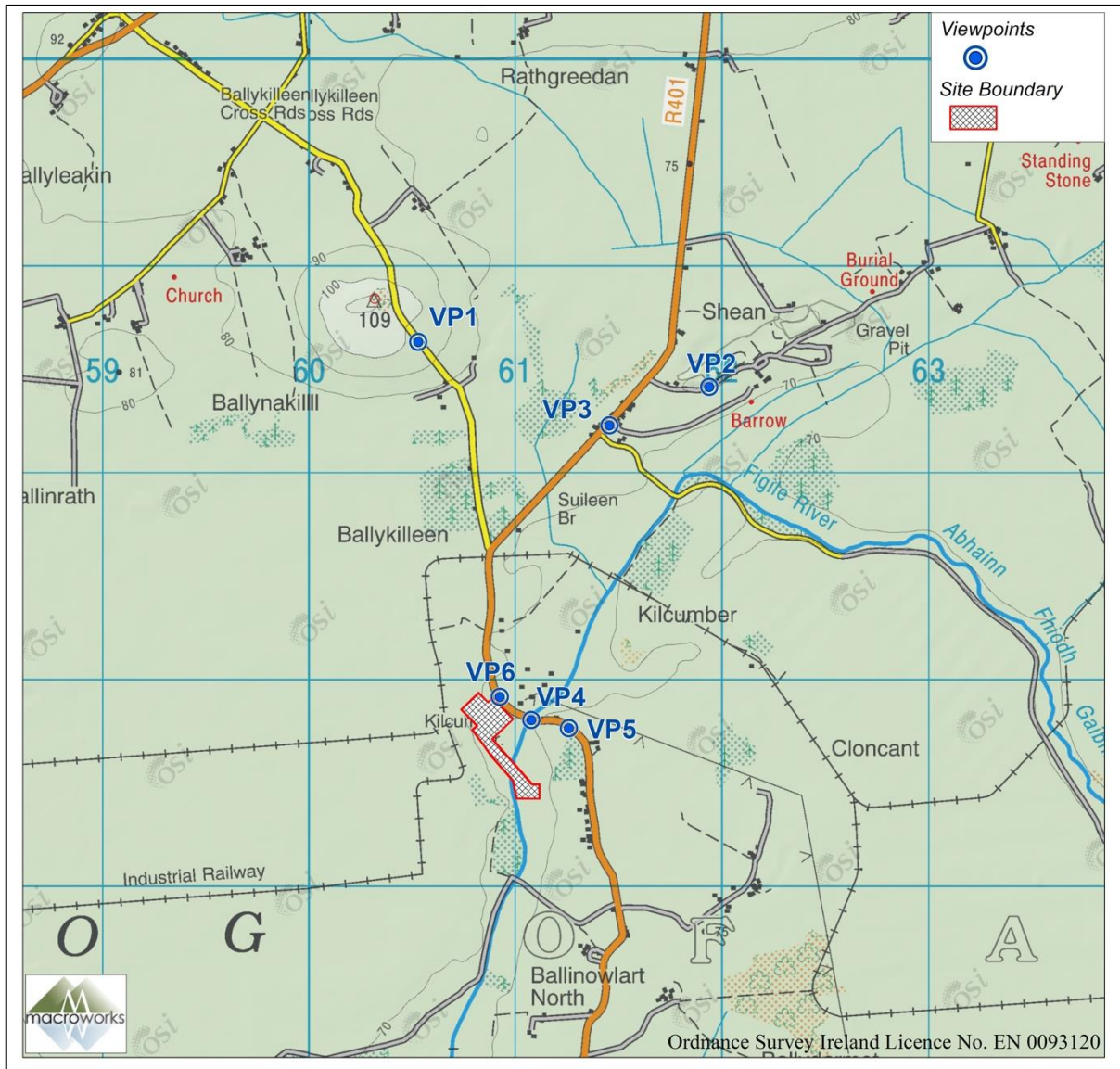


Figure 9.9: Viewpoint location map

9.2.3 Sensitivity of the Landscape

The sensitivity of the landscape to change is related to its importance, its susceptibility to change as well as judgements about the values associated with the landscape.

The landscape of the study area comprises of a mix of agricultural farmland and large scale peatbogs. The cutaway peatland, large scale Edenderry Power Plant and other anthropogenic land uses, identify the study area as a robust working landscape with large areas that are intensively managed. The site and its immediate surrounds are characterised by the Edenderry Power Plant and by typical rural land uses such as agricultural farmland and small blocks of conifer forest plantations. A minor sense of rural tranquillity is apparent in some locations within the study area that are sparsely populated, however, in general this is a landscape where landscape values are typically associated with productivity and rural subsistence rather than any sense of the rarity or the naturalistic. The terrain within the study area is typically flat and therefore views are generally restricted by the layers of dense hedgerow vegetation.

The vast majority of study area is typical of a rural midlands landscape and not particularly rare or unique. This is also reflected in the current Offaly County Development Plan where the site and its immediate surrounds are shown to be located in a 'Low sensitivity' landscape classification. Whilst there are some areas of 'moderate sensitivity' that straddle the road corridor of the R401 regional road, these represent large scale bogs and small blocks of woodland which are not particularly rare or distinctive at a county or regional scale. In terms of amenity value, the most notable aspect of amenity within the study area is located adjacent to a short section the Figile River located in the northern periphery which, according to the Offaly County Development Plan, is designated as an Area of High Amenity and subject to a 'high sensitivity' landscape classification.

Overall, this is a landscape heavily influenced by human activity, both in the past by harvesting of peat for fuel, and in the present through agricultural and industrial activities – most notably the Edenderry Power Plant. This is principally a productive rural landscape of reasonable integrity and one that contributes to the rural subsistence and amenity of the surrounding rural population. On balance of the above reasons, the sensitivity of the receiving landscape is considered to be **Low**.

9.2.4 Sensitivity of Visual Receptors

The sensitivity of receptors varies depending on their location, activity, and the current character of the receiving landscape - this is summarised in Table 9.6:

Table 9.6: Analysis of Visual Receptor Sensitivity at Viewshed Reference Points Scale of value for each criterion

Strong Association	Moderate Association	Mild Association	Negligible Association

Values associated with the view	VP1	VP2	VP3	VP4	VP5	VP6
Susceptibility of viewers to changes in view						
Recognised scenic value of the view						
Views from within highly sensitive landscape areas						
Primary views from residences						
Intensity of use, popularity (number of viewers)						
Viewer connection with the landscape						
Provision of vast, elevated panoramic views						
Sense of remoteness / tranquillity at the viewing location						
Degree of perceived naturalness						
Presence of striking or noteworthy features						
Sense of Historical, cultural and / or spiritual significance						
Rarity or uniqueness of the view						
Integrity of the landscape character within the view						
Sense of place at the viewing location						
Sense of awe						
Overall sensitivity receptor assessment	ML	M	ML	ML	ML	L

N = Negligible; L = low sensitivity; ML = medium-low sensitivity M = medium sensitivity; HM = High-medium sensitivity; H = high sensitivity; VH = very high sensitivity

9.3 LIKELY SIGNIFICANT IMPACTS

9.3.1 Likely Landscape Impacts

9.3.1.1 Magnitude of Landscape Impacts - Operational Phase

The main landscape effects to be considered at the operational phase relate to permanent changes to the physical landscape and landscape from the introduction of above-ground elements and permanent removal of vegetation.

The substation consists of a 12,875 square metre compound with all the components of the substation enclosed within a security fence. There will be an additional 7,524m² area set aside to the northwest for future expansion of the substation electrical capacity. In terms of physical landscape effects, the ground level within the compound will be increased by way of the introduction of infill material and the substation compound will sit slightly higher than the elevation of the adjoining landscape.

The existing land cover at the proposed development site is predominantly damp pasture. The proposed development will involve a change to the landcover, most notably the removal of a 100m length of hedgerow, which will be removed to accommodate the footprint of the proposed substation (within the northern portion of the application site boundary). In the southern portion of the application site, two new overhead lines will connect the proposed substation to the existing Mount Lucas - Cushaling 110kV overhead line located 400m to the southeast via supported by four 12m high steel lattice pylons and six 12m high wooden pole structures (three twin pole sets). There will be a negligible change to landcover along the route of the overhead line.

The main effect of the proposed development will be an increased sense of industrialisation and intensity of built development within the immediate landscape setting. Electrical substations and overhead lines are relatively familiar features throughout the Irish countryside so there will not be a sense of ambiguity associated with its location in this setting, particularly in the context of the adjacent Edenderry Power Plant and the existing overhead lines to the south. The scale and intensity of the proposed development will have some influence on the landscape of the immediate surrounds of the site; however, such effects are localised and beyond approximately 500m, it is likely to be perceived as an ancillary element to the adjacent power station.

In terms of duration, the operational phase landscape impacts will be 'long term' or 'permanent' in accordance with EPA definitions. On balance of the factors outlined above, the magnitude of operational phase landscape effect arising from the proposed development is deemed to be **Low**.

9.3.1.2 Significance of Landscape Impacts - Operational Phase

The significance of operational phase landscape impact is a function of landscape sensitivity weighed against the magnitude of operational phase landscape effects. This is derived from the significance matrix (Table 9.4) used in combination with professional judgement. Based on a Low sensitivity judgement and a Low magnitude of operational phase landscape effects, the significance of impact is considered to be **Slight-imperceptible** within the central study area (<c. 500m). Thereafter, the significance will reduce to Imperceptible at increasing distances as the development becomes a progressively smaller component of the wider landscape fabric.

9.3.2 Likely Visual Impacts

9.3.2.1 *Magnitude and Significance of Visual Impacts – Operational Phase and Cumulative Visual Impacts*

The assessment of visual impacts at each of the selected viewpoints is aided by photomontages of the proposed development. Photomontages are a 'photo-real' depiction of the scheme within the view utilising a rendered three-dimensional model of the development, which has been geo-referenced to allow accurate placement and scale. Please refer to **Appendix 5**. Due the transitory nature of construction work, it has been determined that construction phase will not be represented as a photomontages however, for each viewpoint, the following images have been produced:

- Existing View;
- Outline view (yellow outline showing the extent of the development overlaid on the photograph);
- Montage View; and,
- Cumulative View.

Operational phase visual impacts are assessed for each of the selected viewpoints in the following tables.

Note: Cumulative developments are outlined and assessed later in this Chapter in Section 9.3.4, however for ease of comparison, cumulative visual impacts are also described in the following tables.

Viewpoint 1 – Local road, Ballykilleen			
Representative of: <ul style="list-style-type: none"> Local community views Distance to site boundary: 1.9km (South) Receptor sensitivity: Medium-low			
Existing view:	From this slightly elevated location on Ballykilleen Hill, broad views are afforded over a largely flat lowland landscape. In the foreground the landform falls away from this viewpoint to reveal a residential dwelling in the middle ground. In the background, the upper portions of the Edenderry Power Plant punctuate the distant horizon.		
Visual impacts of proposed development:	The proposed Kilcumber Bridge 110kV substation will be located in the lowlands in the background of the view, nestled amongst the in trees and hedgerows immediately to the west of the Edenderry Power Plant. This vegetation in this area will provide a high degree of screening but the taller elements may be identifiable, but none of these will punctuate the skyline and will be viewed against a backcloth of vegetation which will help to visually absorb the proposed substation therefore it is unlikely to be noticeable by a casual observer. The scale of the proposed development in relation to the distance from this viewpoint means that it has a very limited vertical and lateral and extents. For these reasons, the visual presence is deemed to be minimal. Being located immediately adjacent to the Edenderry Power Plant, any visible portions proposed Kilcumber Bridge 110kV substation will be interpreted as a limited expansion of the influence of the Edenderry Power Plant and will not be read as incongruous in this context. The magnitude of impact is deemed to be Negligible .		
Cumulative visual impacts:	The proposed Kilcumber Bridge 110kV substation will marginally increase the lateral extents of the permitted Ballykilleen substation will be seen as an adjunct to it. The two will be read as one combined development immediately adjacent to the Edenderry Power Plant and both will be more visually associated with the Edenderry Power Plant than to the turbines in the permitted Cushaling and Cloncreen Wind Farms. For these reasons the cumulative visual impact is deemed to be equivalent to the standalone visual impacts.		
Summary:	Based on the assessment criteria and matrices outlined above, the significance of visual impact is summarised below.		
	Visual Receptor Sensitivity	Visual Effect Magnitude	Significance of Impact
	Medium-low	Negligible	Negligible

Viewpoint 2 – Local road, Shean			
Representative of: <ul style="list-style-type: none"> • Local community views Distance to site boundary: 1.8km (Southwest) Receptor sensitivity: Medium			
Existing view:	From this locally elevated location, a view is afforded of gently undulating pastures in the middle ground. Landform in the background of the view is flatter and contains the Edenderry Power Plant which can be seen rising prominently above the skyline in the distance.		
Visual impacts of proposed development:	From this location, the proposed substation is situated to the rear of the Edenderry Power plant. Two wooden pole sets and a pair of steel lattice pylons will be situated to the left of the Edenderry Power plant. The majority of the proposed development will be screened from view by the Edenderry Power Plant and the vegetation in the vicinity of the application site. Small fragments may be still be identifiable, but these are unlikely to be noticed by a casual observer, therefore the visual presence is deemed to be minimal. Any portions of the proposed development that are identifiable will be well integrated into the view as they occur within the part of the view that is already characterised by the industrial structures at the Edenderry Power plant. For this reason the magnitude of visual impact is deemed to be Negligible .		
Cumulative visual impacts:	As the proposed development will have a Negligible visual impact, it will not have a material bearing on cumulative visual impacts.		
Summary:	Based on the assessment criteria and matrices outlined above, the significance of visual impact is summarised below.		
	Visual Receptor Sensitivity	Visual Effect Magnitude	Significance of Impact
	Medium	Negligible	Imperceptible

Viewpoint 3 – Regional road, Shean			
Representative of: <ul style="list-style-type: none"> • Major route • Local community views Distance to site boundary: 1.4km (Southwest) Receptor sensitivity: Medium-low			
Existing view:	This is a heavily channelled view from the R401 regional road. The foreground is a occupied by private gardens and views are largely foreshortened by two dwellings, however in the gap between them, the Edenderry Power Plant can be identified in the background.		
Visual impacts of proposed development:	The proposed substation is located in the background of the view and is substantially screened by a combination of dwellings in the foreground, vegetation in the middle ground and the Edenderry Power Plant in the background, therefore the magnitude of impact is Negligible .		
Cumulative visual impacts:	As the proposed development will have a Negligible visual impact, it will not have a material bearing on cumulative impacts.		
Summary:	Based on the assessment criteria and matrices outlined above, the significance of visual impact is summarised below.		
	Visual Receptor Sensitivity	Visual Effect Magnitude	Significance of Impact
	Medium-low	Negligible	Imperceptible

Viewpoint 4 – Regional road, Ballinowlart North			
Representative of: <ul style="list-style-type: none"> Major route Distance to site boundary: 200m (West) Receptor sensitivity: Medium-low			
Existing view:	This is a somewhat visually enclosed view from the R401 regional road. The foreground contains a stone bridge over the River Figile and riparian vegetation associated with the this river foreshorten the views to the west. The R401 regional road leads off to the northwest. The existing Cushaling – Mount Lucas 110kV overhead line passes overhead and the wooden pole of another overhead line originating from the Edenderry Power Plant stands in the middle ground, between a gap in the vegetation on the opposite bank of the River Figile.		
Visual impacts of proposed development:	The majority of proposed grid connection is screened by the riparian vegetation in the foreground, however a glimpse of the upper portions of the steel lattice pylons that connect with the existing Cushaling – Mount Lucas 110kV overhead line in the left hand side of the view / to the southwest of this viewpoint are possible. The proposed substation is located to the west, with the foreground vegetation screening the majority of the proposed substation, however in a gap in this vegetation, a section of the concrete post and rail fence, the security fence and a variety of electrical infrastructure within the compound will be visible. The tones of the proposed substation are composed of greens and greys, similar to those to the vegetation and stone bridge in the foreground. The existing overhead line infrastructure in the view contributes a degree of visual complexity which assists the proposed grid connection in being visually absorbed. For most people passing over this bridge on the R401 regional road, the view towards the proposed development will be a fleeting glimpse. For these reasons the visual presence is deemed to be sub-dominant. The proposed substation represents an increase in the quantity of electrical infrastructure within the view but due to intervening screening and the limited height of the proposed substation the magnitude of impact is deemed to be Low .		
Cumulative visual impacts:	Turbines from the permitted Cushaling Wind Farm occur beyond Edenderry Power Station to the northeast (outside of the depicted view). The permitted Ballykileen substation will be largely screened from view. Portions of seven turbines within the Cloncreen Wind Farm will be visible in the background above the intervening vegetation, while the proposed substation will occur at ground level in the middle ground, nestled amongst the trees and hedgerows. The proposed development will cumulatively increase the intensity of man-made structures within view, but only to a very minor degree that will not generate significant cumulative visual impacts.		
Summary:	Based on the assessment criteria and matrices outlined above, the significance of visual impact is summarised below.		
	Visual Receptor Sensitivity	Visual Effect Magnitude	Significance of Impact
	Medium-low	Low	Slight

Viewpoint 5 – Regional road, Kilcumber			
Representative of: <ul style="list-style-type: none"> Major route Distance to site boundary: 280m (Northwest) Receptor sensitivity: Medium-low			
Existing view:	This is a broad view from a field gate on the R401 regional road. A large agricultural field is situated in the fore-to-middle ground and a residential dwelling is located to the north of the R401 regional road, in the right hand side of the view. Transmission lines and road signage are dotted along the road corridor which leads to a stone bridge that spans the River Figile in the background of the view. The Edenderry Power Plant rises from behind the residential dwelling with the remainder of the skyline composed of a combination of tree canopies and overhead lines.		
Visual impacts of proposed development:	In the background, where there is a low degree of vegetative screening to the southwest, one wooden pole set and associated conductors will be identifiable. Further to the south, the uppermost portions of two steel lattice pylons may also be discernible rising above a dense layer of intervening vegetative screening. The proposed substation will be in the background of the view, just to the left of the stone bridge. The lower portions of the proposed substation will be substantially screened by riparian vegetation along the banks for the River Figile, however, the upper portions will be just discernible. Due to the distance from this viewpoint, the scale of the visible portions of the proposed substation is modest the visual presence is sub-dominant to minimal. Several of the overhead lines that converge on the Edenderry Power Plant are identifiable in this view and help the vertical structures within the proposed substation to be assimilated into the view. For these reasons the magnitude of visual impact is judged to be Negligible .		
Cumulative visual impacts:	As the proposed development will have a Negligible visual impact, it will not have a material bearing on cumulative impacts.		
Summary:	Based on the assessment criteria and matrices outlined above, the significance of visual impact is summarised below.		
	Visual Receptor Sensitivity	Visual Effect Magnitude	Significance of Impact
	Medium-Low	Negligible	Imperceptible

Viewpoint 6 – Regional road, Ballykilleen			
Representative of: <ul style="list-style-type: none"> Major route Distance to site boundary: <100m (Southwest) Receptor sensitivity: Medium-low			
Existing view:	This is a typical view from the R401 regional road. Views to the west are heavily enclosed by the mature roadside vegetation in the foreground, although glimpses of a damp pasture in the middle ground are possible. Visual attention tends to be drawn in the opposite direction (northeast) where close-up views of the Edenderry Power Plant are afforded.		
Visual impacts of proposed development:	A section of the roadside vegetation will need to be removed to construct the access track. This access track will be readily noticeable in the foreground. Set back from the road and contained with a concrete post fence and a security fence, the Substation Building will be evident in the middle ground. A large proportion of the various components within the proposed substation will be visible to the left of the Substation Building but the grid connection will be well screening by existing hedgerow vegetation. The proposed substitution will be co-dominant in the view to the southwest and if considered in isolation will result in a noticeable change in the nature of the view to the southwest, however, when considered in the full context of this viewpoint, with the nearby Edenderry Power Plant, the nature of the visual change is not uncharacteristic of this location and therefore the magnitude of visual impact is considered to be Medium-Low .		
Cumulative visual impacts:	Turbines in the permitted Cushaling Wind Farm are located in the opposite direction to the proposed development. The permitted Ballykilleen substation will be situated in the foreground of the view immediately adjacent to the road while the permitted Cloncreen Wind Farm occurs in the background of the view. The majority of the proposed development will be screened from view by permitted Ballykilleen substation but a portion of the roof of the proposed Substation Building will be visible. This will add to the volume of built form within the view however it will be read as a somewhat unremarkable addition to the character of the view established permitted Ballykilleen substation and will not result in a notable change to the nature of the view. It will be a very minor contributor to the overall cumulative impact experienced from here and not one that generates a significant cumulative effect.		
Summary:	Based on the assessment criteria and matrices outlined above, the significance of visual impact is summarised below.		
	Visual Receptor Sensitivity	Visual Effect Magnitude	Significance of Impact
	Low	Medium-Low	Slight

9.3.3 Impacts during Construction

9.3.3.1 Landscape

Physical landscape impacts will occur during the construction phase at the application site and will involve a temporary construction compound (within the application site boundary) and the construction of the substation and the grid connection.

9.3.3.1.1 Substation

The construction phase will involve vegetation removal at the site entrance, the disturbance to the landform and land cover within footprint of the proposed substation and its associated access tracks. An approximately 100m long section of the southeast–northwest running hedgerow within the application site boundary in the vicinity of the proposed substation compound will be removed to facilitate construction of the foundations. There will be some soil stripping to facilitate the foundations of the proposed substation compound and there will be areas of the site dedicated to the storage of excavated earth. Infill material will be brought to the application site to raise the existing ground level to the height required for the substation compound. The construction phase may also include temporary site lighting, welfare facilities, vehicle parking area as well as the temporary storage of construction materials.

In addition to the physical disturbance of the landform and land cover within the proposed development site during construction, there will also be temporary effects on the landscape character of the site and its immediate surrounding landscape. This will occur due to the intensity of construction activities, which will involve the frequent movement of construction vehicles to and from the site and within the site. Cranes, plant and other construction vehicles, as well as the partially completed structures, will temporarily become characteristic elements of the construction phase which will be more visible from a broader area than construction activities at ground level.

9.3.3.1.2 Grid Connection

To construct the proposed steel lattice pylons and the wooden pole infrastructure, internal construction access routes will be required within the application boundary. These will be similar to common agricultural farm tracks and will only be in use temporarily. Each of the four 12m steel lattice pylons will require four concrete foundation footings of approximately one cubic meter each (four cubic meters of concrete per steel lattice pylon). The wooden pole infrastructure will consist of holes cored into the ground. The poles will then be concreted into the prepared holes. The physical impact on the landscape of this construction work will be highly localised and will take place within agricultural lands away from the public road network.

9.3.3.1.3 Summary

There is potential for construction phase works to temporarily impact on landscape character. This will result from the movement of heavy machinery, excavation and stockpiling of material as well as the temporary storage of construction materials. These are all typical construction phase activities and will not be out of character for this area given the necessary activities associated with the adjacent Edenderry Power Plant. Such effects are likely to be most noticeable in the immediate vicinity of the proposed development.

The construction of the proposed development is expected to take place over a 52 week period. Construction-related effects are, therefore, brief in nature and will only result in ‘temporary’

landscape impacts (EPA guidance deems effects of less than one year to be temporary). On the basis of the factors discussed above, it is considered that the magnitude of construction phase landscape impacts will be **Medium low**.

The significance of construction phase landscape impacts is a function of landscape sensitivity weighed against the magnitude of construction effects on the landscape. This is derived from the significance matrix (Table 9.4) used in combination with professional judgement. Based on a Low landscape sensitivity judgement and a Low magnitude of construction effect on the landscape, the significance of the construction impact is considered to be **Slight** within the immediate vicinity of the application site. Thereafter, significance will reduce somewhat at increasing distances as the development becomes a progressively smaller component of the wider landscape fabric, even in the context of the more sensitive landscape components/features identified within the study area.

9.3.3.2 Visual

It is not considered gainful to assess construction phase visual impacts from specific receptor locations using photomontages, which is instead reserved for the operational phase and cumulative impact scenarios. This approach is partly on the basis that construction phase visual effects are constantly changing in nature, intensity and location. Furthermore, many potential construction related visual effects such as dust, lighting and heavy goods vehicle movements are also not easily depicted or readily experienced through the use of static photomontages. Furthermore, a more generalised approach to assessing construction phase visual impacts is also warranted on the basis that such effects are only short-term or temporary in nature.

Construction phase visual effects will occur in relation to the proposed development throughout the predicted 12 month construction period. Visual receptors most likely to be affected by the proposed development during construction phase are road users travelling past the application site on the R401 regional road.

The greatest level of construction phase visual effects for these receptors will likely occur when the proposed substation is near completion, when the adjoining proposed steel lattice pylons have emerged and the cranes are still present, as well as construction vehicles and associated traffic continuing to move within, as well as to and from, the site.

Visual impacts during the construction phase will largely be similar to the operational phase but with the addition of the; traffic movements, cranes and other plant and haulage vehicles potentially seen in addition to the nearly completed proposed development. At none of the six selected viewpoints are construction phase visual impacts anticipated to be significantly greater than those during the operational phase in Section 9.3.2.

9.3.4 Likely Cumulative Effects

Cumulative effects are additional changes caused by a proposed development in conjunction with other similar or related developments, or as the combined effect of a set of developments, taken together.

Table 11.11: Definitions to determine cumulative effects on landscape and visual effects

Definitions to determine cumulative effects on landscape and visual effects
<i>Definition of cumulative visual effects</i>
Combined effects Where the observer is able to see two or more developments from one viewpoint
Sequential effects Where to observer has to move to another viewpoint to see different developments.
<i>Definition of cumulative landscape effects</i>
Effects that can impact either the physical fabric or character of the landscape, or any special values attached to it.

It was identified that the proposed development has the potential to contribute to cumulative landscape and / or impacts in conjunction with the following;

- permitted Cushaling Wind Farm (with associated permitted Ballykileen substation); and the
- permitted Cloncreen Wind Farm (with associated permitted substation).

The permitted Cushaling Wind Farm comprises of nine turbines in the boglands to the east of the application site and includes the permitted Ballykileen substation which adjoins the eastern side of proposed development (Figure 9.10 refers). The permitted Cloncreen Wind Farm comprises of 21 no. turbines in the boglands to the west of the application site and includes a permitted substation about 500m north west of the proposed development, it will be include in the cumulative assessment at a high level.

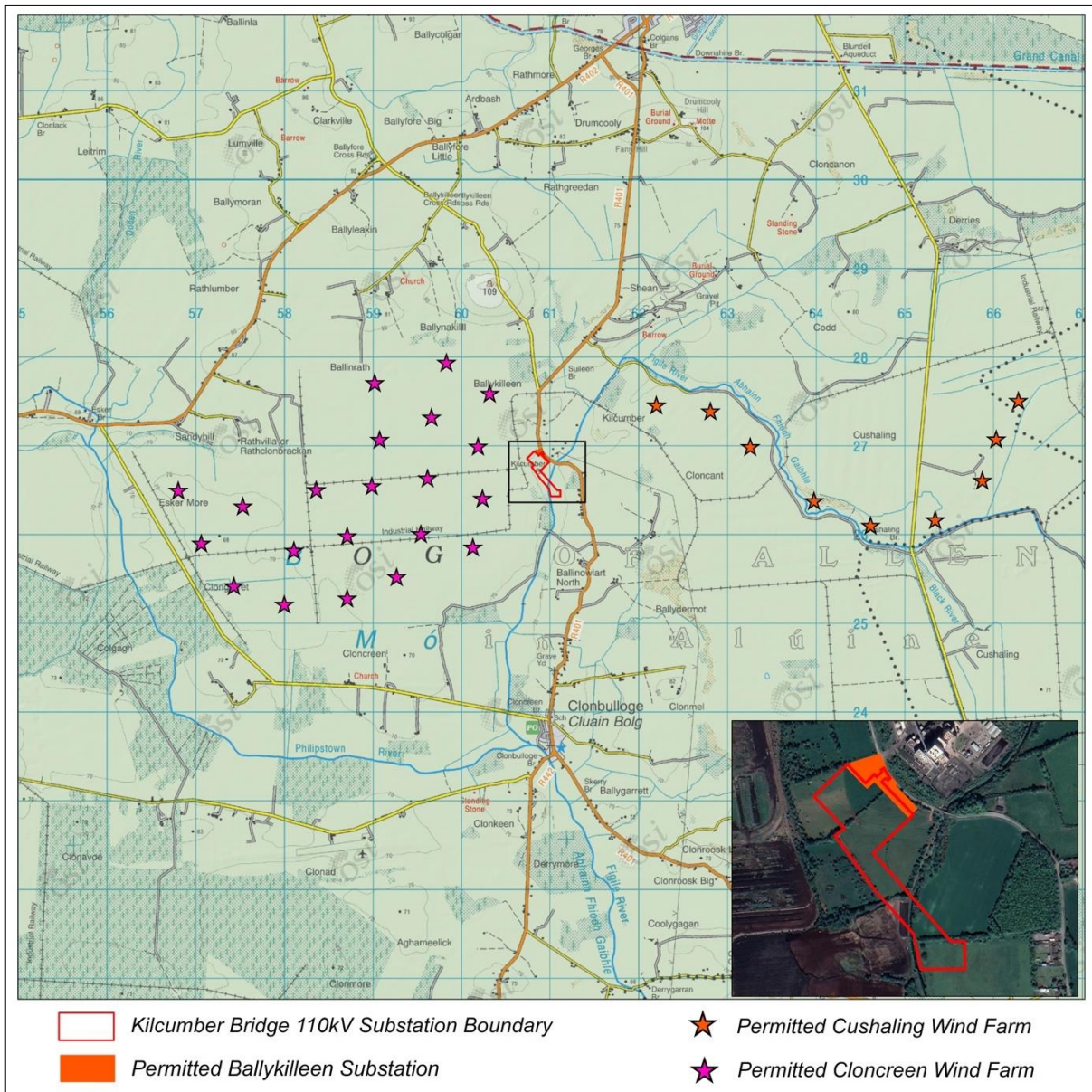


Figure 9.10: Map showing the location of the proposed development in relation to the permitted Cushaling and Cloncreen Wind Farms to the east and west respectively

9.3.4.1 Cumulative Construction Effects

The construction period for the proposed development will occur simultaneously as the construction phase for the permitted Cushaling Wind Farm. Construction activities for the proposed development will be similar in nature, location and duration as what will be required for the permitted Ballykilleen substation thus there will be a degree of intensification of construction activity in this location but it will not be uncharacteristic to what is already predicted to occur during this temporary period in this particular area, therefore construction phase cumulative landscape or visual impacts are not anticipated to be significant.

9.3.4.2 Cumulative Visual Effects

Photomontages of the Cumulative Views of the proposed development in conjunction with other known and relevant nearby permitted developments were prepared and are included in **Appendix 5**.

Although not shown in these cumulative photomontages, the proposed Kilcumber Bridge 110kV substation will be viewed as independent and visually separate from the substation for the permitted Cloncreen Wind Farm, which will be located about 500m to the northwest or southwest of the proposed development. The assessment of the cumulative visual impacts on each of the selected viewpoints is described in Section 9.3.2. No significant cumulative visual impacts were identified at any of the selected viewpoints.

9.3.4.3 Cumulative Landscape Effects

The introduction of the proposed Kilcumber Bridge 110kV substation into the landscape will add to, and will be seen as a necessary adjunct to, the emerging renewable energy character within the study area. It will be interpreted as a simple, unremarkable and localised extension of the permitted Ballykileen substation (part of the Cushaling Wind Farm) within the context of a relatively vast flat landscape. The proposed Kilcumber Bridge 110kV substation will be limited in scale when considered in the context of the scale of the nearby wind turbines that strongly influence the character of the area. It is anticipated the substation for the permitted Cloncreen Wind Farm will be situated over 500m from the proposed development in the boglands to the northwest thus will be a physically separate and distinct development within an area with a noticeably different land use and vegetation cover. For these reasons the proposed development will not have any significant cumulative impacts on the landscape.

9.4 MITIGATION

The main mitigation is 'mitigation by design', to minimise landscape and visual impacts by selecting a site that is adjoining the permitted Ballykileen substation, which in turn is located immediately adjacent to the existing Edenderry Power Plant and the existing Cushaling 110kV substation.

9.5 RESIDUAL IMPACTS

For this project there are no specific landscape and visual mitigation measures proposed other than those embedded in the considered siting and design of the substation. Consequently, the effects identified in the predicted impacts section of this assessment are the equivalent of residual impacts.

9.6 CONCLUSION

9.6.1 Landscape Impacts

An appraisal of the existing baseline conditions for landscape was undertaken with reference to the policy context and the sensitivity of the receiving landscape and this is assessed to be Low.

The magnitude of construction phase landscape effects is deemed to be Medium-low and of a temporary duration and consequently the significance of construction phase impacts on the landscape was assessed to be **Slight**.

The magnitude of operational phase landscape effects arising from the proposed development is assessed to be Low and will be relatively localised and absorbed by surrounding large scale development (Edenderry Power Plant.) Based on the Low sensitivity judgement and a Low magnitude of operational phase landscape effects, the significance of the operational phase impact is assessed to be **Slight-imperceptible**.

9.6.2 Visual Impacts

A set of photomontages were produced to visually represent the proposed development during the operational phase and future cumulative scenario to allow for a comprehensive cumulative impact assessment in combination with the nearby existing and permitted developments. The magnitude of visual effects will not be greater than Medium-Low at any of the selected viewpoints during the construction or operational phases, even at the closest receptor locations where clear views towards the proposed development site would be afforded from the site entrance.

There are a range of receptor types within the study area with sensitivities judged to be from Low to Medium. The sensitivity judgements were taken into consideration when determining the significance of visual impact for each viewpoint. Balancing the sensitivity of each visual receptor and with the predicted magnitude of visual change, the overall visual assessment concludes that the significance of visual impact will be no greater than **Slight** at any of the viewpoints.

9.6.3 Cumulative

Cumulative landscape and visual effects were assessed for the operational phase. It is not considered that the proposed development will make more than a very minor contribution to the cumulative impact of development in this area and not one that will generate significant cumulative effects.

9.6.4 Overall Significance of Impact

Based on the landscape and visual impact judgements provided throughout this LVIA, the proposed development is not considered to give rise to any significant impacts.