13.4.3 Guidance for Siting and Design in the Wind Energy Development Guidelines

This section considers the context of the Proposed Wind Farm based on siting and design guidance in the Guidelines (DoEHLG, 2006) and Draft 2019 Guidelines (DoHPLG, 2019) with respect to landscape and visual effects. Here, the appropriate landscape character type is identified as defined by the Guidelines (DoEHLG, 2006), and the landscape of the Proposed Wind Farm is described in that context.

Section 6.9 of the Guidelines (DoEHLG, 2006) (Section 6.10 of the Draft 2019 Guidelines (DoHPLG, 2019)), 'Landscape Character Types as a Basis for Guidelines', offers guidance for the siting and design of wind energy developments in multiple landscape contexts, defining six landscape character types representing most situations where wind turbines may be proposed.

- 'Mountain Moorland'
- 'Hilly and Flat Farmland'
- 'Flat Peatland'
- **'Transitional Marginal Landscape' – category selected for this assessment**
- 'Urban/Industrial'
- 'Coastal'

According to definitions of landscape character types in the Guidelines (DoEHLG, 2006) and Draft 2019 Guidelines (DoHPLG, 2019), the landscape type of 'Transitional Marginal Landscapes' is best suited to describe the Proposed Wind Farm site. Key characteristics for this landscape type (Guidelines (DoEHLG, 2006), p.59; Draft 2019 Guidelines (DoHPLG, 2019), p.110) are:

- *"Comprises something of both mountain moorland and farmland, thus involving a mix of small fields, tight hedgerows and shelterbelts.*
- *May include relatively rugged and rocky terrain, and thus a reasonable degree of spatial enclosure.*
- *Higher ground tends to be wet and boggy. Lower areas are usually cultivated and managed as fields.*
- *Houses and farmsteads are usually fairly common.*
- *This landscape type bridges the organised and intensively managed farmland and the more naturalistic moorland."*

The key aspect for this landscape type to consider in siting and design of wind farms is given as:

> *"The essential key here is one of respect for scale and human activities. These landscapes are often relatively small-scale due to spatial enclosure provided by hills and wind energy developments should respond sensitively to this intimacy."*

The siting and design guidance for wind energy developments within Transitional Marginal Landscapes are recommended as follows in '*Section 6.9 Landscape Character Types as a basis for guidelines*' of the Guidelines (DoEHLG, 2006) (p.52) and Draft 2019 Guidelines (DoHPLG, 2019) (p.104):

- *"**Location:** As wind energy developments, for reasons of commercial viability, will typically be located on ridges and peaks, a clear visual separation will be achieved from the complexity of lower ground. However, wind energy developments might also be located at lower levels in extensive areas of this landscape type, where they will be perceived against a relatively complex backdrop. In these situations, it is important to minimise visual confusion such as the crossing by blade sets of skylines, buildings, utility lines and varied landcover.*

- ***Spatial Extent:*** *Wind energy developments in these landscapes should be relatively small in terms of spatial extent. It is important that they do not dominate but achieve a balance with their surrounds, especially considering that small fields and houses are prevalent.*

- ***Spacing:*** *All options are possible, depending on the actual landscape characteristics. However, irregular spacing is likely to be most appropriate, given the complexity of landform and land cover typical of these landscapes, and the absence of extensive swaths of fields of regular and rectilinear pattern.*

- ***Layout:*** *The likely location of wind energy developments on ridges suggests a linear or staggered linear layout whereas on broader hilltops they could be linear or clustered. Grid layouts are less likely to succeed aesthetically unless there is an open continuity of similar landcover.*

- ***Height:*** *In small-scaled enclosed areas, short turbines are preferred in order to avoid their spatial dominance and to ensure visual balance. However, where the upper ground is relatively open and visually extensive, taller turbines may be more appropriate.*

- ***Cumulative Effect:*** *This would have to be evaluated on a case-by-case basis, but great caution should be exercised. The spatial enclosure often found in transitional marginal landscapes is likely to preclude the possibility of seeing another wind energy development. However, should two or more wind energy developments be visible within a confined setting a critically adverse effect might result, depending on turbine height and wind energy development extent and proximity."*

In terms of location, the Proposed Turbines are strategically positioned on the foothills of Spa and Clomantagh Hill (which form the wider complex of the Slieverdagh Hills), providing a distinct visual separation from the complexity of the lower ground features. In terms of spatial extent, the Proposed Turbines occupy a limited horizontal spatial extent. The Proposed Turbines are generally seen within a staggered layout when viewed from close proximity, that is visually sympathetic to the undulating landscape. The Proposed Turbines will have a random, irregular layout, allowing the Proposed Turbines to follow the natural contours and variations of the undulating terrain, thereby enabling effective integration within the landscape. In terms of layout and height, the Proposed Turbines follow a staggered linear layout following the hillslopes, avoiding visual confusion. In terms of cumulative effects, there are no other existing wind energy developments sited within the same confined setting as the Proposed Turbines and the distance between the Proposed Turbines and cumulative developments within the same undulating terrain (approximately 2.3km) is enough that cumulative visibility and landscape effects of the developments in combination are likely to be limited; see discussions of cumulative effects in Section 13.7.

13.4.4 Landscape Character of the Wider Landscape

The Proposed Turbines are located on the marginal foothills of the wider Slieveardagh Hills complex, which forms a prominent area of elevated land extending across the central and southern portions of the LVIA Study Area, extending from Knocknamuck Hill to the south to Knockmannon Hill to the north. The landscape immediately surrounding the Proposed Wind Farm is predominantly rural and agricultural in character, comprising a mosaic of agricultural fields, tracts of commercial forestry, hedgerows and treelines, with dispersed rural dwellings and farmsteads throughout.

The wider LVIA Study Area comprises a varied landscape of rolling hills, elevated ridgelines, river valleys (i.e. River Nore and valley to the east) and extensive areas of relatively low-lying agricultural land (i.e. Tipperary lowlands to the west). The Slieveardagh Hills and associated uplands, including Spa Hill, Clomantagh Hill and the surrounding hills, form prominent topographical features within the

landscape. These elevated areas are characterised by a mixture of agricultural pasture and commercial forestry, whilst also providing long-ranging views across the surrounding lowlands.

The existing Lisdowney Wind Farm is located on Knockmannon Hill, at the northern extent of the Slieveardagh Hills complex. The existing turbines form an established feature of the upland landscape character, demonstrating how commercial-scale wind energy development can be accommodated within the large-scale, undulating landforms characteristic of the wider Slieveardagh Hills landscape.

The River Nore and its associated valley (a designated 'Areas of Highly Scenic and Significant Visual Amenity Value' in the KCCDP) form a defining landscape feature to the east of the LVIA Study Area, creating a broad, relatively low-lying corridor between the Slieveardagh Hills and the more elevated lands associated with the Castlecomer Plateau to the easternmost extent of the LVIA Study Area. To the west and northwest of the Slieveardagh Hills, the landscape transitions into relatively flatter agricultural lowlands, interspersed with pockets of peatlands with existing wind energy developments.

Settlement within the LVIA Study Area is predominantly rural in character, comprising dispersed dwellings, farmsteads and small villages connected by a network of regional and local roads. Larger settlements include Freshford, Rathdowney, and Johnstown, while Kilkenny City, the principal urban centre in County Kilkenny, is located approximately 17km southeast of the Proposed Turbines.

The impact assessments detailed later in this chapter (Section 13.7) evaluates the likely significant landscape and visual effects from key landscape receptors (such as the 'Areas of Highly Scenic and Significant Visual Amenity Value') where there is theoretical visibility on the ZTV map.

13.4.4.1 Preliminary Analysis: Landscape Character Areas (LCAs)

Utilising the (15km) LCA Study Area, this section provides an initial analysis of designated LCAs from the county-level policy Landscape Character Assessments outlined previously. A map showing all LCAs within 15km of the Proposed Turbines and the distribution of theoretical visibility of the Proposed Turbines occurring in each LCA is shown in Figure 13-8 below.

Each LCA is listed below in Table 13-5, as well as a description of theoretical visibility within each LCA, as indicated by the ZTV in Figure 13-8 below. Several LCAs identified in the LCA Study Area (15km for assessment of designated LCAs) have very small areas of theoretical visibility indicated by the ZTV map. The potential visibility of the Proposed Turbines was appraised during site surveys (multiple surveys conducted during 2020, 2022, and 2026) from all LCAs with very limited or partial theoretical visibility. The ZTV and on-site visibility appraisals determines which LCAs are scoped in for full assessment later in this chapter (see also *Appendix 13-2*); the results are noted in Table 13-5 below.[2]

[2] *For purposes of clarity, continuity, and reference to mapping figures in this chapter; Landscape Character Areas are labelled 'LCA,' and each is prefixed by the first letter of the county in which it is located e.g., 'KK' for Kilkenny. The last number in each label corresponds to the label or number assigned to each LCA in the respective county development plans.*

Table 13-5 LCAs within 15km of the Proposed Turbines

Map Ref	LCA	Theoretical Visibility (TV) as indicated by ZTV	Actual Visibility	Scoped in for Assessment
Up to 5km				
KK-LCA-A (N)	Slieveardagh Hills (North)	Primarily full TV within 5km with large areas of no and partial TV beyond 5km.	Visibility will be greatest within 5km of the Proposed Turbines.	Yes
K-LCA-A (S)	Slieveardagh Hills (South)	Large areas of full TV within 10km. Beyond 10km to the south there is primarily no TV with small patches of full and partial TV	Visibility likely to be greatest within 5km of the Proposed Turbines and may occur from elevated vantage points within this LCA.	Yes
KK-LCA-A1	Slieveardagh Western Transition Zone	Areas of full and partial TV	Visibility may occur from localised elevated vantage points within this LCA.	Yes
KK-LCA-A2	Slieveardagh Central Transition Zone	Primarily partial TV with a small patch of full TV	Visibility will be greatest within 5km of the Proposed Turbines where there is no topographical screening.	Yes
KK-LCA-A3	Slieveardagh Eastern Transition	Primarily full TV throughout with small pockets of no or partial TV.	Visibility will be greatest within 5km of the Proposed Turbines.	Yes
L-LCA-1	Mountains, hills, upland areas	Primarily no TV with small area of full TV within 5km	Visibility may occur from the elevated vantage points within 5km of the Proposed Turbines	Yes
Up to 10km				
KK-LCA-F1	Kilkenny Northern Basin	Primarily full TV throughout.	Some limited visibility may occur, though visibility is likely to be largely restricted by intervening vegetation within this low-lying landscape	Yes
KK-LCA-H	Nore Valley (South)	Primarily full TV throughout.	Some limited visibility may occur, though	Yes

Map Ref	LCA	Theoretical Visibility (TV) as indicated by ZTV	Actual Visibility	Scoped in for Assessment
			visibility is likely to be largely restricted by intervening vegetation within this low-lying landscape	
T-LCA-9	Littleton Farmland Mosaic and Marginal Peatland	Primarily full TV with areas of partial TV	Some limited visibility may occur from localised elevated vantage points, though visibility is likely to be largely restricted by intervening vegetation within this low-lying landscape	Yes
T-LCA-14	Slieveardagh Hills Farmland Mosaic	Primarily no TV with small pockets of full TV	Where visibility may occur, the Proposed Turbines will appear as small features in the background of the view. Significant effects on the character of the landscape are not likely to occur	No – Due to lack of theoretical visibility within the LCA.
L-LCA-2	Lowland Agricultural Areas	Mixed TV including no TV within 10km of the Proposed Turbines, with long stretches of partial and full TV beyond 10km	Some visibility may occur across long-range open views, particularly where vegetation is low.	Yes
L-LCA-3	Rolling Hill Areas	Primarily full TV with pockets of partial and no TV	Visibility may occur throughout the LCA in locations where vegetation is low and the rolling terrain allows open views.	Yes
Up to 15km				
KK-LCA-A4	Slieveardagh Southern Transition Zone	Primarily no TV with small patches of partial TV	Visibility is not likely to within this LCA.	No – Due to lack of theoretical visibility within the LCA.
KK-LCA-B	Castlecomer Plateau	Primarily full TV with an area of no TV	Yes, throughout large areas of higher elevation	Yes

Map Ref	LCA	Theoretical Visibility (TV) as indicated by ZTV	Actual Visibility	Scoped in for Assessment
KK-LCA-B1	Castlecomer Southern Transition Zone	Primarily Full TV	Given the set-back distance, on-site visibility appraisals determined that where visibility does occur, the Proposed Turbines will be seen in the distant background as small features	No – Due to set-back distance and small overall area within 15km
KK-LCA-B2	Castlecomer Western Transition	Primarily full TV	Some limited visibility may occur from localised elevated vantage points, though visibility is likely to be largely restricted by intervening vegetation within this transitional low-lying landscape	No - Due to the small overall area and similarity in characteristics and distance with other adjacent LCAs
KK-LCA-F2	Kilkenny Western Basin	Primarily no TV	Given the set-back distance, on-site visibility appraisals determined that where visibility does occur, the Proposed Turbines will be seen in the distant background as small features.	No - Due to set-back distance and small overall area within 15km
T-LCA-5	Templemore Plains	Primarily full TV	Given the set-back distance, on-site visibility appraisals determined that where visibility does occur, the Proposed Turbines will be seen in the distant background, and significant effects on the character of the landscape are not likely to occur.	No – Due to set-back distance and on-site visibility appraisals
T-LCA-8	Littleton Raised Bog	Primarily full TV	Given the set-back distance, on-site visibility appraisals determined that where visibility does occur, the Proposed Turbines will be seen in the distant background, and significant effects on the character of the landscape are not likely to occur.	No – Due to set-back distance and on-site visibility appraisals

Map Ref	LCA	Theoretical Visibility (TV) as indicated by ZTV	Actual Visibility	Scoped in for Assessment
L-LCA-4	Peatland Areas	Primarily full TV	Given the distance (approx. 11km) from the Proposed Turbines, there is likely to be no or very limited background views of the Proposed Turbines from the small part of this LCA located within the LCA Study Area.	No - Given the small section of the LCA within the LCA Study Area, given the distance and low-lying landscape, significant effects are not likely to occur on the landscape character of this LCA as a result of the Proposed Project.
L-LCA-5	Urban Fringe Areas	Primarily full TV in the urban fringe area of Rathdowney to the northwest. No TV in the urban fringe area of Durrow to the north east.	In general views are heavily screened by the intervening boundary vegetation within the flat landscape as well as by the built environment of the towns within it.	No - The built environment largely screens views within these urban areas. Where visibility occurs, it would be on the outskirts.

Table 13-6: Summary of LCAs Scoped in for Assessment

Map Ref.	LCA Name	Scoped in for Assessment?
KK-LCA-A (N)	Slieveardagh Hills (North)	Yes.
KK-LCA-A (S)	Slieveardagh Hills (South)	Yes.
KK-LCA-A1	Slieveardagh Western Transition Zone	Yes.
KK-LCA-A2	Slieveardagh Central Transition Zone	Yes.
KK-LCA-A3	Slieveardagh Eastern Transition	Yes.
KK-LCA-B	Castlecomer Plateau	Yes.
KK-LCA-F1	Kilkenny Northern Basin	Yes.
KK-LCA-H	Nore Valley (South)	Yes.
T-LCA-9	Littleton Farmland Mosaic and Marginal Peatland	Yes.

L-LCA-1	Mountains, Hills, Upland Areas	Yes.
L-LCA-2	Lowland Agricultural Areas	Yes.
L-LCA-3	Rolling Hill Areas	Yes.

13.5 Visual Baseline

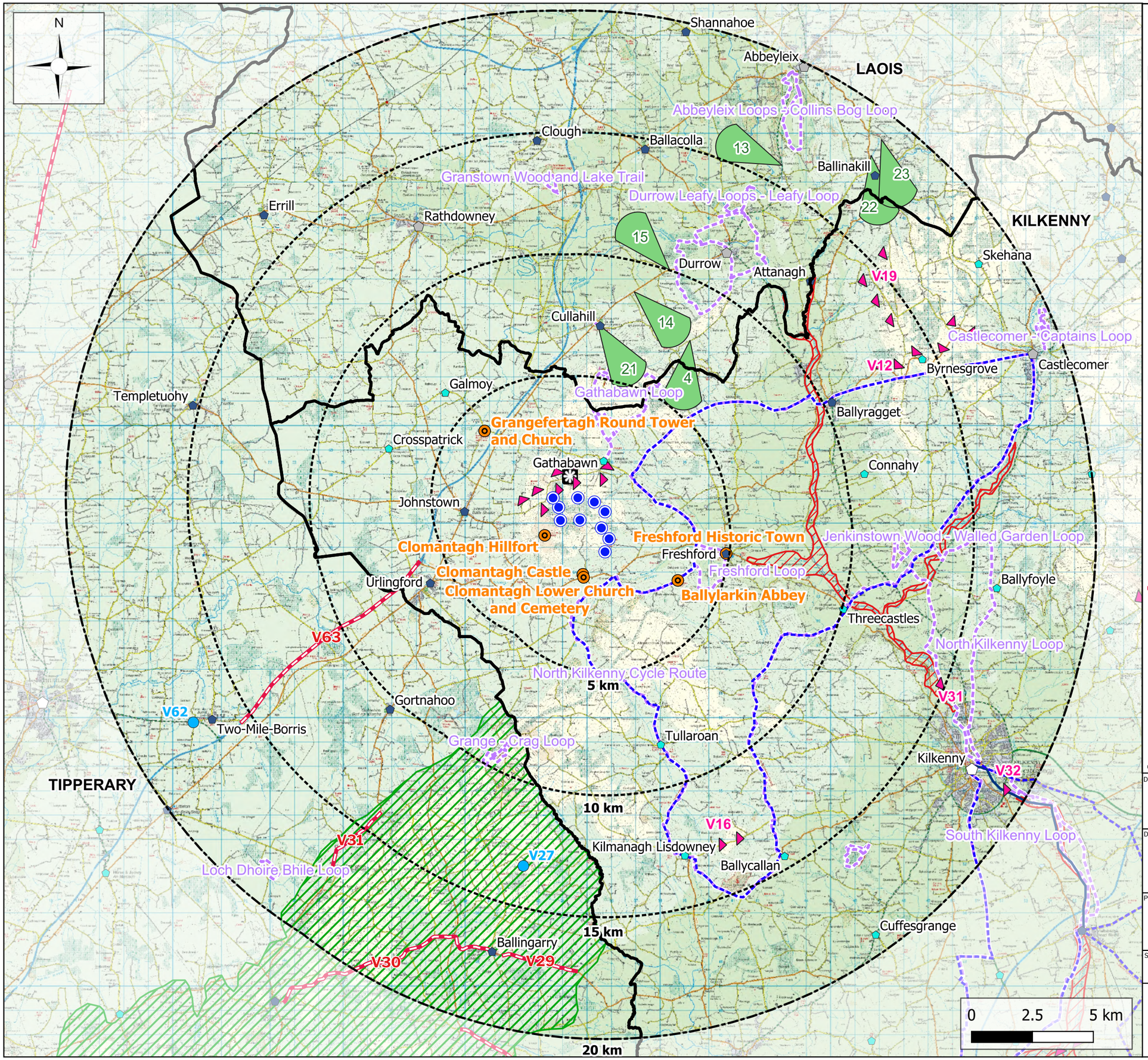
13.5.1 Visual Receptors

The main purpose of establishing the visual baseline is to identify the key visual receptors to be considered for viewpoint selection, viewpoints are locations from which visual effects are assessed using photomontages (see *Appendix 13-1: LVIA Methodology*). To this end, the following visual receptors have been identified within the LVIA Study Area and are listed below:

- Designated Scenic Routes and Scenic Views
- Tailte Éireann Viewing Areas
- Settlements
- Recreational Routes
  - Waymarked Walking Routes
  - Cycle Routes
- Recreational, Cultural Heritage and Tourist Destinations
- Transport Routes

All visual receptors are listed in tables in the following sections along with theoretical visibility at those locations indicated by the Visual Baseline and Half-Blade ZTV map (Figure 13-16 below).

During site visits conducted between 2020, 2022, and 2026 the likely visibility of the Proposed Turbines was appraised from receptors where the ZTV has indicated theoretical visibility. Visual receptors are scoped out from further assessment when there is either no theoretical visibility of the Proposed Turbines or where on-site appraisal determined visibility of the Proposed Turbines to be very unlikely or very limited.



Map Legend

- LVIA Study Area
- County Boundaries
- Proposed Turbines

National Receptors

- Tailte Éireann Viewing Points
- Cultural Heritage and Tourist Destinations
- Recreational Routes

Settlements

- County Hub Town
- Town
- Village
- Small Village of Local Importance

Co. Laois

- Views and Prospects

Co. Kilkenny

- Long Distance Walks
- Cycling Routes
- Highly Scenic Areas
- Views and Prospects

Co. Tipperary

- Scenic Viewpoints
- Scenic Routes
- Secondary Amenity Area

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Drawing No.

Figure 13-16

Drawing Title

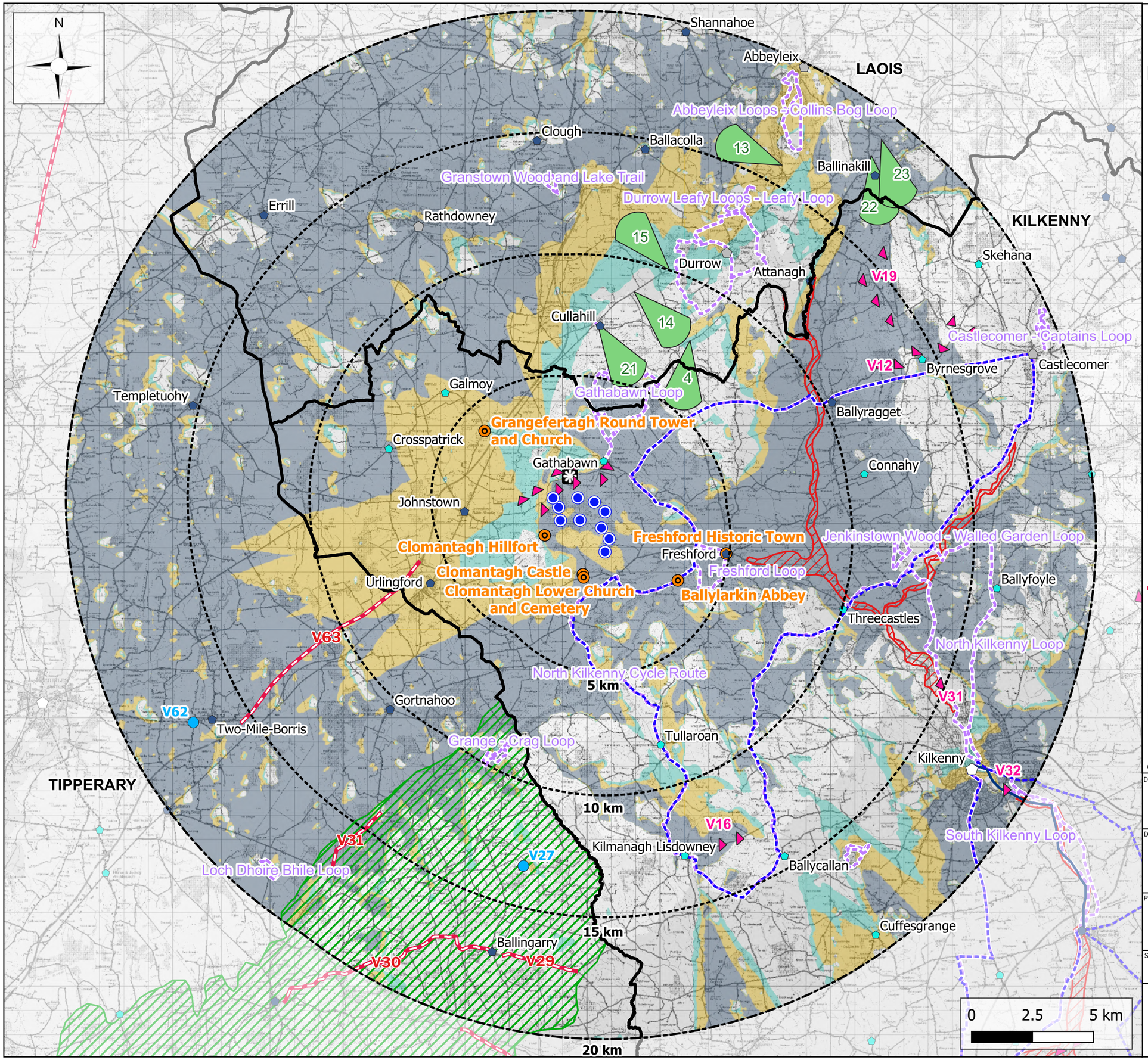
Visual Baseline

Project Title

Killoshulan Wind Farm

Scale	Project No.	Date	Drawn By	Checked By
1:150,000	260172	27.10.2026	GL	DM

MKO Planning and Environmental Consultants



Map Legend

- LVIA Study Area
- County Boundaries
- Proposed Turbines

National Receptors

- Tailte Éireann Viewing Points
- Cultural Heritage and Tourist Destinations
- Recreational Routes

Settlements

- County Hub Town
- Town
- Village
- Small Village of Local Importance

Co. Laois

- Views and Prospects

Co. Kilkenny

- Long Distance Walks
- Cycling Routes
- Highly Scenic Areas
- Views and Prospects

Co. Tipperary

- Scenic Viewpoints
- Scenic Routes
- Secondary Amenity Area

Zone of Theoretical Visibility

- 1-3 Turbines Theoretically Visible
- 4-7 Turbines Theoretically Visible
- 8-10 Turbines Theoretically Visible

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Drawing No.

Figure 13-17

Drawing Title

Visual Baseline with ZTV

Project Title

Killoshulan Wind Farm

Scale	Project No.	Date	Drawn By	Checked By
1:150,000	260172	27.10.2026	GL	DM

MKO Planning and Environmental Consultants

13.5.1.1 Designated Scenic Routes and Views

As reported previously in Section 13.4 and shown in Figure 13-16 there are 6 No. KCCDP scenic views and prospects within the LVIA Study Area. 7 No. LCDP scenic views and prospects as well as 6 No. TCDP scenic routes and views are also located within the LVIA Study Area.

13.5.1.2 Tailte Éireann Viewpoints

There is 1 No. Tailte Éireann Viewing Area located within the LVIA Study Area, which is located approximately 1km from the nearest Proposed Turbine (T07), as seen in Figure 13-16 above.

13.5.1.3 Settlements

The settlement hierarchy reported in the respective county development plans (Counties Kilkenny, Tipperary, and Laois) were consulted to identify the settlements within the LVIA Study Area. This LVIA focuses on key settlements and population centre within the LVIA Study Area such as large towns and villages within 20km and smaller rural settlements of local importance within 10km. See the scoping of all the following receptors in Section 13.5.2 below.

13.5.1.4 Recreational Routes

Recreational routes are sensitive receptors as people are likely to be using them in a recreational capacity where value is likely to be placed upon views and the scenic amenities of the landscape. The term 'recreational routes' encompasses the following:

- Waymarked walking routes;
- Cycle routes;

According to sources including such as Tailte Éireann maps and Sport Ireland Designated Cycle Routes and Trails, 25 No. designated walking/cycling routes were identified within the LVIA Study Area. In general, many such routes exist of differing scale and prominence, thus only the recreational routes of county- or national-level importance which are featured on the available websites or are designated in county-level policies were included in this LVIA.

13.5.1.5 Recreational, Cultural Heritage and Tourist Destinations

Popular recreational, cultural heritage and tourist destinations in the LVIA Study Area were investigated through a desktop exploration of localised tourism plans as well as considering the most popular tourism destinations in Counties Kilkenny, Tipperary, and Laois posted on Tripadvisor.ie. Note that 'cultural heritage' destinations in this section refers to those of popular renown in the sense of general tourism; a detailed assessment of archaeological cultural heritage sites in relation to the Proposed Project is provided in Chapter 14 of this EIAR. A full scoping exercise on these receptors is provided in Section 13.5.2.

13.5.1.6 Transport Routes

Onsite visibility appraisal determined that most visibility of the Proposed Turbines will occur within 3-5km of the Proposed Wind Farm from the local road network surrounding the Proposed Turbines. These are considered in the preliminary analysis.

13.5.2 Preliminary Analysis: Visual Receptors

13.5.2.1 Visual Receptors Scoped In for Further Assessment

The receptors in Table 13-7 identified in the LVIA Study Area were scoped in for assessment in the LVIA and are mapped above in Figure 13-16; see the full detailed methodology in *Appendix 13-1: LVIA Methodology* for the analysis of scoping receptors in and out of assessment.

Table 13-7 Visual Receptors Scoped in for Further Assessment

Receptor	Description	Direction of View	Directed to Proposed Turbines	Theoretical Visibility	Photomontage Viewpoint No.
Up to 5km					
Scenic Routes and Views	**KK-SV-14:** *"Views north and east on the Johnstown/Gattabaun Road No. LP1805 between junctions with Road nos. LT18054 and LT18056"*	E/N	No	Mixed Theoretical Visibility	VP06, VP07, VP08, VP09
Tailte Éireann	**Tailte Éireann Viewpoint**	North	No	Partial Theoretical Visibility	VP07
Settlements	**Johnstown** (Rural Town/Village)	N/A	N/A	Partial Theoretical Visibility	VP16
	Freshford (Rural Town/Village)	N/A	N/A	Full Theoretical Visibility	VP03
	Gathabawn (Rural Node)	N/A	N/A	Mixed Theoretical Visibility	PWVP-B
Recreational Routes	**North Kilkenny Cycle Route: "***It winds its way through rural North Kilkenny bringing the cyclist through beautiful villages like Freshford and Castlecomer."* (Trailkilkenny.ie)	N/A	N/A	Mixed Theoretical Visibility	VP03, VP05
	Gathabawn Loop (short loop included): "*This walk takes you through fields on forest track, laneways, little country*	N/A	N/A	Full Theoretical Visibility	VP19

	roads and woodland path crossing Cullahill Mountain and places with names such as Shirley's Lane and Gooseneck. Lovely scenery and views with the added interest of a famine village." (Sportireland.ie)				
Cultural Heritage and Tourist Destinations	**Clomantagh Hillfort**	N/A	N/A	Full Theoretical Visibility	VP18
	Clomantagh Castle	N/A	N/A	Full Theoretical Visibility	VP11
	Clomantagh Lower Church and Cemetery	N/A	N/A	Full Theoretical Visibility	VP12
	Grangefertagh Round Tower	N/A	N/A	Mixed Theoretical Visibility	PWVP-C
Road Network	**M8 Motorway**	N/A	N/A	Mixed Theoretical Visibility	VP15
	R-693 Regional Road	N/A	N/A	Mixed Theoretical Visibility	VP01, VP03, VP11, VP14
	R-435 Regional Road	N/A	N/A	Partial Theoretical Visibility	VP16
	L-1804 Local Road	N/A	N/A	Mainly full TV with section of partial TV	VP04, VP05
5-10km					
Scenic Routes and Views	**L-SV-04**: *"Views towards Knockmannon Hill"*	South	Yes	Partial Theoretical Visibility	VP02
	T-SR-63: *"Views from M8 near Longford's Pass."*	N/A	N/A	Mixed Theoretical Visibility	VP20

Settlements	**Urlingford** (Rural Town/Village)	N/A	N/A	Partial Theoretical Visibility	VP01
	Crosspatrick (Rural Node)	N/A	N/A	Partial Theoretical Visibility	VP01, VP04, PWVP-D
	Galmoy (Rural Node)	N/A	N/A	Partial Theoretical Visibility	VP01, VP04, PWVP-D
Recreational Routes	**Cullahill – Heathy Way Loop Walk (Cullahill - Binnianea Loop included):** *"This loop follows field paths, woodland tracks, lanes and minor roadways in a cluster of low hills above the village of Cullahill with fine views of rural County Laois as well as some of the mountains in the surrounding counties, while closer to hand it passes the ruins of Cullahill Castle, a Lime Kiln, Cummer Well and a Rath or Fort."* (Sportireland.ie)	N/A	N/A	Partial Theoretical Visibility	VP19
Road Network	**N77 National Road**	N/A	N/A	Mixed Theoretical Visibility	VP04, VP15
10-15km					
Scenic Routes and Views	**T-SR-31**: *"Views to the west between Glengoole and Ballysloe, along road R689"*	360 degrees	Yes (generic road views)	Mixed Theoretical Visibility	VP20
	KK-SV-12: *"Views overlooking Castlecomer and Ballyragget on the Castlecomer/Ballyragget Road (R694) between its junctions with road nos. LT5852 and LT5847"*	Southeast and southwest	Yes	Mixed Theoretical Visibility	VP12
	KK-SV-19: *"View west towards the Slieve Bloom Mountains on road no's LS5840 and LS5839 from the junction with road*	West	Yes	Full Theoretical Visibility	VP17

	nos. LS5839 and LS5846 (Ballymartin Cross Roads)"				
Settlements	**Ballyragget** (Rural town/Village)	N/A	N/A	Full Theoretical Visibility	VP04
	Rathdowney (Town)	N/A	N/A	Full Theoretical Visibility	PWVP-D
Recreational Routes	**North Kilkenny Cycle Loop:** *"North Kilkenny Cycle Loop route winds its way through rural North Kilkenny bringing the cyclist through beautiful countryside, river side roads and rural laneways"* (Discovrireland.ie)	N/A	N/A	Mixed Theoretical Visibility	VP15

13.5.2.2 Visual Receptors Scoped Out for Further Assessment

In some cases, specific receptors are scoped out where there is no potential for significant visual effects to occur on account of combination of factors such as distance, visual screening, direction of views and the nature and sensitivity of the receptors at a particular location (see Section 1.4.3 of *Appendix 13-1* Methodology for further information). This is on the basis that, following ZTV mapping and on-site appraisal, these receptors either have no theoretical visibility of the Proposed Turbines, or are located at a sufficient distance and in a direction where any theoretical visibility is considered negligible and where significant landscape or visual effects are not anticipated. Please see Table 13-8 for list of receptors which have been scoped out for further assessment and are not considered further in this chapter.

Table 13-8 Visual Receptors Scoped out for Further Assessment

Receptor	Description	Rationale for Scoping Out
Up to 10km		
Scenic Views	**LSV-14**: *"Views towards Caponellan Hill"*	No Theoretical Visibility.
	LSV-21: *"Views of Cullahill Castle and Knockmannon Hill"*	No Theoretical Visibility.
Settlements	**Cullahill** (Village)	No Theoretical Visibility.
	Tullaroan (Rural Node)	No Theoretical Visibility.
Recreational Routes	**Freshford Loop:** *"Starting from the picturesque village green, this 6km loop walk takes you along woodland tracks*	Visibility is likely to be very limited, as the routes are either located within settlements (where the built

	and open farmland, with the final section following the Nuenna River" (Trailkilkenny.ie)	environment provides substantial visual screening), within areas of dense forest cover, or views are oriented in opposing directions to the Proposed Turbines. Significant visual effects are not likely to occur.
	Grange – Crag Loop (Grange Loop included): *"This loop takes walkers on minor road, forestry tracks and woodland trails which gently ascend through the mixed forest to the Wellington Monument folly at the summit of the Crag Hill."* (Sportireland.ie)	Site appraisals determined that there is likely to be no actual visibility of the Proposed Turbines as the majority of this trail is within woods and forestry.
	Durrow Leafy Loop (Dunmore Woods Loop included): *"This walk on country lanes, river bank, forestry paths, woodland tracks and hill paths takes the walker through mixed broadleaf and conifer woods, across farmland and along rivers, passing the ruins of Dunmore House."* (sportireland.ie)	There are large sections of no theoretical visibility along this walking trail and no sections of full theoretical visibility. Only a small section of this trail falls within 20km of the Proposed Turbines.
Cultural Heritage and Tourist Destinations	**Ballylarkin Abbey**	Although there is full TV, site appraisals determined that there is likely to be no visibility of the Proposed Turbines at this location due to dense screening from mature roadside vegetation along the L-5000 local road that is located next to the abbey. There is likely to be no significant visual effects.
	Freshford Historic Town	Visibility is likely to be very limited, as the cultural heritage assets (churches, etc) are located centrally within the town (where the built environment provides substantial visual screening). Significant visual effects are likely not to occur.
10-15km		
Scenic Routes and Views	**T-SV-27:** "*War House Hill, views east and west"*	At a distance of over 13km from the nearest Proposed Turbine and the lack of theoretical visibility, significant visual effects are likely not to occur.

	L-SV-15: *"Views over farmland and River Goul"*	View is in opposing direction to the Proposed Turbines.
	KK-SV-16: *"View East towards Kilkenny City on the Kilkenny/Kilmanagh Road No. LP 1011 between the junction with road nos. LT10111-4 and LT10112-10"*	View is in opposing direction to the Proposed Turbines.
	KK-SV-31: *"Panoramic view of River Nore Valley from Bleach Road"*	No Theoretical Visibility.
Settlements	**Clough** (Village)	At these distances beyond 10km, within these low-lying settlements, actual visibility is likely to be very limited (e.g. Gortnahoo), have very little theoretical visibility (e.g. Durrow) or have no theoretical visibility (e.g. Ballycallan), with further visual screening provided by the built environment and vegetation on intervening ridgelines. Where visibility does occur, the Proposed Turbines will be seen as small-scale elements relative to the landscape in the distant background. Significant visual effects are not likely to occur.
	Ballacolla (Village)	Beyond 10km from the Proposed Turbines, site appraisals determined that due to distance and the visual screening from the built-up environment within these low-lying settlements – visibility is likely to be very limited. Some visibility may occur from elevated vantage points where the Proposed Turbines would be seen in the distant background. Overall, significant visual effects are not likely to occur.
	Durrow (Town)	
	Attanagh (Village)	
	Byrnesgrove (Rural Node)	
	Connahy (Rural Node)	
	Threecastles (Rural Node)	
	Ballycallan (Rural Node)	
	Kilmanagh Lisdowney (Rural Node)	
	Gortnahoo (Service centre)	
Recreational Routes	**Jenkinstown Wood – Walled Garden Loop (Jenkinstown Wood Loop included)**: "*Enclosed within the walls of the old Bellew's estate this charming loop winds through the remnants of its mixed broadleaves and conifers on woodland trails.*" (Sportireland.ie)	Visibility is likely to be very limited, as the routes are either located within walled surroundings (where the built environment provides substantial visual screening), within areas of dense forest cover, or views are oriented in opposing directions to the Proposed

		Turbines. Significant visual effects are not likely to occur.
	Granstown Wood and Lake Trail: *"this trail follows well-constructed tracks through this woodland nature reserve generally hugging the shore as it circles secluded Granstown Lake hidden within the surrounding woodland in this serene nature reserve with pleasant views."* (Sportireland.ie).	There is likely to be no actual visibility of the Proposed Turbines as the majority of this trail is within woods and forestry.
15-20km		
Scenic Routes and Views	**T-SR-29**: *"Views to the south along road R691"*	No Theoretical Visibility and view is in the opposite direction to the Proposed Turbines.
	T-SR-30: *"Views to the west and south along road R691"*	No Theoretical Visibility and view is in the opposite direction to the Proposed Turbines.
	T-SV-62: *"Views from the N75 in Borris, east of Thurles"*	On site appraisals found that views were towards the south when travelling along the N75 National Road and that actual visibility of the Proposed Turbines is very limited due to the low-lying nature of the road and the tall vegetation in the surrounding area.
	L-SV-13: *"Views over farmland and River Nore"*	View does not face the Proposed Turbines.
	L-SV-22: *"Views of Mass Lough and of Ballymartin Hill beyond"*	This scenic view is located a 18km to the northeast of the nearest Proposed Turbine (T08) and is facing away from the Proposed Turbines. Whilst some distant views may occur of the Proposed Turbines, at this distance, significant visual effects are not likely to occur.
	L-SV-23: *"Views over farmland and of Ballymartin Hill"*	This scenic view is located approximately 18.9km to the northeast of the nearest Proposed Turbine (T08) and is facing away from the Proposed Turbines. Whilst some distant views may occur of the Proposed Turbines, at this distance, significant visual effects are not likely to occur.

	KK-SV-32: *"View of River Nore Valley to east from Ossory Bridge."*	This scenic view is located approximately 18.7km to the south-east of the nearest Proposed Turbine (T01) and is facing away from the Proposed Turbines. Whilst some distant views may occur of the Proposed Turbines, at this distance, significant visual effects are not likely to occur.
Settlements	**Kilkenny City (including Kilkenny Castle)** (Significant Key Town)	ZTV mapping indicates pockets of both partial and full theoretical visibility within the city itself. On-site visibility appraisals determined that actual visibility of the Proposed Turbines will be significantly restricted from within Kilkenny city (and Castle) itself due to the dense visual screening occurring from the built-up environment and vegetation within this low-lying settlement. Visibility from ground-based receptors from the public road network is not likely to occur and Significant visual effects are not likely to occur.
	Cuffesgrange (Rural Node)	These settlements either have little / no theoretical visibility, or at these distances beyond 15km, within these low-lying settlements, site appraisals determined that visibility is likely to be very limited due to the visual screening provided by the built environment and vegetation. Where visibility does occur, the Proposed Turbines will be seen as small-scale elements relative to the landscape in the distant background. Significant visual effects are not likely to occur.
	Ballyfoyle (Rural Node)	
	Castlecomer (Town)	
	Skehana (Rural Node)	
	Clogherinka (Rural Node)	
	Ballinakill (Village)	
	Abbeyleix (Town)	
	Shannahoe (Village)	
	Errill (Village)	
	Templetuohy (Service Centre)	
	Two-Mile-Borris (Service Centre)	
	Littleton (Service Centre)	
	Ballingarry (Service Centre)	
Recreational Routes	**South Kilkenny Loop**: *"The South Kilkenny Cycle Loop is a 41km circuit that leads you from the medieval heart of Kilkenny City into the quiet, rolling*	Visibility is likely to be very limited, as the routes are either located within settlements (where the built environment provides substantial visual

	farmlands of the Nore Valley." (Alltrails.com)	screening), within areas of dense forest cover, or views are oriented in opposing directions to the Proposed Turbines. Significant visual effects are not likely to occur.
	Loch Dhoire Bhile Loop: *"Nestling under the Slieveardagh Hills this loop follows bog roadways and green tracks along streams and lakeshore through a redeveloped area of old Bord na Mona peatland which has become a wildlife sanctuary, particularly for birds."* (Sportireland.ie)	Whilst visibility may occur from elevated vantage points, at this distance, the Proposed Turbines would be seen as small-scale elements relative to the landscape in the distant background. Significant visual effects are not likely to occur.
	Coille an Fhaltaigh Millennium Park - Red Trail (Green trail included): *"This is an easy walk mainly through hardwoods, which include sessile oak, ash, birch, cherry and spindle and there are also Scot's Pine and oak trees which are over 100 years old."* (Sportireland.ie)	There is likely to be no actual visibility of the Proposed Turbines as the majority of this trail is within woods and forestry. Significant visual effects are not likely to occur.
	Castlecomer - Captains loop (Castlecomer Ardra, Ladies, and Arboretum Loops included): *"This pleasant walk follows wide compacted tracks through mixed woodlands encircling the lower lake as it winds its way through part of the old Wandesforde demesne and is named after a former owner of the estate, Captian R.H. Prior Wandesforde."* (Sportireland.ie)	There is likely to be no actual visibility of the Proposed Turbines as the majority of this trail is within woods and forestry. Significant visual effects are not likely to occur.
	Abbeyleix Loops - Collins Bog loop (Killamuck Bog Loop included): *"This walk on woodland tracks, bog paths, old railway line and country roads takes you through different environments around Abbeyleix, from old buildings to the Lord's Walk, from woodland to bogland to old railway line and through an area managed as a wildlife habitat. It has much of historical interest to offer."* (Sportireland.ie)	There is likely to be no actual visibility of the Proposed Turbines as the majority of this trail is within woods and forestry. Significant visual effects are not likely to occur.
	Nore Valley Kilkenny Bennetsbridge: *"Kilkenny's flagship walk. From the centre of Kilkenny follow the 2km River Nore Linear Park Canal Walk until you*	Only a small section of this walking trail falls within the 20km LVIA Study area and there is likely to be no actual visibility of the Proposed Turbines due

	reach Ossory Bridge, where you will join the 8km Nore Valley Walk. Walkout into the surrounding countryside along the bank of the River Nore. A chance to see otters, kingfishers and a host of other wildlife." (Trailkilkenny.ie)	to the visual screening arising from the built-up environment from within Kilkenny City. Significant visual effects are not likely to occur.

13.5.3 Residential Receptors

During site visits conducted in 2020, 2022, and 2026, visibility appraisals determined that most visibility of the Proposed Turbines will occur in close proximity to the Proposed Turbines. The area surrounding the Proposed Turbines is a rural landscape; however, it is a settled landscape, and residential housing is organised along the local road network as well as in small settlement clusters around local crossroads and junctions. Some residential receptors located in close proximity to the Proposed Wind Farm site will likely have views of the Proposed Turbines and are likely to have some of the greatest visual effects arising as a result of the Proposed Project.

In light of this, several photomontage viewpoint locations representing residential properties located in close proximity to the Proposed Wind Farm site were selected for inclusion in the *Photomontage Booklet* and are assessed in *Appendix 13-3: Photomontage Visual Impact Assessment Tables*, as well as discussed later in this Chapter.

The following representative viewpoints (VPs) and/or Photowires (PWVPs) are located in proximity to residential receptors and settlement centres within 3km from the Proposed Turbines:

- VP05
- VP06
- VP07
- VP08
- VP09
- VP11
- VP12
- VP13
- VP14
- VP18
- PWVP-A
- PWVP-B

13.6 Cumulative Context

Potential cumulative effects between the Proposed Project and other permitted or proposed plans and projects in the area, as set out in Section 2.10 in Chapter 2 of this EIAR, were considered as part of this LVIA. In terms of cumulative landscape and visual effects, other wind energy developments are of primary focus, as these comprise very tall, vertical elements in the landscape (i.e. turbines) and therefore have the most potential to give rise to 'Significant' cumulative landscape and visual effects. Other wind energy developments within 20km of the Proposed Turbines (the LVIA Study Area) were identified by searching planning applications lodged through the online planning portals of the relevant planning authorities (An Coimisiún Pleanála, Kilkenny, Tipperary, and Laois County Councils). This information was then verified by desk-based study and ground-truthing to confirm whether permitted wind energy developments had been constructed. The methodology for identifying cumulative wind farms, and for assessing cumulative landscape and visual effects, is reported in *Appendix 13-1: LVIA Methodology.*

13.6.1 Wind Farms in the LVIA Study Area

This LVIA Chapter assesses the likely landscape and visual impacts of the Proposed Project, both independently, as well as in combination with all other existing and operational wind farm developments in the LVIA Study Area. In this section, all wind farm developments in the LVIA Study Area which potentially contribute to assessment of cumulative and in-combination landscape and visual effects are identified.

All wind farm developments in the LVIA Study Area are identified in this section and each is categorised as one of the following:

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

Table 13-9 below lists the wind energy developments identified within the LVIA Study Area which are included in the photomontage visualisations and the cumulative impact assessment for this LVIA. These are mapped in Figure 13-18 (Cumulative Wind Farms).

Table 13-9 Cumulative Wind Farms within the LVIA Study Area

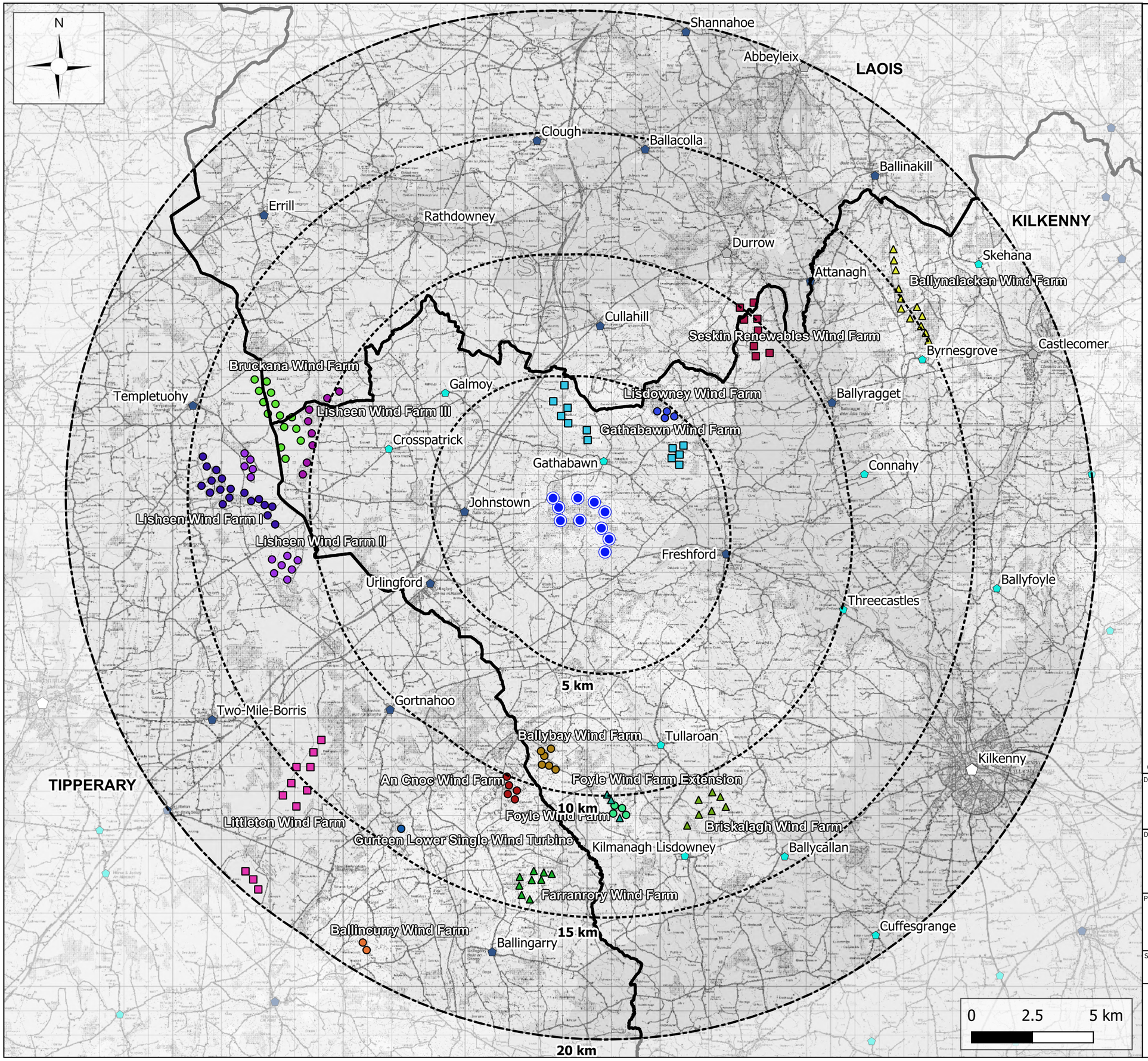
Other Wind Farms	Status	No. of Turbines	Distance from Nearest Proposed Turbine
Up to 5 km			
Gathabawn Wind Farm	Proposed	12	2.4 km from nearest Proposed Turbine T08
Lisdowney Wind Farm	Existing	4	4.5 km from nearest Proposed Turbine T09
Up to 10 km			
Ballybay Wind Farm	Existing	6	8.4 km from nearest Proposed Turbine T01
Seskin Renewables Wind Farm	Proposed	8	8.9 km from nearest Proposed Turbine T10
Lisheen Wind Farm III	Existing	8	9.8 km from nearest Proposed Turbine T07
Foyle Wind Farm Extension	Permitted	3	9.9 km from nearest Proposed Turbine T01
Up to 15 km			
An Cnoc Wind Farm	Existing	5	10.1 km from nearest Proposed Turbine T01

Foyle Wind Farm	Existing	4	10.4 km from nearest Proposed Turbine T01
Bruckana Wind Farm	Existing	14	10.6 km from nearest Proposed Turbine T07
Lisheen Wind Farm II	Existing	12	10.8 km from nearest Proposed Turbine T07
Briskalagh Wind Farm	Permitted	7	10.8 km from nearest Proposed Turbine T01
Lisheen Wind Farm I	Existing	18	11.5 km from nearest Proposed Turbine T07
Littleton Wind Farm	Proposed	11	13.3 km from nearest Proposed Turbine T05
Farranrory Wind Farm	Permitted	9	13.4 km from nearest Proposed Turbine T01
Gurteen Lower Single Wind Turbine	Existing	1	14.1 km from nearest Proposed Turbine T01
Ballynalacken Wind Farm	Permitted	12	14.7 km from nearest Proposed Turbine T10
Up to 20 km			
Ballincurry Wind Farm	Existing	2	18.9 km from nearest Proposed Turbine T01

Within the LVIA Study Area, 10 No. existing, 4 No. permitted and 3 No. proposed wind farms have been identified. The cumulative turbines are primarily located to the south, west, and northeast of the Proposed Turbines. Where cumulative turbines are theoretically visible from the selected photomontage viewpoints, they are included in the photomontage imagery in the Photomontage Booklet (Volume 2 of the EIAR).

These categories give structure to the presentation of cumulative developments in the Photomontage Booklet. However, irrespective of how a development is categorised, the assessments of cumulative landscape and visual effects include all other wind energy developments, and discussion of cumulative interactions on each landscape and visual receptor is proportionate to the likelihood of significant effects occurring on that receptor.

An assessment of cumulative landscape and visual effects is included in the assessment of effects detailed in Section 13.7 - Likely Significant Landscape and Visual Effects.



Map Legend

- LVIA Study Area
- County Boundaries
- Proposed Turbines

Cumulative Wind Farms

- An Cnoc Wind Farm — Existing
- Ballincurry Wind Farm — Existing
- Ballybay Wind Farm — Existing
- Ballynalacken Wind Farm — Permitted
- Briskalagh Wind Farm — Permitted
- Bruckana Wind Farm — Existing
- Farranrory Wind Farm — Permitted
- Foyle Wind Farm — Existing
- Foyle Wind Farm Extension — Permitted
- Gathabawn Wind Farm — Proposed
- Gurteen Lower Single Wind Turbine — Existing
- Lisdowney Wind Farm — Existing
- Lisheen Wind Farm I — Existing
- Lisheen Wind Farm II — Existing
- Lisheen Wind Farm III — Existing
- Littleton Wind Farm — Proposed
- Seskin Renewables Wind Farm — Proposed

Settlements

- County Hub Town
- Town
- Village
- Small Village of Local Importance

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Drawing No.

Figure 13-18

Drawing Title

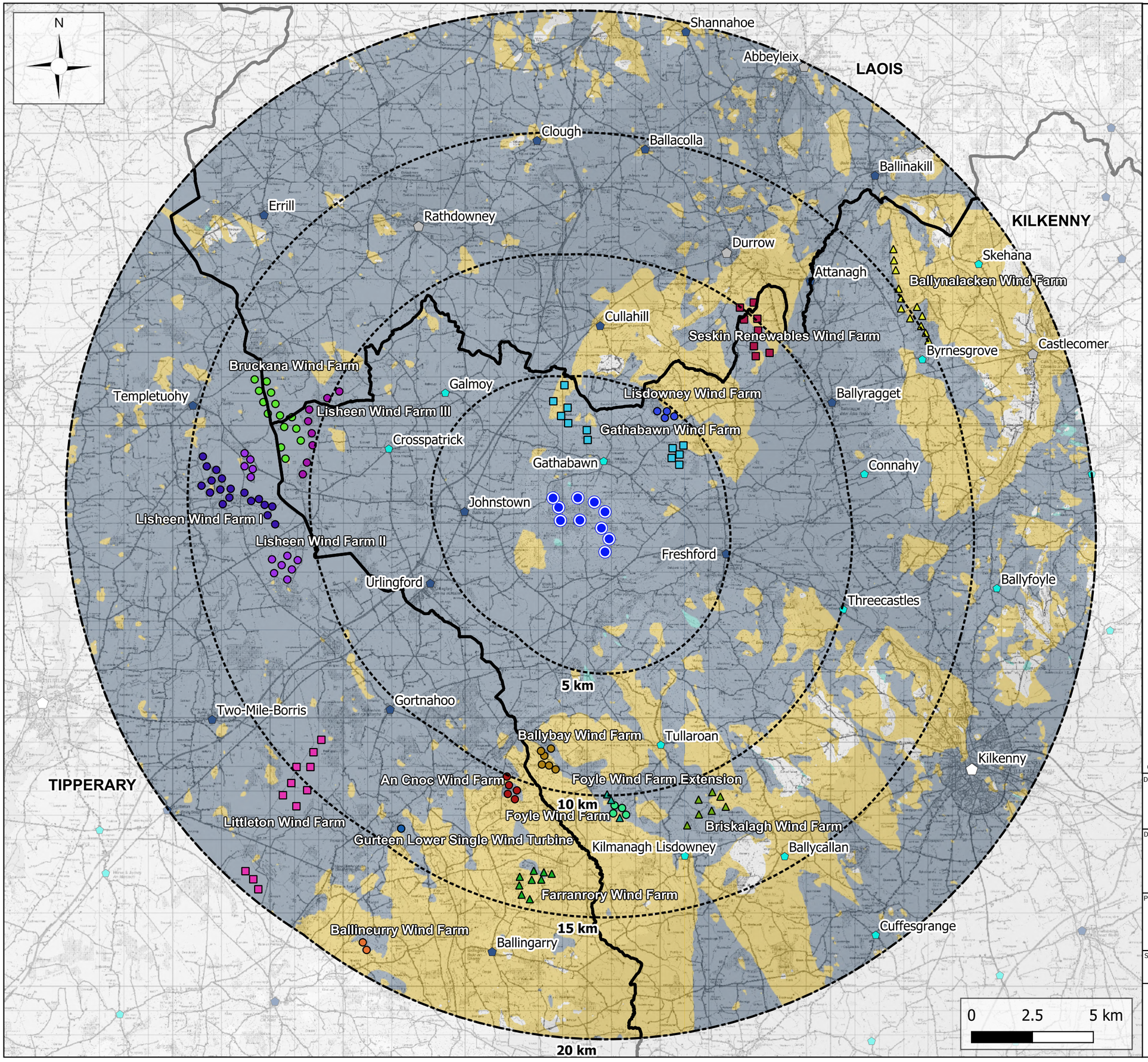
Cumulative Context

Project Title

Killoshulan Wind Farm

Scale	Project No.	Date	Drawn By	Checked By
1:150,000	260172	28.10.2026	GL	DM

MKO Planning and Environmental Consultants



Map Legend

- LVIA Study Area
- County Boundaries
- Proposed Turbines

Cumulative Wind Farms

- An Cnoc Wind Farm — Existing
- Ballincurry Wind Farm — Existing
- Ballybay Wind Farm — Existing
- Ballynalacken Wind Farm — Permitted
- Briskalagh Wind Farm — Permitted
- Bruckana Wind Farm — Existing
- Farranrory Wind Farm — Permitted
- Foyle Wind Farm — Existing
- Foyle Wind Farm Extension — Permitted
- Gathabawn Wind Farm — Proposed
- Gurteen Lower Single Wind Turbine — Existing
- Lisdowney Wind Farm — Existing
- Lisheen Wind Farm I — Existing
- Lisheen Wind Farm II — Existing
- Lisheen Wind Farm III — Existing
- Littleton Wind Farm — Proposed
- Seskin Renewables Wind Farm — Proposed

Settlements

- County Hub Town
- Town
- Village
- Small Village of Local Importance

Cumulative Zone of Theoretical Visibility

- Only Proposed Turbines Theroetically Visible
- Only Cumulative Turbines Theroetically Visible
- Both Proposed Turbines and Cumulative Turbines Theoretically Visible

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Drawing No.

Figure 13-19

Drawing Title

Cumulative Context with ZTV

Project Title

Killoshulan Wind Farm

Scale	Project No.	Date	Drawn By	Checked By
1:150,000	260172	28.10.2026	GL	DM

MKO Planning and Environmental Consultants

13.7 Likely Significant Landscape and Visual Effects

13.7.1 'Do-Nothing' Scenario

If the Proposed Project were not to proceed, no changes would be made to the current land-use practices in the area. Small-scale agriculture and commercial forestry practices in the area would continue to be managed under existing commercial forestry arrangements and farming practices and the impact associated with this would be neutral. However, the opportunity to generate renewable energy and electrical supply to the national grid would be lost, as would the opportunity to further contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. In addition to this, the opportunity for achieving a biodiversity net gain through habitat enhancement works would also be lost.

13.7.2 Construction Phase Effects

It is estimated that the construction phase of the Proposed Project will last approximately 18-24 months and will be 'Short-term'. Construction will involve the installation of 10 No. turbines with a maximum blade tip height of 185m and all associated works, including the substation, BESS, borrow pit and underground cabling. A detailed description of the Proposed Project is included in Chapter 4 of this EIAR.

13.7.2.1 Landscape Effects during the Construction Phase

13.7.2.1.1 *Pre Mitigation Effects*

Associated earthworks, such as the cut and fill and borrow pits required to facilitate construction of the Proposed Project have the greatest potential for landscape effects, where the physical fabric of the landscape is materially altered. Where excavation is required, the existing landcover, vegetation, and spoil will be removed during the construction phase. The construction activities may also cause temporary impacts on the landscape, such as the introduction of temporary structures (i.e. cranes), dust, minor soil erosion and minor alterations to drainage channels. These direct landscape effects will be highly localised to the footprint of the Proposed Project. This aspect of the construction phase will have a 'Moderate', 'Short-term', 'Negative' landscape effect. On balance, these effects are not considered significant.

The Proposed 110kV Underground Cabling which forms part of the Proposed Grid Connection will be located underground; therefore, the greatest landscape effects attributed to this element of the Proposed Project will occur during the construction phase, when the landscape is materially altered to allow installation. The works will include roadside vegetation removal, soil/road surface stripping, trench excavation and other associated construction activities. These activities will cause temporary, localised change to the physical landscape along the Proposed 110kV Underground Cabling, including a very localised part of the River Nore and Nore River Valley (a landscape receptor of 'High' sensitivity) and will not permanently affect the character of the landscape setting or the visual amenity of the wider area. The construction works will be temporary in nature. The construction phase of all underground cabling will be 'Temporary, 'Slight', 'Negative' landscape effects. On balance, these effects are not considered significant. The Proposed 110kV Underground Cabling will only cause perceptible effects on the landscape during construction phase only. No landscape effects will occur during the operational phase, and is therefore not discussed in the Operational Phase Effects.

13.7.2.1.2 Mitigation Measures for Landscape Effects during Construction

All construction activities will follow best practice methods to reduce impacts upon the environment and landscape of the Proposed Project. Further details are presented in the *Construction and Environmental Management Plan* (CEMP) contained in Appendix 4-3 of this EIAR. The following measures will be implemented to mitigate landscape effects during the construction phase of the Proposed Project:

- In all circumstances, excavation depths and volumes will be minimised, and excavated material will be re-used where possible.
- Where spoil arising from construction activities is managed, the vegetative topsoil layer will be removed and reinstated following spoil management.
- Any areas of bare soil remaining after the landscaping phase will be seeded as soon as possible with a grass-seed mix to minimise sediment run-off.
- In most instances, groundworks and excavation trenches will be reinstated upon completion of construction.
- The upper vegetative layer (where still present) of excavated soil shall be stored with the vegetation part of the sod facing the right way up to encourage growth of plants and vegetation at the surface of the stored soil within the spoil storage areas;
- Re-seeding and spreading/planting shall also be carried out in these areas; and,
- Brash/bog mats shall be put in place to support vehicles on soft ground, reducing soil and mineral soils erosion and avoiding the formation of rutted areas, in which surface water ponding can occur

13.7.2.1.3 Residual Landscape Effects

Following the implementation of the mitigation measures, residual direct landscape effects as a result of the Proposed Project during the Construction Phase will range from 'Moderate' to 'Slight'. On balance, these effects are not considered to be significant.

13.7.2.2 Visual Effects during the Construction Phase

13.7.2.2.1 Pre-Mitigation Effects

Proposed Wind Farm

The most substantial visual effects will arise from construction activities at the Proposed Wind Farm, such as assembling tower sections and erecting the Proposed Turbines and the proposed met mast. The equipment and vehicles required to transport and erect the wind farm components include large cranes and large haulage vehicles. There will be occasions during the construction phase when the Proposed Turbines will be partially constructed and may be seen as either stand-alone tower sections or incomplete turbines where only one or two blades are visible. The visual effects arising from the construction of the Proposed Turbines and the ancillary infrastructure such as roads and hardstands to service and build Proposed Turbines T01 to T10 will be experienced by a range of visual receptors in the landscape surrounding the Proposed Wind Farm. The proposed access roads and hardstand areas (including construction compounds) are however, flat features and will be most visible within their immediate surroundings, within the Proposed Wind Farm where there are very few sensitive visual receptors. Overall, visual effects on visual receptors outside of the Proposed Wind Farm will be 'Short-Term', 'Negative' and 'Slight' for the majority of the visual effect during the construction phase, excepting for the temporary works required to build and erect the Proposed Turbines.

Turbine Delivery Route Accommodation Works

Works such as road widening are required at a small number of locations along the proposed Turbine Delivery Route (TDR) to accommodate the large vehicles used to transport turbine components to the

Proposed Wind Farm site. In some instances, minor temporary alterations will be required to the existing streetscape, temporary local road widening, temporary relocation of some signs and street furniture. Full details of the assessment are included as part of the traffic impact assessment set out in Section 15.1.9 of Chapter 15 of this EIAR. The areas of accommodation works are deemed to have a 'Low' sensitivity and the change to occur will be concentrated along the local road network. These works are likely to have 'Temporary', 'Slight', 'Negative' visual effects during the construction phase. On balance, these effects are not considered significant.

Temporary Construction Compounds

There will be 2 No. temporary construction compounds proposed as part of the Proposed Project, located along the newly proposed internal access roads. A detailed description of the temporary construction compounds is provided in Section 4.3.1.5 of Chapter 4. The visual effects of the temporary construction compounds will be localised, considering that construction activities related to them will be most visible within their immediate surroundings. Within the Proposed Wind Farm and its immediate landscape setting, the visual effects on nearby visual receptors arising from the temporary construction compounds are considered to be 'Negative,' 'Short-Term', 'Slight' effects. On balance, these effects are not considered to be significant.

Proposed 110kV Substation and BESS

Visual effects will occur as the Proposed 110kV Substation and BESS are built as a result to the earthworks and requisite construction activities; which will result in short-term, localised change to views in the immediate vicinity of the works. As established through site visits, the Proposed 110kV Substation is located within an agricultural field with a substantial set back distance from the nearest residential receptor, located approx. 375m north of the proposed 110kV substation. The Proposed 110kV Substation has been sited to the south of the northern ridgeline, within an area that is naturally enclosed and visually contained by the surrounding landform, and will not be visible from nearby residential receptors along the local road network, the nearby Tailte Éireann Viewpoint, or designated Kilkenny Scenic View 14. Visual effects arising from the construction of the proposed 110kV substation and BESS are considered to localised, 'Negative', 'Short-Term', 'Not Significant' effects. On balance, these effects are not considered significant.

Proposed 110kV Underground Cabling

The 12.6km of Proposed 110kV Underground Cabling works will consist of the installation of ducts in an excavated trench to accommodate electrical and fibre communications cables to facilitate a connection between the Proposed 110kV Substation and the existing Ballyragget 110kV substation. As the cabling will be located underground, the greatest effects attributed to this element of the Proposed Project will occur during the construction phase. The Proposed 110kV Underground Cabling will be laid predominantly beneath the surface of the public road corridor, with a short section of the route (700m) travelling through an agricultural field, whilst approximately 1.4km of the route located within the Proposed Wind Farm's access roads. The construction phase effects of the underground cabling will be 'Temporary' in duration due to the localised and transient nature of the works moving along the cabling route. The works will include roadside vegetation removal, soil/road surface stripping, excavation, and other associated construction activities. Should any medium planting be removed, it will be replaced with the same or similar species whenever it is not possible to salvage and reinstate. Any areas of bare soil remaining after the landscaping phase will be allowed to revegetate naturally or seeded as soon as possible with a grass seed mix. Regarding the Proposed 110kV Underground Cabling, changes will be localised to the immediate environment surrounding the cabling route and will not permanently affect the visual amenity of the wider area.

The Proposed 110kV Underground Cabling works are likely to cause 'Slight' 'Temporary', 'Negative' visual effects on nearby visual receptors. On balance, these effects are not considered significant. The Proposed 110kV Underground Cabling will only cause perceptible effects on visual amenity during the

construction phase only. No visual effects will occur during the operational phase, and is therefore not assessed further in this Chapter.

13.7.2.2.2 Mitigation Measures / Mitigating Factors for Visual Effects

All construction activities will follow best practice methods to reduce impacts upon the environment and landscape of the Proposed Project. Further details are presented in the *Construction and Environmental Management Plan* (CEMP) contained in Appendix 4-3 of this EIAR. The following mitigation measures and existing mitigating factors have been taken into account in determining the residual construction-phase visual effects:

- Many residential receptors, as well as the roads themselves, are surrounded by treelines and hedgerows that will provide visual screening towards the Proposed Wind Farm and Proposed 110kV Substation.
- General housekeeping measures, necessary for Health and Safety requirements, will ensure that the active construction areas will be kept tidy, further mitigating localised visual impacts during the construction phase.

13.7.2.2.3 Residual Visual Effects

Following implementation of the measures described above, and having regard to the existing mitigating factors within the receiving environment residual visual effects during the construction phase will range from 'Not Significant' to 'Slight', will be 'Short-term' and 'Negative'. On balance, these effects are not considered significant.

13.7.3 Operational Phase Effects

This section reports the landscape and visual effects anticipated during the operational lifetime of the Proposed Project.

Planning permission is being sought for a 35-year operational life of the Proposed Wind Farm from the date of full commissioning of the wind farm, followed by decommissioning, which will involve the removal of the Proposed Turbines from the Proposed Wind Farm site. Potential effects of the Proposed Project during the operational phase are therefore defined as 'Long-term', as per the definition of duration in the EPA (2022) Guidelines *("Effects lasting fifteen to sixty years").* As the Proposed Turbines would be removed at the end of the operational phase, the potential landscape and visual effects on receptors caused by the Proposed Turbines are not permanent and are therefore considered reversible (*"Effects that can be undone, for example through remediation or restoration"*, EPA, 2022).

While there is a possibility that the Proposed Turbines could be replaced at the end of the operational period, this is uncertain, as it would be subject to a new planning application and assessment within a future receiving environment.

13.7.3.1 Landscape Effects During the Operational Phase

13.7.3.1.1 Landscape of the Proposed Wind Farm

The landscape and physical fabric of the Proposed Wind Farm will undergo substantial changes by the introduction of the Proposed Turbines as vertical, man-made structures and other ancillary infrastructure within the landscape of the Proposed Wind Farm site. There will be a 'Substantial' magnitude of change to the landscape in the localised areas within the Proposed Wind Farm site where the landscape is materially altered (infrastructure footprint).

In a local context, the Proposed Wind Farm site is located in an upland, marginal landscape. Commercial forestry is the dominant landcover within the Proposed Wind Farm site itself. The

Proposed Wind Farm site and its immediate setting does not comprise any unique landscape receptors of national interest. The landscape sensitivity of the Proposed Wind Farm site is deemed to be 'Low' (See full rationale in determination of Landscape Sensitivity (combination of Landscape Value and Susceptibility to change in Section 13.4.2.2). 'Low' sensitivity balanced with a 'Substantial' magnitude of change amounts to 'Long-term' landscape effects of 'Moderate' significance upon the physical fabric of the landscape of the Proposed Wind Farm site (see Appendix 13-1 LVIA Methodology, Section 1.7.5) These effects will be highly localised to the footprint of the Proposed Wind Farm. On balance, these effects are not considered to be significant.

Proposed 110kV Underground Cabling

As the Proposed 110kV Underground Cabling Route which forms part of Proposed Grid Connection is located underground, landscape and visual effects during the operational phase will be 'Imperceptible' once the road surface has been reinstated and vegetation has re-established along the roadway or within agricultural land following earthworks during the construction phase. The landscape effects occurring during the construction phase of the Proposed Grid Connection are reported previously in Section 13.7.2: Construction Phase Effects.

Mitigation of Landscape Effects within the Landscape of the Site

The following measures have been included in the design of the Proposed Project to avoid or reduce direct effects on landscape receptors (individual landscape features, and the landscape character of the site as a whole):

- The internal site road layout makes use of existing roads and tracks wherever possible, to reduce the requirement for new tracks within the Proposed Wind Farm site.
- To minimise cut and fill activities required to construct the Proposed Wind Farm, the proposed access roads, and other infrastructure such as hardstands have been designed, insofar as possible, to align with the existing terrain within the landscape of the Proposed Wind Farm site.
- In all circumstances, excavation depths and volumes will be minimised, and excavated material will be re-used where possible.
- During initial vegetation stripping, topsoil material will be temporarily stored on the Proposed Wind Farm site and used for 'landscaping' the edges of the development infrastructure during reinstatement/regrading, including that of the peat and spoil management areas and proposed borrow pits. This will be particularly important in areas of cut and fill. The stripped topsoil will contain a natural seed source of local provenance and result in the re-establishment of baseline vegetation.
- The layout and design of the Proposed Wind Farm has been designed to ensure minimal loss of valuable landscape receptors and biodiversity corridors such as woodland and hedgerows along field boundaries.
- The upper vegetative layer (where still present) of excavated soil shall be stored with the vegetation part of the sod facing the right way up to encourage growth of plants and vegetation at the surface of the stored soil within the spoil storage areas. Re-seeding and spreading/planting shall also be carried out in these areas;
- A *Biodiversity Enhancement and Management Plan* (BEMP) has been prepared as part of this EIAR and is included as *Appendix 6-4* to this EIAR. Enhancement measures included in the BEMP will have a dual effect of providing ecological enhancement to the area as well as screening of some Proposed Wind Farm infrastructure, thereby providing a mitigating effect on landscape. The following measures proposed in the BEMP that will also have a mitigating effect on landscape areas are as follows:
- Planting of 225m of new hedgerow and the bolstering and enhancement of approximately 3.38km of existing hedgerows.

- Enhancement of approximately 11.8ha of existing grassland areas.

Residual Landscape Effects

Once the Proposed Wind Farm is operational and the construction is complete, the landscape will naturally re-vegetate around the Proposed Wind Farm footprint with the aid of mitigation measures (e.g., retention of natural seedbank during soil stripping). Considering the mitigation measures above, and the BEMP, the overall residual effects upon the landscape of the Proposed Wind Farm site is deemed to be 'Moderate'.

13.7.3.1.2 *LCA Assessment Outcomes*

An assessment of the effects on landscape character was undertaken for the 12 No. LCAs within the LCA Study Area scoped in for assessment (Section 13.4.4.1). The assessment criteria and grading scales are detailed in Appendix 13.1 LVIA Methodology (Section 1.7). The individual assessments are summarised in Table 13-10 below and presented in detail in *Appendix 13-2* LCA Assessment Tables.

Table 13-10 LCA Assessment Summary

LCA Ref.	Name	LCA Sensitivity (Appendix 13-2)	Magnitude of Change in LCA (Appendix 13-2)	Residual Significance of Effect (Appendix 13-2)	Significance
KK-LCA-A (N)	Slieveardagh Hills (North)	Low	Moderate	**Moderate**	not significant
KK-LCA-A (S)	Slieveardagh Hills (South)	Low	Slight	**Not Significant**	not significant
KK-LCA-A1	Slievardagh Western Transition Zone	Low	Slight	**Not Significant**	not significant
KK-LCA-A2	Slievardagh Central Transition Zone	Low	Slight	**Not Significant**	not significant
KK-LCA-A3	Slievardagh Eastern Transition Zone	Low	Slight	**Not Significant**	not significant
KK-LCA-B	Castlecomer Plateau	High	Slight	**Slight**	not significant
KK-LCA-F1	Kilkenny Northern Basin	Low	Slight	**Not Significant**	not significant
KK-LCA-H	Nore Valley (South)	High	Slight	**Slight**	not significant

LCA Ref.	Name	LCA Sensitivity (Appendix 13-2)	Magnitude of Change in LCA (Appendix 13-2)	Residual Significance of Effect (Appendix 13-2)	Significance
L-LCA-1	Mountains, Hills and Uplands	Medium	Slight	**Slight**	not significant
L-LCA-2	Lowland Agricultural Areas	Low	Slight	**Not Significant**	not significant
L-LCA-3	Rolling Hill Areas	Medium	Slight	**Slight**	not significant
T-LCA-9	Littleton Farmland Mosaic and Marginal Peatland	Low	Slight	**Not Significant**	not significant

Only KK-LCA-A (N) - Slieveardagh Hills (North) LCA will experience the highest magnitude of change (Moderate) from the Proposed Wind Farm as it will materially alter the landscape of this LCA. The Proposed Turbines are likely to be most visible within 5km, as well as from elevated vantage points within this LCA. On-site appraisals determined that there would be more limited visibility of the Proposed Turbines in parts of this LCA beyond 5km due to the visual screening from intervening vegetation in the landscape which limits views.

Review of landscape policy and the landscape character and sensitivity of the site reported above (Section 13.4), as well as assessment within *Appendix 13-2* concludes that the Proposed Wind Farm is located within an area considered to have 'Low' sensitivity to wind farm development. 2 No. Proposed Turbines are sited within an area considered "*Acceptable in Principle*", while T03-T10 are within areas zoned as "*Not Normally Permissible*", however, all the Proposed Turbines are located within a single landscape character unit characterised by agricultural fields and commercial forestry within a remote, upland, working landscape. Surrounding topography and commercial forestry provide a sense of enclosure and ability to absorb development. As stated throughout the chapter, landscapes of this type are generally considered capable of accommodating commercial wind energy developments due to their large scale, sparse settlement patterns and relatively low landscape sensitivity. The Proposed Project will have a 'Long-term', 'Negative', 'Moderate' residual effect on KK-LCA-A (N) – Slieveardagh Hills (North) LCA. On balance, these effects are not considered significant.

A short section of Proposed Wind Farm road as part of the proposed non-turbine surface infrastructure will materially alter highly localised portions of KK-LCA-A2 and KK-LCA-A3 LCAs, with the wider LCA being unaffected. Effects due to this peripheral roadway addition within these LCAs are 'Long-term', 'Negative', and 'Not Significant'. On balance, these effects are not considered significant. For the vast majority of these two LCAs, the landscape effects will be limited to only perceptual effects on the character of the landscape, resulting in a 'Slight' magnitude of change. When the Proposed Turbines will be visible from either of these LCAs, they will give rise to a 'Long-term', 'Negative', and 'Not Significant' residual landscape effect. On balance, these effects are not considered significant. The Proposed Wind Farm will not materially alter any of the other LCAs within the LCA Study Area. All other LCAs will experience 'Slight' magnitude of change, as only perceptual effects on the character of the LCAs will occur. When the Proposed Turbines will be visible from one of these LCAs, they will

give rise to a 'Long-term', 'Negative', and 'Not Significant' to 'Slight' residual landscape effects on the landscape character of these other LCAs. On balance, these effects are not considered significant.

Part of the Proposed 110kV Underground Cabling will materially alter the physical fabric of LCAs K-LCA-A (N), KK-LCA-A3, KK-LCA-F1 and KK-LCA-H, which will be primarily confined to a very small portion of these LCAs. Changes to the landscape as a result of the Proposed Grid Connection will be most evident at local level during the construction phase, discussed in Section 13.7.2.1 above.

13.7.3.1.3 *Effects on Designated Landscape Receptors of High Sensitivity*

Several designated landscape receptors were identified in the landscape baseline as having high sensitivity and some theoretical visibility indicated by the ZTV, the likely landscape effects on these receptors are discussed below.

Co. Laois – Cullahill Mountain

Whilst Cullahill Mountain is not specifically designated as a sensitive landscape feature in the LCDP, the LCDP notes that *"Sensitive areas include upland areas, visually open and expansive areas and areas in the vicinity of natural heritage or built heritage assets or scenic views."* Furthermore, Table 11.6 of the LCDP identifies 'Mountain Areas' as landscapes of 'High' sensitivity. In this regard, Cullahill Mountain, located to the northeast of the Proposed Turbines, is considered to be landscape receptors of 'High' sensitivity.

The Proposed Turbines are not located on these landscape features, and will therefore, not alter the physical fabric of these landscape receptors. Only perceptual effects on the character of the landscape is likely to occur.

As illustrated by the ZTV mapping (Figure 13-1), theoretical visibility from Cullahill Mountain is largely confined to its southern slopes, with primarily no theoretical visibility beyond. Whilst the Proposed Turbines will be visible or partially visible from elevated vantage points (e.g. see VP19 from Cullahill – residual visual effects of 'Slight') and will increase the extent of wind energy developments seen from this hills, the Proposed Turbines will not alter the immediate landscape setting or appearance or defining topographical characteristic of this hill. The magnitude of change on the landscape character of the hill was therefore deemed to be 'Slight', with an overall residual landscape effect of 'Long-term', 'Negative' and 'Slight'. On balance, these effects are not considered to be significant.

Co. Kilkenny – Sensitive Landscape Features (Ridgelines)

As detailed previously in Section 13.4.1.2, the KCCDP identifies elevated and steep-sided ridgelines as 'Sensitive Landscape Features' / 'Areas of Greater Sensitivity'. The sensitivity of these receptors are considered to be of 'High' landscape sensitivity on account of their designation in the KCDP; however, it is noted that elevated terrain, steep elevations and ridgelines are not unique landscape features in a national context.

The Proposed Turbines are located on the eastern foothills of Spa Hill and Clomantagh Hill, which form part of the wider Slieveardagh Hills complex. As illustrated in Figure 13-2 and Figure 13-14, the Proposed Turbines are not located on the most prominent ridgelines or steepest slopes within the surrounding landscape. Rather, they are situated on the marginal foothills and gently undulating elevated terrain, with the surrounding topography rising towards the more prominent ridgelines and peaks.

Whilst the Proposed Turbines will alter the perceptual character of nearby ridgelines, the following mitigating factors are taken into consideration in determining the residual landscape effects on these landscape features:

- **Iterative design process and avoidance of prominent ridgelines:** None of the Proposed Turbines are located on the most prominent ridgelines or peaks and will not alter the physical fabric of these landscapes. As detailed in Section 13.1.3, the iterative design process resulted in the omission of turbines previously located on the western slopes of Clomantagh Hill, reducing the potential for effects on the character of the landscape.
- **Landscape characteristics of Spa Hill and Clomantagh Hill:** Whilst Spa Hill and Clomantagh Hill are prominent topographical features within the local receiving landscape, elevated ridgelines and hills of this nature are not uncommon within the wider Slieveardagh Hill complex, and these ridgelines are not unique landscape features in a national context. Site appraisals conducted in 2020, 2024, and 2026 did not identify any exceptional landscape qualities that would distinguish these hills from other comparable upland landscapes of regional or national importance.
- **Modified working landscape:** As established in Section 13.4.2.2, the Proposed Wind Farm site comprises a modified working landscape of marginal upland terrain, characterised by extensive tracts of commercial coniferous forestry and agricultural pasture, a landscape identified as being 'Class 3 – Normal' Sensitivity in the LACK, which is described as *"a common character type with a potential to absorb a wide range of new developments"*. From a landscape perspective, the landscape of the Proposed Wind Farm site has been assessed as having a 'Low' sensitivity to wind energy development.
- **Lack of other designations in the LACK / KCCDP:** Neither Spa Hill nor Clomantagh Hill is specifically identified as a landscape of 'Highly Scenic and Significant Visual Amenity Value' in the current KCCDP. Furthermore, the characteristics generally associated with 'Areas of Greater Sensitivity' under the KCCDP, particularly elevated topography with *"sparse vegetation"* and *"little existing development"*, do not fully reflect the character of the Proposed Wind Farm site, which comprises extensive commercial forestry and managed agricultural lands. The existing Lisdowney Wind Farm, located <5km on the wider Slieveardagh Hills upland landscape, also forms an established component of the receiving landscape character.
- **Alignment with the Guidelines (2006, DoEHLG) and Draft 2019 Guidelines (DoHPLG, 2019):** The receiving landscape is considered to align with the *'Transitional Marginal Landscape'* type identified in the the Guidelines (2006, DoEHLG) and Draft 2019 Guidelines (DoHPLG, 2019), as detailed in Section 13.1.3. The Guidelines recognise that wind energy developments may be accommodated on elevated terrain, including ridges and peaks, subject to appropriate siting and design. In this regard, the Proposed Turbines are strategically positioned on the marginal foothills of the elevated landforms, achieving visual separation from the complexity of lower ground.

It is important to note that Section 4.2.2 of of Appendix K (Wind Energy Strategy) notes that (emphasis in bold):

> *"The mapping of the sensitivity of these areas and features* ***should not be viewed as a prohibition on development****, however the visual impact of any large-scale wind energy development in proximity to these features of sensitivity needs to be addressed in a Landscape Impact Assessment report."*

In this regard, as established throughout this Chapter, from an LVIA perspective, such elevated upland landscapes, including marginal foothill landscapes such as the Proposed Wind Farm site, are generally considered capable of accommodating commercial wind energy development due to their large scale, sparse settlement patterns and relatively low landscape sensitivity to wind energy development.

The Proposed Turbines will introduce large-scale vertical structures into the surrounding upland landscape and will alter its character within their immediate vicinity. However, the Proposed Turbines will not be located directly on the peak of these ridgelines, and therefore, the physical characteristics of

the prominent ridgelines and peaks will remain intact, and their continued role as defining topographical features of the wider Slieveardagh Hills landscape will be retained.

Having regard to the positioning of the Proposed Turbines on the marginal foothills, the existing modified character of the receiving landscape, the siting and design principles outlined in the Guidelines (DoEHLG, 2006) and Draft 2019 Guidelines (DoHPLG, 2019), and the embedded mitigation achieved through the iterative design process, the residual landscape effects on the landscape character of these sensitive ridgelines within the immediate vicinity of the Proposed Wind Farm are deemed to be 'Moderate'. The Proposed Turbines will not directly alter the physical fabric of other sensitive ridgelines within the wider LVIA Study Area. Given the separation distances and the limited extent to which the Proposed Turbines would influence the character of the more distant landscape features (beyond 5km), residual landscape effects on the character of these other ridgelines are deemed to be 'Not Significant'. On balance, these effects are not considered significant.

Co. Kilkenny - River Nore and Nore Valley LCA

The River Nore is an LCA that the KCCDP designates as a landscape having a 'Highly Scenic and Significant Visual Amenity Value' and is therefore a landscape of 'High' sensitivity. At its closest point, this LCA is located 5.7km east of the nearest Proposed Turbine (T02).

The Proposed Turbines are not located within the River Nore or the Valley itself, and will therefore not alter the physical fabric of this landscape receptor. Only perceptual effects on the character of the landscape are likely to occur as a result of the Proposed Turbines. The River Nore follows the low-lying contours of the river valley which is situated within a flat landscape. As such, in reality, given the low-lying topography and the presence of mature riparian vegetation and woodland along the river corridor within this landscape receptor, long-range views toward the Proposed Turbines are very limited, as verified by many site visits, examples of which can be seen in VP04 (Ballyragget) – residual visual effects of 'Not Significant' and VP15 (Ardaloo) – residual visual effect of 'Slight'. Where visibility does occur from the few available locations, the Proposed Turbines are seen as small features relative to the landscape in the background of views, set along an elevated ridgeline (comprising a human-modified landscape of commercial forestry and agricultural fields) and not within the immediate visual context of the Nore Valley, as seen in VP04 and VP15. Overall, given the distance and limited visibility of the Proposed Turbines, the Proposed Turbines will not significantly alter the landscape character of this landscape receptor, or significantly impact upon its key scenic or landscape sensitivities. While seasonal variation in foliage may alter the extent of vegetative screening during winter months, given the distance from the Proposed Turbines within this flat low-lying valley, Significant effects on the landscape character or visual amenity on this landscape receptor are not likely to occur. As detailed in Appendix 13-2, the overall residual effect on this landscape receptor is deemed to be 'Long-Term', 'Negative', and 'Slight'. On balance, these effects are not considered significant.

Co. Kilkenny – Clomantagh Hillfort

Clomantagh Hillfort is a cultural heritage receptor of high sensitivity and is located approximately 790m south-west of the nearest Proposed Turbine (T05). The text below discusses the landscape effects on the receiving landscape on which Clomantagh Hillfort is located on. An assessment of visual effects experienced by visual receptors (i.e. visiting in a recreational capacity) at Clomantagh Hillfort is provided in Section 0 below, while in-direct effects on Clomantagh Hillfort as a cultural heritage receptor are assessed separately in Chapter 14 of the EIAR.

The iterative design process resulted in the omission of all turbines on the western slopes of Clomantagh Hill, increasing the physical and visual separation between the Proposed Turbines and Clomantagh Hillfort. As demonstrated in Plate 13-16 below, the hillfort is physically separated from the Proposed Wind Farm site, with no Proposed Project infrastructure located within the hillfort itself. As a result, the Proposed Project will not directly alter the physical fabric of the landscape at Clomantagh

Hillfort. Site investigations determined that effects on the receiving landscape will be limited to changes in landscape character and the setting of the hillfort.

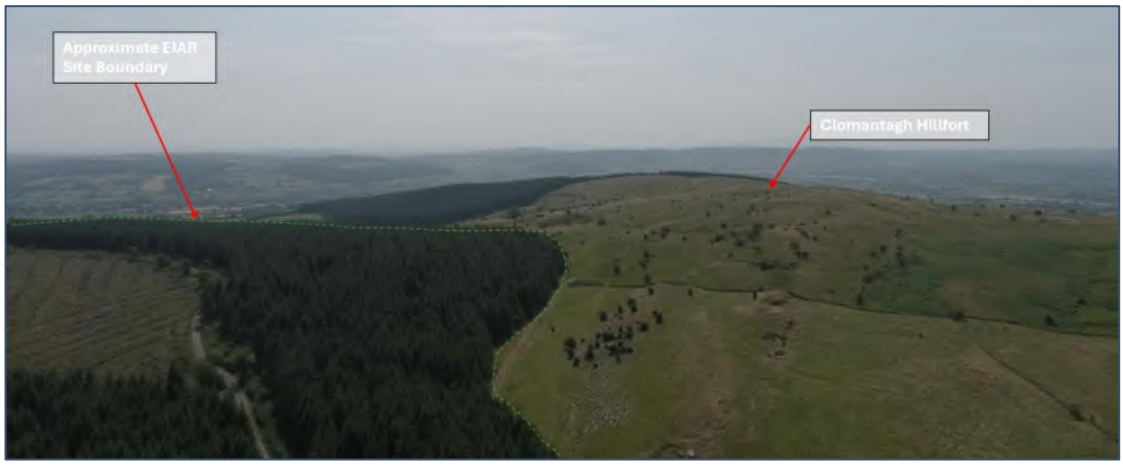


Plate 13-16 Drone Image for Landscape Context: Location of Clomantagh Hillfort in relation to the EIAR Site Boundary

As shown in the imagery below (and discussed in Section 0 below), the Proposed Turbines are physically set back from the hillfort, with no infrastructure located within its immediate footprint. Given the set-back distance of 790m, the Proposed Turbines will not alter the physical fabric of the cultural heritage features of Clomantagh Hillfort. As such, while perceptual changes to the surrounding landscape will occur, the physical character and integrity of Clomantagh Hillfort will be retained.

A viewpoint was captured from Clomantagh Hill, near the hillfort (VP18). The landscape setting is considered to be of 'High' sensitivity on account of its cultural heritage features, while the magnitude of change is deemed to be 'Substantial' due to the large horizontal extent of views. As demonstrated by VP18, the landscape setting is already subject to a high degree of human modification, comprising extensive tracts of commercial forestry and agricultural fields. The visual setting of Clomantagh Hillfort is therefore already influenced by established land uses and human intervention. While the Proposed Turbines will introduce a noticeable change to the character of this landscape setting, they will be accommodated within an existing working upland landscape, rather than a landscape of an unmodified or unspoilt character. Furthermore, the receiving landscape is not specifically recognised as a landscape of national or international renown.

Overall, residual effects on the landscape setting of Clomantagh Hillfort are considered to be 'Long-Term', 'Negative' and 'Significant'. However, these effects relate to perceptual changes in the surrounding landscape setting, rather than any direct alteration to the physical landscape at Clomantagh Hillfort.

13.7.3.1.4 Cumulative Landscape Effects

The wider landscape of the LVIA Study Area includes a number of other existing, permitted, and proposed wind energy developments that contribute to the cumulative baseline. These other developments are listed and mapped previously in Section 13.6. It is highlighted that although the LVIA Study Area includes many cumulative wind farms, many of which are existing and permitted, the likelihood of proposed wind farms (e.g. Proposed Gathabawn, Littleton, Seskin Renewables Wind Farms) cumulatively impacting specific landscape receptors is uncertain and is dependent on a range of factors, most notably the outcome of the planning process.

The landscape of the Proposed Wind Farm site is a modified working landscape of marginal upland terrain comprising commercial coniferous forestry and pasture land that is deemed to be of 'Low' sensitivity to wind energy development (see Section 13.4.2.2 previously). The existing Lisdowney Wind Farm is located within the same LCA (KK-LCA-A (N)) and within the same undulating transitional upland terrain as the Proposed Turbines, approximately 4.5km from the nearest Proposed Turbine,

T09. The existing Ballybay and Foyle Wind Farm, as well as the permitted Briskalagh Wind Farm are set within the southern section of this LCA (KK-LCA-A (S)). The Proposed Project will cumulatively impact this LCA in combination with the existing Lisdowney Wind Farm, the existing Ballybay and Foyle Wind Farm, as well as the permitted Briskalagh Wind Farm. Potential cumulative landscape effects will also occur on this LCA with the proposed Gathabawn and Seskin Renewables Wind Farms. The LCA in which the cumulative developments are located, KK-LCA-A (N), is a large scale and robust, and mostly comprising 'ridgelines', 'hills' and 'foothill' landscape types, capable of effectively accommodating multiple wind energy developments.

The Proposed Turbines will be visible at distance in combination with other existing wind energy developments (See *EIAR Volume 2: Photomontage Booklet*) from other high sensitivity landscape receptors in the LVIA Study Area, such as Clomantagh and Capponellan Hill (Co. Laois sensitive landscapes). Whilst the Proposed Turbines and other cumulative turbines are visible, and indirectly influence the character of these higher sensitivity landscapes, they are well set back and do not impact the key sensitivities and key landscape qualities associated with these receptors.

13.7.3.2 Visual Effects during the Operational Phase

13.7.3.2.1 *Photomontage Viewpoints*

Photomontages were used to assess the visual effects arising from the Proposed Project at 20 No. viewpoint locations, presented in *EIAR Volume 2: Photomontage Booklet* and shown on Figure 13-20 and the A0 LVIA Baseline Map (*Appendix 13-4*). In line with GLVIA3, the viewpoints selected were informed by a range of factors, including "ZTV analysis, by fieldwork, and by desk research" (para 6.18, GLVIA3). The locations chosen for photomontages follow a detailed and extensive process including review of baseline information, site visits and high-quality photo taking at multiple locations within the LVIA Study Area. Many locations, which based on a desktop review had the potential for views of the Proposed Turbines, had complete intervening visual screening or were screened to such an extent that the development of photomontages was not considered useful in terms of the assessment process i.e., little or no visibility towards the Proposed Turbines.

Alternative Photomontage Viewpoints - Photowires

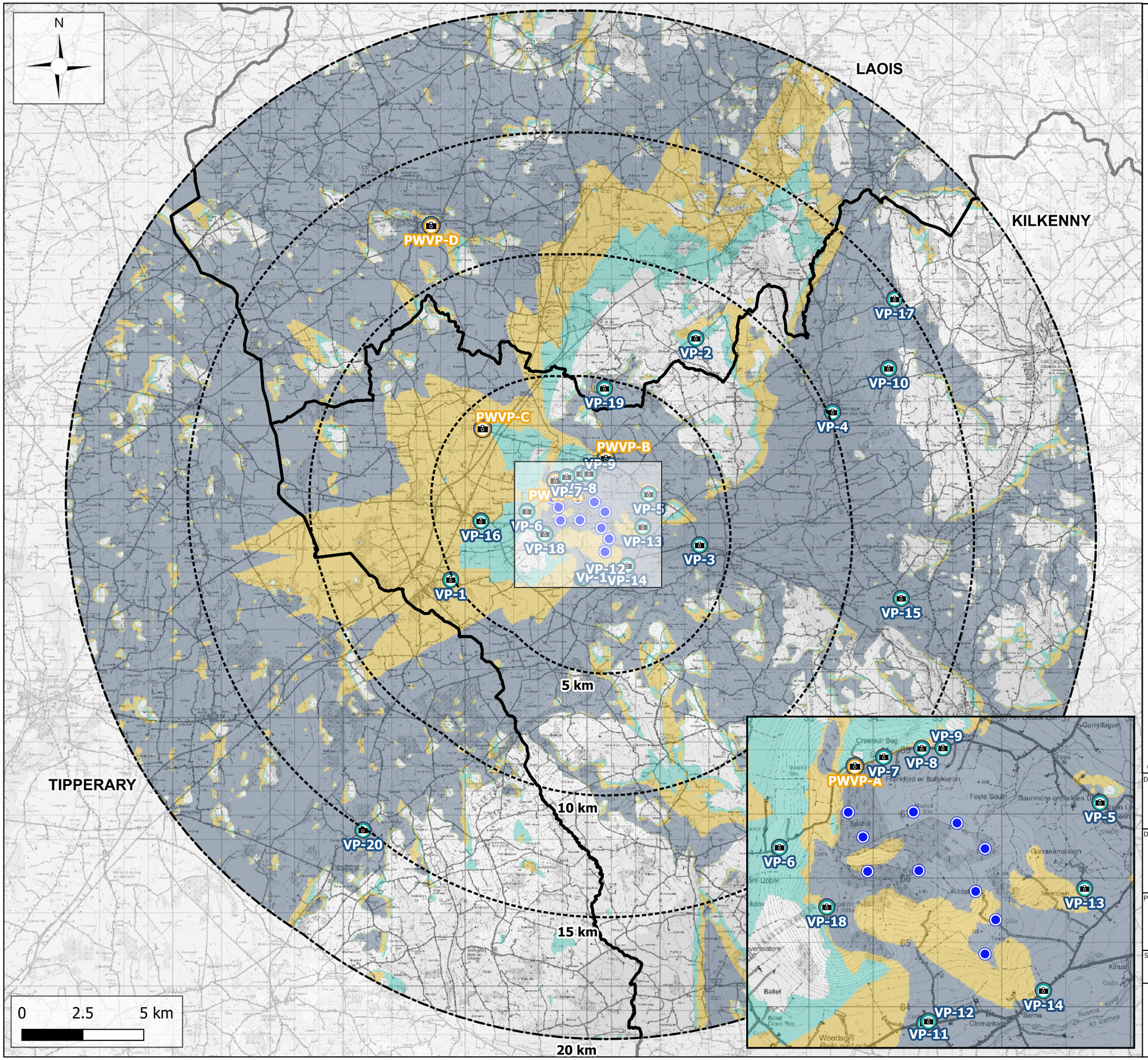
Photomontage imagery was captured from other locations in the LVIA Study Area other than the 20 No. Photomontage Viewpoints (VPs) that are in the *EIAR Volume 2: Photomontage Booklet*. Photowires are early-stage, non-verifiable photomontage visualisations comprising panoramic photos with overlaid wirelines (Classified as Type 3 Visualisations in the Landscape Institute Technical Guidance Note, 2019). Photowires were produced from four other viewpoint locations in the LVIA Study Area. These viewpoints were not selected for inclusion in the *EIAR Volume 2: Photomontage Booklet* due to limited visibility of the Proposed Turbines or a more appropriate nearby location being included in *Volume 2: Photomontage Booklet* instead. These Photowires do not form part of the assessment of visual effects included in *Appendix 13-3*. However, these 4 No. Photowires are presented within this chapter, and are reproduced (scaled to fit within an A4 page) and discussed later in this section of the Chapter to illustrate certain points. The location of Photowire viewpoints are marked as orange icons in Figure 13-20 and are discussed throughout the chapter as Photowire Viewpoint Locations (referred to as PWs (e.g., PWVP-A, etc.)

13.7.3.2.2 *Photomontage Viewpoint Assessment Outcomes*

Visual Effects were assessed using the assessment methodology described in *Appendix 13-1*. Each Viewpoint location is shown in Figure 13-20 below. The individual, comprehensive and detailed assessment from the 20 No. viewpoints are presented in *Appendix 13-3* of this Chapter and summarised in Table 13-11below. *Appendix 13-3* should be read in conjunction with the Photomontage Booklet forming Volume 2 of the EIAR.

The visual effect of the Proposed Project was assessed from each viewpoint in terms of the sensitivity of the visual receptors, along with the magnitude of change, as recommended in GLVIA3. This, in conjunction with a detailed review of the photomontages themselves as well as the likely visibility of the Proposed Turbines within the LVIA Study Area informed the assessment of visual effects.

Visualisations such as photomontages are tools that can represent the likely effect of a development and are used to inform the reader's prediction of how that development will appear in the landscape. In terms of the predicted visual quality of the Proposed Project, however, whether a visual effect is deemed to be positive, negative, or neutral, this involves a degree of subjectivity. What appears to be a positive effect to one viewer could be deemed to be a negative effect by another viewer. All predicted visual effects of the viewpoints below are Long-Term and Direct effects.



Map Legend

- LVIA Study Area
- County Boundaries
- Proposed Turbines
- Photomontage Viewpoint Locations
- Photowire Viewpoint Locations

Zone of Theoretical Visibility

- 1-3 Turbines Theoretically Visible
- 4-7 Turbines Theoretically Visible
- 8-10 Turbines Theoretically Visible

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Drawing No.

Figure 13-20

Drawing Title

Viewpoint Locations

Project Title

Killoshulan Wind Farm

Scale	Project No.	Date	Drawn By	Checked By
1:150,000	260172	28.10.2026	GL	DM

MKO Planning and Environmental Consultants

Table 13-11 Summary of Appendix 13-3 Photomontage Assessment Tables

VP No.	Description	Grid Ref. (ITM)	Sensitivity of Receptor(s) (at Viewpoint)	Magnitude of Change	Significance of Residual Visual Effect
VP01	View from a T-junction just off the R-693 Regional Road in the townland of Mountfinn, located approximately 5.1km west of the nearest Proposed Turbine (T05).	E: 629,353 N: 663,716	Medium	Slight	**Not Significant**
VP02	View from the L-5753 Local Road and designated Laois scenic view (L-SV-04) in the townland of Aharney, located approximately 7.9km north-east of the nearest Proposed Turbine (T09).	E: 639,416 N: 673,623	High	Negligible	**Not Significant**
VP03	View from the R-693 Regional Road in the townland of Buananiska, located approximately 3.7km east of the nearest Proposed Turbine (T02).	E: 639,568 N: 665,140	Medium	Slight	**Slight**
VP04	View from the N77 National Road in the townland of Ballyragget, located approximately 10.2km east of the nearest Proposed Turbine (T10).	E: 645,028 N: 670,591	Medium	Slight	**Not Significant**
VP05	View from L-1804 Local Road along the North Kilkenny Cycle Route in the townland of Balleen Lower, located approximately 1.9km east of the nearest Proposed Turbine (T10).	E: 637,481 N: 667,223	High	Slight	**Slight**
VP06	View from the L-1805 Local Road along KCCDP designated scenic route (KK-SV-14) in the townland of Ballycuddihy, located approximately 1.2km west of the nearest Proposed Turbine (T07).	E: 632,480 N: 666,523	High	Slight	**Slight**

VP No.	Description	Grid Ref. (ITM)	Sensitivity of Receptor(s) (at Viewpoint)	Magnitude of Change	Significance of Residual Visual Effect
VP07	View at Taillte Eireann Viewing Point (No.165) just off the L-1805 Local Road along KCCDP designated scenic route (KK-SV-14) in the townland of Frankford/Ballykieran, located approximately 0.9km north of the nearest Proposed Turbine (T08).	E: 634,107 N: 667,934	High	Moderate	**Moderate**
VP08	View from the L-1805 Local Road along KCCDP designated scenic route (KK-SV-14) in the townland of Frankford/Ballykieran, located approximately 1km north of the nearest Proposed Turbine (T08).	E: 634,700 N: 668,068	High	Moderate	**Moderate**
VP09	View from the L-1805 Local Road along KCCDP designated scenic route (KK-SV-14) in the townland of Foyle North, located approximately 1.1km north of the nearest Proposed Turbine (T08).	E: 635,031 N: 668,073	High	Moderate	**Moderate**
VP10	View from the R-694 Regional Road along KCCDP designated scenic route (KK-SV-12) in the townland of Finnan, located approximately 13km east of the nearest Proposed Turbine (T10).	E: 647,330 N: 672,388	High	Slight	**Slight**
VP11	View from the R-693 Regional Road, across from Clomantagh Castle in the townland of Clomantagh Lower, located approximately 1.4km south-west of the nearest Proposed Turbine (T01).	E: 634,743 N: 663,778	High	Slight	**Slight**
VP12	View from within the grounds of Clomantagh Castle/Church in the townland of Clomantagh Lower, located approximately 1.4km south-west of the nearest Proposed Turbine (T01).	E: 634,806 N: 663,812	High	Slight	**Slight**

VP No.	Description	Grid Ref. (ITM)	Sensitivity of Receptor(s) (at Viewpoint)	Magnitude of Change	Significance of Residual Visual Effect
VP13	View from farm trail just off the L-1810 Local Road in the townland of Garranamanagh, located approximately 1.5km east of the nearest Proposed Turbine (T02).	E: 637,241 N: 665,881	High	Moderate	**Moderate**
VP14	View from the R-693 Regional Road in the townland of Barna, located approximately 1.1km south-east of the nearest Proposed Turbine (T01).	E: 636,599 N: 664,289	High	Moderate	**Moderate**
VP15	View from the N77 National Road in the townland of Ardaloo, located approximately 12.2km south-east of the nearest Proposed Turbine (T02).	E: 647,844 N: 662,951	Medium	Slight	**Slight**
VP16	View from the R-435 Regional Road in the townland of Donaghmore Lower, located approximately 3.1km west of the nearest Proposed Turbine (T07).	E: 630,593 N: 666,124	High	Slight	**Slight**
VP17	View from the L-5840 Local Road along KCCDP designated scenic route (KK-SV-19) in the townland of Ballynalacken, located approximately 14.7km north-east of the nearest Proposed Turbine (T10).	E: 647,575 N: 675,235	High	Slight	**Slight**
VP18	View from within Clomantagh Hillfort at Clomantagh Hill, located approximately 0.8km south-west of the nearest Proposed Turbine (T05).	E: 633,219 N: 665,594	High	Substantial	**Significant**

VP No.	Description	Grid Ref. (ITM)	Sensitivity of Receptor(s) (at Viewpoint)	Magnitude of Change	Significance of Residual Visual Effect
VP19	View from L-57581 Local Road which makes up part of the Gathabawn Loop walking trail in the townland of Gorteennahilla, located approximately 4.6km north of the nearest Proposed Turbine (T08).	E: 635,666 N: 671,570	High	Slight	**Slight**
VP20	View from the R-689 Regional Road and designated Tipperary Scenic Route (T-SR-31) in the townland of Mellisson, located approximately 15km south-west of the nearest Proposed Turbine (T09).	E: 625,752 N: 653,442	High	Slight	**Slight**

The significance of the residual visual effect was not considered to be Profound or Very Significant, at any of the 20 viewpoint locations. The residual effects were found to be Significant (1) Moderate (5), Slight (11) and Not Significant (3). The viewpoint assessment results (see *Appendix 13-3*) will be summarised and discussed in more detail in the following sections.

It is to be anticipated that wind farms inevitably cause some 'Significant' visual effects on proximate sensitive visual receptors due to the prominence of turbines within landscape views and the 'Substantial' magnitude of change which will arise in close proximity to a wind farm development. A key focus in this LVIA is identifying the scenarios where the greatest likelihood of significant effects occurs. Significant residual visual impacts have been identified at 1 photomontage viewpoint representing visual receptors (see VP18 - *Appendix 13-3*). Residual significant impacts only occur for a small number of receptors and are not representative of effects experienced across the wider LVIA Study Area, where visibility and the resulting magnitude of change generally diminish with distance or are reduced by intervening landform, vegetation, forestry and built form.

13.7.3.2.3 Discussion of Visibility and Visual Effects on Specific Visual Receptors in the LVIA Study Area

The assessment of visual effects uses photomontages shown in the *Volume 2 Photomontage Booklet*, and discussion of these effects is aided by the photowires presented in this chapter. ZTV mapping is also a useful tool for scoping receptors in and out (based on bare-ground topography) and the selection of photomontage viewpoints. The following section discusses the visual effects arising at key sensitive visual receptors within the ZTV and scoped in for assessment previously in Section 13.5 – Visual Baseline.

KCCDP Scenic View V14 (Map ref. KK-SV-14) / Tailte Éireann Viewing Point

KK-SV-14 is described in the KCCDP as *"Views north and east on the Johnstown/Gattabaun Road No. LP1805 between junctions with Road nos. LT18054 and LT18056".* This designated scenic view provides expansive, panoramic views overlooking the flat and low-lying landscape extending into the distant background to the north and east.

All Proposed Turbines are located to the south of the L-1805 local road, in the opposing direction to the scenic views identified in the KCCDP, within a modified working upland landscape comprising agricultural fields and extensive tracts of commercial forestry. Consequently, while the Proposed Turbines will be visible from certain locations along the designated road, they will not obstruct the principal panoramic scenic views to the north and east. Site appraisals determined that, due to the extent of roadside visual screening (see Section 13.3.3: Route Screening Analysis), visibility of the Proposed Turbines varies along the route, with partial and intermittent visibility along the eastern portions and more open visibility along the central and western portions. In a journey scenario, visual effects will generally be momentary, with receptors mostly required to look away from the principal scenic views (north / east) to experience views of the Proposed Turbines (south).

Four viewpoints (VP06, VP07, VP08 and VP09) were captured along the designated road to represent the varying extents of visibility. The assessment below considers visual effects experienced by receptors travelling in both directions, as well as those experienced from the main viewing location at the Tailte Éireann Viewing Point (VP07).

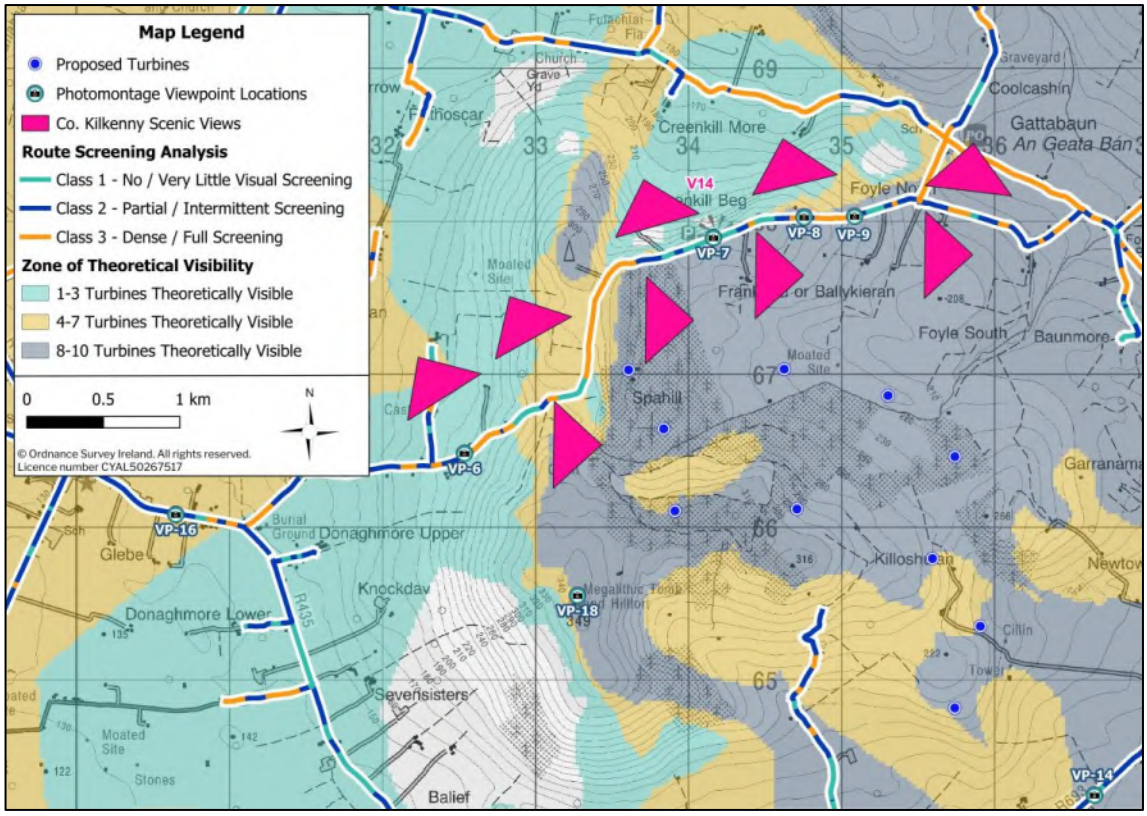


Figure 13-21 Zone of Theoretical Visibility for KK-SV-14

KK-SV-14 – Westbound Receptors (Travelling East to West)

VP09 and VP08 were captured along the eastern portions of the designated road, representing views of the Proposed Turbines experienced by westbound receptors. VP09 is located approximately 1.1 km north of the nearest Proposed Turbine (T08). The Proposed Turbines are visible across a relatively wide horizontal extent of the working upland landscape to the south, with T08 and T09 appearing as prominent features. The remaining turbines reduce in apparent scale as they recede into the distance, with partial screening from intervening vegetation. VP08, located approximately 330 m further west, represents a similar view, with varying degrees of visibility due to intervening vegetation. Residual visual effects of 'Moderate' were deemed to arise at both viewpoints.

Although the Proposed Turbines are visible from these locations, they are situated in the opposing direction to the designated scenic views. In a westbound journey scenario, the expansive panoramic views to the north as we as to the east (behind the receptors), while the Proposed Turbines will be located to the south. As such, receptors would generally need to turn their heads to experience views of the Proposed Turbines.

KK-SV-14 – Eastbound Receptors (Travelling West to East)

VP06 was captured towards the western portion of the designated road, approximately 1.2 km south-west of the nearest Proposed Turbine (T07). From this location, only three of the ten Proposed Turbines are visible. Turbine T07 appears as a prominent feature, while the remaining turbines are either largely or fully screened by intervening landform and vegetation. A residual visual effect of 'Slight' was deemed to arise at this viewpoint. At VP06, views are relatively short-ranging due to the rising landform and intervening vegetation, with limited opportunities for expansive panoramic views to the east, which form part of the principal scenic amenity identified in the KCCDP.

PWVP-A (Plate 13-17 below), captured further along this section of road, demonstrates the extent of visual screening provided by intervening roadside vegetation and commercial forestry, largely obscuring visibility of the Proposed Turbines.



Plate 13-17 PWVP-A: Photowire view of dense visual screening in the direction of the Proposed Turbines from L-1805 local road (KK-SV-14)

KK-SV-14 – Taillte Éireann Viewing Point

VP07 was captured from the car park at the Tailte Éireann Viewing Point, which affords expansive, long-ranging panoramic views to the north and east, overlooking the extensive low-lying landscape. VP07 was specifically captured looking southwards, in the opposing direction to these scenic views, to represent one of the most open views of the Proposed Turbines from the designated road.

From this location, the Proposed Turbines are visible across a relatively wide horizontal extent of the working upland landscape, with T05, T07 and T08 appearing as prominent features. The remaining turbines are seen at varying set-back distances, reducing in apparent scale as they recede into the distance.

As reported in Appendix 13-3, a residual visual effect of 'Moderate' was deemed to arise at VP07. However, this effect relates to views looking southwards towards the Proposed Turbines, rather than the principal scenic views to the north and east, which remain unobstructed by the Proposed Wind Farm.

KK-SV-14 / Taillte Éireann Viewing Point – Summary of Visual Effects

Overall, while the Proposed Turbines will introduce new elements into views experienced along KK-SV-14, they are primarily seen in the opposing direction to the designated scenic views, within a modified working upland landscape capable of accommodating wind energy development without undermining the key scenic qualities of the route.

Residual visual effects along KK-SV-14 are 'Long-Term', 'Negative' and range from 'Imperceptible' (where no visibility occurs), to 'Moderate' at locations with more open views towards the proposed turbines. A residual 'Long-Term', 'Negative' 'Moderate' visual effect was deemed to arise at the Tailte Éireann Viewing Point, although this relates to views in the opposing direction to the principal scenic amenity. On balance, these effects are not considered significant.

KCCDP Scenic View V19 (Map Ref. KK-SV-19)

KK-SV-19, described in the KCCDP as *"View west towards the Slieve Bloom Mountains on road no's LS5840 and LS5839 from the junction with road nos. LS5839 and LS5846 (Ballymartin Cross Roads)."* is located approximately 13.9km north-east from the nearest Proposed Turbine (T10) and has pockets of full theoretical visibility. VP17 was captured along this scenic view, within an area of full theoretical visibility and is representative of the views experienced from this scenic view. This viewpoint was assigned a 'High' sensitivity on account of KK-SV-19, and an overall 'Slight' magnitude of change was deemed to arise for this viewpoint. Overall, visual effects on this scenic route are 'Long-Term',

'Negative', and ranges from 'Imperceptible' (where the Proposed Turbines are not visible – no theoretical visibility) to 'Slight'. On balance, these effects are not considered to be significant.

KCCDP Scenic View V12 (Map Ref. KK-SV-12)

KK-SV-12, described in the KCCDP as *"Views overlooking Castlecomer and Ballyragget on the Castlecomer/Ballyragget Road (R694) between its junctions with road nos. LT5852 and LT5847"* is located approximately 12.5km north-east from the nearest Proposed Turbine (T10). VP17 was captured along this scenic view at Ballynalacken Hill, within an area of full theoretical visibility and is representative of the views experienced from this scenic view. This viewpoint was assigned a 'High' sensitivity on account of KK-SV-12, and an overall 'Slight' magnitude of change was deemed to arise for this viewpoint. Overall, visual effects on this scenic route are 'Long-Term', 'Negative', and ranges from 'Imperceptible' (where the Proposed Turbines are not visible – no theoretical visibility) to 'Slight'. On balance, these effects are not considered to be significant.

LCDP Scenic View V004 (Map Ref. L-SV-04)

L-SV-04, described in the LCDP as *"Views towards Knockmannon Hill",* is located approximately 5km north-east from the nearest Proposed Turbine (T9). As seen in Figure 13-16, there is very little partial theoretical visibility of the Proposed Turbines from this scenic view. However, given the proximity of this scenic view, and its direction towards the Proposed Turbines, it has been scoped in for further assessment. VP2 was captured from this scenic view. This viewpoint was assigned a 'High' sensitivity. As detailed in Appendix 13-3, only one of the Proposed Turbines (T07) is clearly visible in this view, to the right of Knockmannon Hill. A 'Negligible' magnitude of change was deemed to arise, resulting in a residual 'Not Significant' visual effect. Overall, visual effects on this scenic view is deemed to be 'Long-Term', 'Negative', and 'Not Significant'. On balance, these effects are not considered to be significant.

TCDP Scenic Route SR31 (Map Ref. T-SR-31) / Scenic Route SR63 (Map Ref. T-SR-63)

T-SR-31, described in the TCDP as *"Views to the west between Glengoole and Ballysloe, along road R689"* is located approximately 15km north-east from the nearest proposed turbine (T05) and has primarily stretches of full theoretical visibility. VP20 was captured along this scenic route where site appraisals determined that most visibility occurs. This viewpoint was assigned a 'High' sensitivity. As detailed in Appendix 13-3, Proposed Turbines are seen as small features in the distant background relative to the landscape, beyond the distant ridgeline. An overall 'Slight' magnitude of change was deemed to arise, resulting in a residual 'Slight' visual effect at this viewpoint. Overall, visual effects on this scenic route are deemed to be 'Long-Term', 'Negative', and range from 'Imperceptible' (where no visibility occurs) to 'Slight'. On balance, these effects are not considered to be significant.

On-site appraisals determined that visibility from Tipperary Scenic Route 'T-SR-63', described in the TCDP as "*Views from M8 near Longford's Pass"* will be far more limited that those experienced at T-SR-31 due to the low-lying nature of the landform and intervening mature vegetation. Overall, visual effects on this scenic route are deemed to be 'Long-Term', 'Negative', and range from 'Imperceptible' (where no visibility occurs) to 'Not Significant'. On balance, these effects are not considered to be significant.

Settlements Within 5km

All settlements discussed in this sub-section are discussed as a high-level overview, with the focus placed on the settlement as a whole. Effects on residential receptors and residential areas within these settlements located in closer proximity to the Proposed Turbines are discussed in detail in Section 13.5.3 Residential Receptors, separately.

Visual effects within and around settlements are mitigated by the following embedded design measures:

- **Best Practice Setback from Residential Receptors:** All Proposed Turbines, substantially exceed the minimum 500m set-back distance from residential properties as set out in the Guidelines (DoEHLG, 2006), also provides for the 4-times-tip-height set-back distance from residential receptors explicitly set out for residential visual amenity by the Draft 2019 Guidelines (DoHPLG, 2019)
- **Micro-siting to avoid visual prominence on surrounding residential receptors:** Turbines previously located on the lower slopes were omitted where their scale and position relative to the surrounding residential receptors resulted in greater visual prominence and reduced the overall coherence of the turbine layout, particularly in views on the approach from Freshford. Turbines were omitted from potentially viable land to the south-east of the Proposed Wind Farm site to mitigate visual impact on residential receptors in this area.
- **Omission of all turbines on the western slope of Clomantagh Hill**: The removal of turbines from this area has resulted in greater set-back distances between the Proposed Turbines and visual receptors to the west, reducing potential visual effects on local residential amenity. As demonstrated by the ZTV (Figure 13-1), theoretical visibility from the areas immediately west of the Proposed Turbines is largely limited to partial theoretical visibility.

Johnstown: The centre of Johnstown is located approx. 3.9km west from the nearest Proposed Turbine T09. As seen in by the ZTV (Figure 13-1), there is only partial theoretical visibility within Johnstown. On-site appraisals determined that actual visibility within the settlement is far less. Figure 13-4 within the Route Screening Analysis shows that the majority of roads within the settlement of Johnstown, as well as those on the periphery of the settlement, are classified as having 'Full/Dense' Visual Screening or 'Partial/Intermittent' Visual Screening. As a result, visibility of the Proposed Turbines within the low-lying streetscapes and street level receptors within the centre area of Johnstown will be limited. This is primarily due to the visual screening occurring from the built environment and intervening vegetation within this low-lying settlement. As a result, 'Not Significant' residual visual effects occur from the streetscape and street level receptors within the centre area of Johnstown.

There will likely be greater visibility of the Proposed Turbines on the outskirts of the settlement, where more open views towards the Proposed Turbines occur. VP16 was captured to the east of Johnstown along the Kilkenny Road as it exists Johnstown. As detailed in *Appendix 13-3*, a 'Slight' magnitude of change was assigned to this viewpoint, and an overall residual effect of 'Slight' was deemed to occur. Overall, visual effects in the settlement of Johnstown are 'Long-Term', 'Negative', and ranges from 'Not Significant' to 'Slight'. On balance, these effects are not considered significant.

Freshford: The centre of the settlement of Freshford is located 4.8km east of the nearest Proposed Turbine, T02. This settlement has primarily full theoretical visibility of the Proposed Turbine. On-site appraisals determined that actual visibility within the settlement is far less due to dense visual screening occurring from the built environment and intervening vegetation within this low-lying settlement. As a result, 'Not Significant' residual visual effects occur from the streetscape and street level receptors within the centre area of Freshford. VP03 was captured on the outskirts of Freshford. As discussed in *Appendix 13-3*, from this viewpoint the Proposed Turbines are visible on the elevated plateau in the background of the view, within a modified, working landscape of upland terrain comprising commercial forestry and pastureland. An overall 'Slight' magnitude of change was deemed to occur, with an overall 'Slight' residual visual effect. Visual effects at the settlements at Freshford are deemed to be 'Long-Term', 'Negative', and range from 'Not Significant' to 'Slight'. On balance, these effects are not considered significant.

Gathabawn: The centre of the settlement of Gathabawn is located 1.7km north from the nearest Proposed Turbine T09. Figure 13-4 within the Route Screening Analysis shows that the majority of roads within the settlement of Gathabawn, as well as those on the periphery of the settlement, are classified as having 'Full/Dense' Visual Screening or 'Partial/Intermittent' Visual Screening, with views similar as to those shown in PWVP-B below.



Plate 13-18 Photowire PWVP-B: Example view from Gathabawn showing dense visual screening in the direction of the Proposed Turbines

There may be occasionally, more open visibility on the outskirts of Gathabawn in the direction of the Proposed Turbines, similar to those as seen in VP08 (residual 'Moderate' visual effect) and VP09 (residual 'Moderate' visual effect'). Overall, visual effects in the settlement of Gathabawn are 'Long-Term' and 'Negative' and ranges from 'Imperceptible' (where no visibility occurs) to 'Moderate'. On balance, these effects are not considered significant.

Settlements Beyond 5km

Embedded design measures discussed in the preceding section also applies for the settlements beyond 5km. Nevertheless, beyond 5km from the Proposed Turbines, the apparent scale and visual prominence of the Proposed Turbines will be further reduced with increased set-back distance. This can be seen at:

- VP01, captured on the outskirts of **Urlingford** (approximately 5.1km west from the nearest Proposed Turbine T05), where the magnitude of change was deemed to be 'Slight', with a 'Slight' residual visual effect.
- VP04, captured on the outskirts of **Ballyragget** (approximately 10.2km to the east of the nearest Proposed Turbine T10), where the magnitude of change was deemed to be 'Slight', with a 'Not Significant' residual visual effect.
- PWVP-D, captured within **Rathdowney**, where the majority of the Proposed Turbines are visually screened from view due to dense intervening vegetation and built form (see Plate 13-19 below).



Plate 13-19 Photowire PWVP-D: View from within Rathdowney - Example of dense visual screening in the direction of the Proposed Turbines

On-site visibility appraisals determined that similar visibility would occur from other settlements in the wider landscape that were scoped in for further assessment in Section 13.5.2.1 previously, including **Crosspatrick**, and **Galmoy**. At these locations, the Proposed Turbines will generally be viewed as distant background elements, with their perceived scale gradually reducing in height as they recede into the distance. Overall, residual visual effects at all these settlements would be 'Long-Term', 'Negative', and range from residual 'Imperceptible' visual effects to residual 'Not Significant' / 'Slight' visual effects. On balance, these effects are not considered to be significant.

Recreational Routes

North Kilkenny Cycle Route and North Kilkenny Cycle Loop: These long-distance cycle routes traverse both low-lying and elevated terrain, with pockets of full theoretical visibility throughout each of them. On-site visibility appraisals determined that the greatest visibility of the Proposed Turbines occurs within 5km of the Proposed Turbines. VP03 and VP05 were captured along the route within 5km, where the magnitude of change was deemed to be 'Slight' at both viewpoints, resulting in residual visual effects of 'Slight'. Beyond 5km, on-site visibility appraisals determined that visibility and prominence of the Proposed Turbines decreases with distance. This is demonstrated by VP04, located approximately 460m south of the cycle route, and 10km from the nearest Proposed Turbine, and VP10, located approximately 480km north of the cycle route and 13km from the nearest Proposed Turbine, where the Proposed Turbines are seen as small features relative to the landscape in the distant background, occupying a limited horizontal extent of the view. A residual visual effect of 'Slight' was deemed to arise at these viewpoints. Overall, residual visual effects along the North Kilkenny Cycle Route and the North Kilkenny Cycle Loop are considered to be 'Long-Term' and 'Negative', ranging from 'Imperceptible', where no visibility occurs, to 'Slight'. On balance, these effects are not considered significant.

Gathabawn and Cullahill Mountain Walking Loops: A network of walking trails is located approximately 5 km north of the Proposed Turbines, extending across Cullahill Mountain and Knockmannon Hill. There is predominantly full theoretical visibility within 5km of the Proposed Turbines, with little to no theoretical visibility beyond the Cullahill and Knockmannon ridgelines. On-site visibility appraisals determined that actual visibility from the lower slopes is substantially restricted by intervening vegetation (as seen in PWVP-B previously – see Plate 13-18). VP19 was captured from an elevated location on Cullahill Mountain and is representative of some of the most open views towards the Proposed Turbines likely to be experienced from elevated sections of these routes. As reported in Appendix 13-3, the Proposed Turbines are seen as moderately scaled features along the elevated ridgeline in the background of the view, with their height profile broadly following the undulating

nature of the underlying landform. A magnitude of change of 'Slight' was deemed to arise, resulting in a residual visual effect of 'Slight'. Overall, residual visual effects along these walking trails are considered to be 'Long-Term' and 'Negative', ranging from 'Imperceptible', where no visibility occurs, to 'Slight' at more elevated locations with open views towards the Proposed Turbines. On balance, these effects are not considered significant.

Designated Cultural Heritage Receptors

Clomantagh Hillfort: Clomantagh Hillfort is a cultural heritage receptor of high sensitivity, located approximately 790m south-west of the nearest Proposed Turbine (T05). Clomantagh Hill and the associated hillfort are situated on privately owned land with **no** public access. As such, views from this location are not representative of those experienced by the wider public, but are limited to the landowner and those granted access by the landowner.

A viewpoint was captured from Clomantagh Hill, near the hillfort (VP18). As reported in Appendix 13-3, the Proposed Turbines are seen as large-scale, prominent features across the elevated landscape, occupying a wide horizontal extent of the view. While there is an impact on the visual setting of the landscape, this visual setting is already characterised by a considerable degree of human modification, comprising extensive tracts of commercial forestry and agricultural fields.

A residual visual effect of 'Long-Term', 'Negative' and 'Significant' was deemed to arise at VP18. However, given the absence of public access to Clomantagh Hillfort, such effects will only be experienced by the landowner and those granted access, thereby substantially limiting the number of visual receptors affected. Such effects are confined to a very limited number of visual receptors and are not representative of visual effects experienced across the wider surrounding landscape.

Clomantagh Castle / Clomantagh Lower Church and Cemetery: Clomantagh Castle (located approximately 1.3km south of the nearest Proposed Turbine T01) and Clomantagh Lower Church and Cemetery (located approximately 1.4km south of T01) are cultural heritage receptors of high sensitivity, located within areas of full theoretical visibility. On-site visibility appraisals determined that actual visibility is considerably less than indicated by the ZTV, with views largely screened by intervening landform and vegetation. This is demonstrated by VP11 (captured along the R693 regional road overlooking the church and cemetery) and VP12 (captured within the cemetery looking towards Clomantagh Castle).

As demonstrated by VP11, six of the ten Proposed Turbines are either fully or partially visible, with T01 appearing as a prominent feature, while the remaining visible turbines are mostly seen above and beyond the ridgeline. VP12 demonstrates a greater extent of visual screening, with only T03 clearly visible and the remaining turbines largely or fully screened by intervening landform and vegetation. Dense, mature vegetation surrounding Clomantagh Castle, the church and cemetery, together with intervening field boundary vegetation, provides substantial visual screening, restricting visibility towards the Proposed Turbines. As reported in Appendix 13-3, a 'Slight' magnitude of change was deemed to arise at both viewpoints, resulting in residual visual effects of 'Slight'. The Proposed Turbines are primarily seen beyond intervening ridgelines and treelines, maintaining visual separation from the castle, church and cemetery. Furthermore, as a result of previous design iterations, the removal of turbines previously located west of the westernmost ridgeline reduces the number and horizontal extent of the Proposed Turbines in views from Clomantagh Castle. Clomantagh Castle and the adjoining church and cemetery are primarily sensitive in a local context and are not widely recognised tourist destinations attracting large numbers of visitors. As such, views of the proposed turbines from this location would only be experienced by a relatively limited number of people who visit the site, thereby limiting the overall extent of visual effects. Residual visual effects are considered to be 'Long-Term', 'Negative' and 'Slight' at these locations. On balance, these effects are not considered significant.

An assessment of effects on Clomantagh Castle, Church and Cemetery as cultural heritage receptors, including effects on their cultural heritage setting, is provided separately in Chapter 14 of the EIAR.

Grangefertagh Round Tower: Grangefertagh Round Tower is a cultural heritage receptor of high sensitivity, located approximately 3.9km north-west from the nearest Proposed Turbine, T07, and falls within an area of partial theoretical visibility. In reality, on-site visibility appraisals determined that actual visibility of the Proposed Turbines is substantially more limited due to dense intervening vegetation. PWVP-C captured north-west of the round tower was captured to illustrate this and shows that the Proposed Turbines are located beyond intervening vegetation and built form and are not visible from this location. As such, no visual effects will occur at Grangefertagh Round Tower.



Plate 13-20 Photowire PWVP-C: Views overlooking Grangefertagh Round Tower

13.7.3.2.4 Visual Effects on Residential Receptors

During the iterative design process, early-stage LVIA appraisals identified local residential receptors as some of the most sensitive receptors with the greatest potential to be impacted by the Proposed Turbines with regard to visual impacts. Consequently, effects on residential receptors were of key consideration throughout the iterative design process for the Proposed Project. This section of the LVIA firstly states how design measures have been used to mitigate the potential for significant visual effects on some areas of residential amenity and then gives an overview of the residential context in terms of population density in the surrounding area and the geographic arrangement of residential receptors in close proximity to the Proposed Wind Farm. Finally, a visual impact assessment of each cluster of residences is reported, these assessments use analysis of aerial maps, photomontages and photowire visualisations with the intention of identifying the worst-case scenario for potential visual effects on these residential receptors in close proximity to the Proposed Wind Farm.

The design of the Proposed Wind Farm has been informed by industry best practice set-back distances, with regard to the siting of the Proposed Turbines relative to residential receptors, including the following measures:

- All Proposed Turbines exceed the mandatory 500m set-back distance from residential receptors set out in the Guidelines (DoEHLG, 2006).
- The siting of all Proposed Turbines provides for the recommended 4-times-tip-height set-back distance from third-party receptors for residential visual amenity as prescribed by Draft 2019 Guidelines (DoHPLG, 2019).

The design of the Proposed Wind Farm has been subject to a number of embedded design mitigation measures, including:

- **Micro-siting to avoid visual prominence on surrounding residential receptors:** Turbines previously located on the lower slopes were omitted where their scale and position relative to the surrounding residential receptors resulted in greater visual prominence and reduced the overall coherence of the turbine layout, particularly in views on the approach from Freshford. Turbines were omitted from potentially viable

land to the south-east of the Proposed Wind Farm site to mitigate visual impact on residential receptors in this area.

- **Omission of all turbines on the western slope of Clomantagh Hill:** The removal of turbines from this area has resulted in greater set-back distances between the Proposed Turbines and visual receptors to the west, reducing potential visual effects on local residential amenity. As demonstrated by the ZTV (Figure 13-1), theoretical visibility from the areas immediately west of the Proposed Turbines is largely limited to partial theoretical visibility.

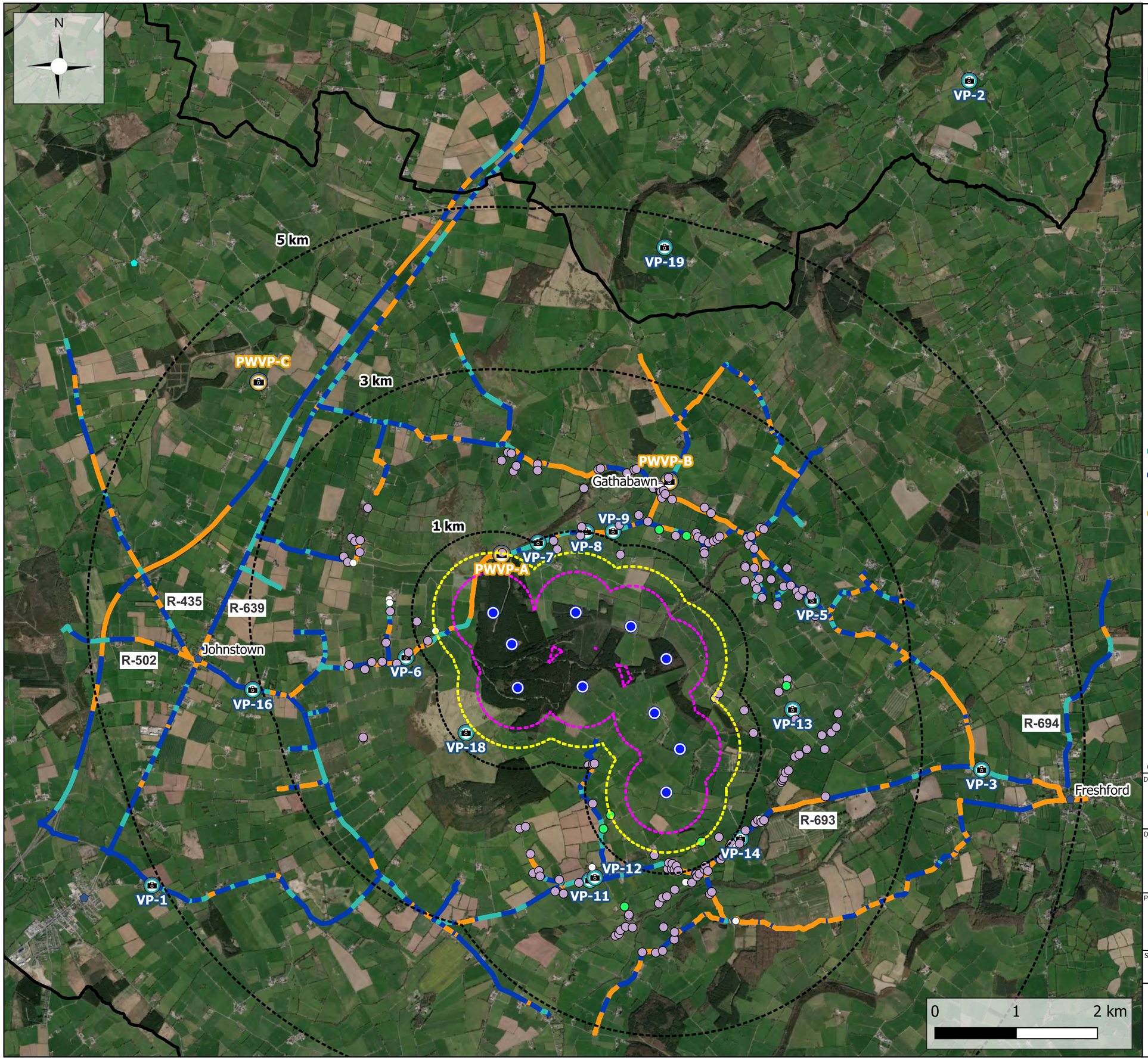
Residential Context: Population Density and Arrangement of Dwellings

As previously reported in the landscape baseline (see previous Section 13.4.2 Landscape Character and Sensitivity of the Proposed Wind Farm site), the Proposed Wind Farm itself is located within a modified, marginal working landscape. The surrounding area, where the Proposed Turbines are actually visible is a rural landscape. It is not a densely populated area, and as established previously, very limited visibility occurs from the vast majority of residential receptors within 5km of the Proposed Turbines. The below Residential Receptors Map (Figure 13-22) illustrates how the Proposed Turbines are set-back from residential receptors in the surrounding landscape with respect to distances compliant with guidance in the Guidelines (DoEHLG, 2006) and Draft 2019 Guidelines (DoHPLG, 2019). There are 29 No. residential receptors located within 1km of Proposed Turbines. The closest residential receptor is located approximately 740m from the nearest Proposed Turbine (T01) i.e. greater than the minimum recommended setback as identified in the Guidelines (DoEHLG, 2006) and greater 4x tip height set back as identified in the Draft 2019 Guidelines (DoHPLG, 2019).

Assessment of Residential Amenity – Photomontages

10 photomontage viewpoints were taken within 3km of the Proposed Turbines to represent the residential receptors in close proximity to the Proposed Wind Farm, along with 2 No. photowire viewpoints, which were not ultimately brought forward as photomontages due to lesser visibility.

Photomontages are just one of the tools employed during the LVIA that was conducted in order to inform the assessment of landscape and visual effects. The visual impact assessment is strongly informed by site visits and the reading of the landscape on the ground. It would be a disproportionate measure to include an individual photomontage from every residential receptor, and this is not required to conduct a thorough and robust assessment of landscape and visual effects. In line with the guidance laid out in GLVIA3, the viewpoints selected for the LVIA conducted were informed by a range of factors including the *"ZTV analysis, by fieldwork, and by desk research"* (para 6.18, GLVIA3). Furthermore, GLVIA3 states that representative viewpoints are *"selected to represent the experience of different types of visual receptor, where larger numbers of viewpoints cannot all be included individually and where the significant effects are unlikely to differ"* (para 6.19 GLVIA3). The large number of viewpoints used in the conduct of the LVIA particularly in very close proximity to the Proposed Turbines are sufficient to represent the residential receptors within the LVIA Study Area, including the *"distribution of population"* (para 6.18, GLVIA3).



Map Legend

- Buffers from Proposed Turbines
- County Boundaries
- 500m setback buffer (the Guidelines (DoEHLG, 2006))
- 740m setback buffer (Draft 2019 Guidelines (DoHPLG, 2019)
- Proposed Turbines

Imagery

- Photomontage Viewpoint Locations
- Photowire Viewpoint Locations

Dwellings with 3km

- Involved Landowner
- Dwelling
- Vacant

Settlements

- Village

Route Screening Analysis

- Class 1 - No / Very Little Visual Screening
- Class 2 - Partial / Intermittent Visual Screening
- Class 3 - Dense / Full Visual Screening

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Drawing No.

Figure 13-22

Drawing Title

Residential Receptors

Project Title

Killoshulan Wind Farm

Scale	Project No.	Date	Drawn By	Checked By
1:45,000	260172	28.10.2026	GL	DM

MKO Planning and Environmental Consultants

Assessment of Residential Receptors to the West (North-West and South-West)

To the west of the Proposed Turbines, the rural landscape is primarily characterised by agricultural fields enclosed by hedgerows, treelines and dense shrub vegetation. Residential receptors are generally situated along the local road network, either as dispersed dwellings or in small clusters surrounded by agricultural fields.

The omission of all turbines previously located on the western slopes of Clomantagh Hill (see Section 3.2.5.2 of Chapter 3 for previous design iterations) has subsequently increased the set-back distances between the Proposed Turbines and residential receptors to the west, reducing their visual prominence from this area. As illustrated by the Residential Receptors Map (Figure 13-22), areas immediately west of the Proposed Turbines primarily only have partial theoretical visibility. On-site appraisals determined that actual visibility is further restricted by vegetation and built form. The Route Screening Analysis (see Section 13.3.3) identifies the surrounding road network as predominantly having 'Partial/Intermittent' or 'Full/Dense' Visual Screening, interspersed with stretches of 'No/Very Little' screening.

On-site visibility appraisals determined that the greatest visibility of the Proposed Turbines from residential receptors to the north-west will generally occur within approximately 1km of the Proposed Turbines. Photomontage Viewpoints VP06, VP07, VP08 and VP09 were captured along the L-1805 local road, within the townlands of Ballycuddihy, Frankford/Ballykieran and Foyle North, and represent views experienced by residential receptors closest to the Proposed Turbines. As detailed in *Appendix 13-3*, visibility varies considerably between these locations. At VP06, turbine T07 appears as a prominent feature, while only the blades of turbines T05 and T09 are visible beyond the intervening ridgeline and vegetation. The remaining turbines are fully screened. More open views occur at VP07, VP08 and VP09, where the nearest turbines appear as prominent features within the working upland landscape. The remaining turbines are seen at varying set-back distances, reducing in apparent scale as they recede into the distance, with intervening vegetation providing varying degrees of visual screening.



Plate 13-21 Drone view captured in July 2026, facing south from within the townland of Grangefertagh

A 'Slight' magnitude of change and 'Slight' residual visual effect were assessed at VP06, while a 'Moderate' magnitude of change and 'Moderate' residual visual effect were assessed at VP07, VP08 and VP09. Furthermore, the key scenic views available for these residential receptors are directed northwards and north-eastwards across the extensive low-lying plains. The Proposed Turbines are located to the south, in the opposing direction to these panoramic views. Although some nearby dwellings are orientated towards the Proposed Turbines, the turbines will not interrupt the principal scenic outlook across the lowlands available from these dwellings.

On-site visibility appraisals determined that views towards the Proposed Turbines from residential receptors beyond their immediate proximity will generally be further restricted by intervening landform

and vegetation, with views more typically resembling those represented by VP06. This is further illustrated by PWVP-A, presented previously, where the Proposed Turbines are largely screened from view, and PWVP-C, captured in the townland of Grangefertagh approximately 4km north-west from the nearest Proposed Turbine, T07, where intervening vegetation and built form fully screen the Proposed Turbines.

Where more open views occur further west, the Proposed Turbines will generally appear smaller in scale and more set back within the landscape than those seen in VP07, VP08, and VP09. This is demonstrated by VP16, captured on the outskirts of Johnstown, where a 'Slight' magnitude of change and a 'Slight' residual visual effect were assessed, as detailed in *Appendix 13-3*. Similarly, VP01, captured on the outskirts of Urlingford approximately 5.1km south-west of the nearest Proposed Turbine, shows the turbines set back beyond the intervening ridgeline, with only five turbines either fully or partially visible. A 'Slight' magnitude of change and a 'Not Significant' residual visual effect were also deemed to arise at this viewpoint.



Plate 13-22 Drone view facing east from within the townland of Clomantagh Lower

Many residential receptors in the surrounding area will experience more restricted views than those represented by these open viewpoints, due to roadside screening (see Route Screening Analysis – Section 13.3.3 previously) and mature vegetation surrounding their properties. As discussed in Section 0, visibility from the low-lying streetscapes within Johnstown and Gathabawn is also substantially restricted by built form and intervening vegetation, as illustrated by PWVP-B in Gathabawn previously.

Overall, residual visual effects on residential receptors to the north-west range from 'Imperceptible', (where no visibility occurs) to 'Moderate' in localised areas where more open views are available. On balance, these effects are not considered significant.

Assessment of Residential Receptors to the East

Similar to the west of the Proposed Wind Farm site, the rural character of the landscape to the east of the Proposed Turbines is primarily defined by agricultural fields enclosed by mature hedgerows and treelines. There is primarily full theoretical visibility of the Proposed Turbines in this direction. However, on-site visibility appraisals determined that actual visibility is substantially more limited due to intervening dense vegetation. As demonstrated by the Route Screening Analysis (see Section 13.3.3), the road network to the east of the Proposed Turbines is predominantly characterised by 'Intermittent/Partial' or 'Dense/Full' visual screening, with very limited sections where 'Little/No' visual screening occurs.

VP05 was captured within an area of 'Little/No' visual screening in the townland of Balleen Lower, approximately 1.9km east of the nearest Proposed Turbine, T10. This viewpoint represents one of the more open views available towards the Proposed Turbines. As detailed in *Appendix 13-3*, eight of the ten Proposed Turbines are visible, although the majority are partially screened by intervening landform

and mature boundary vegetation, with the upper portions of T10 and T04 most clearly visible above the ridgeline. A 'Slight' magnitude of change and a 'Slight' residual visual effect were assessed at this viewpoint. The Proposed Turbines are seen beyond intervening agricultural fields and treelines, which provide a sense of physical and visual separation from the viewpoint (as well as the residential receptors).

VP13 was captured in the townland of Garranamanagh, approximately 1.4km east of the nearest Proposed Turbine, T02. This viewpoint was specifically selected from a relatively open, elevated location to represent the greater extent of visibility that may be experienced by residential receptors to the east of the Proposed Turbines. As detailed in *Appendix 13-3*, eight of the ten Proposed Turbines are visible, with T01, T02 and T03 appearing as prominent features within the view, whilst the remaining turbines are located at greater set-back distances and are partially screened by intervening landform and vegetation. A 'Moderate' magnitude of change and a 'Moderate' residual visual effect were assessed at this viewpoint. However, the relatively open nature of this viewpoint is not representative of the wider area. On-site appraisals determined that many of the surrounding roads and residential properties are enclosed by mature hedgerows and treelines, which substantially restrict visibility towards the Proposed Turbines. As such, comparable levels of visibility will be limited to relatively localised areas where such open views are available.

Further south, VP11 was captured along the R693 Regional Road in the townland of Clomantagh Lower, approximately 1.4km south-west of the nearest Proposed Turbine, T01. As detailed in *Appendix 13-3*, six of the ten Proposed Turbines are either fully or partially visible, with T01 appearing as a prominent feature, whilst the remaining visible turbines are primarily seen above and beyond the intervening ridgeline. A 'Slight' magnitude of change and a 'Slight' residual visual effect were assessed at this viewpoint. VP14 was captured further east along the R693 Regional Road, in the townland of Barna, approximately 1.1km south-east of the nearest Proposed Turbine, T01. This viewpoint illustrates a relatively open view towards the Proposed Turbines, with T01 appearing as a prominent feature and the remaining turbines reducing in apparent scale as they recede into the distance. As detailed in *Appendix 13-3*, a 'Moderate' magnitude of change and a 'Moderate' residual visual effect were deemed to arise at this viewpoint. Furthermore, on-site visibility appraisals determined that the key scenic views available for these residential receptors are directed southwards towards the Slieverdagh Hills. The Proposed Turbines are located to the north, in the opposing direction to these panoramic views. Although some nearby dwellings are orientated towards the Proposed Turbines, the turbines will not interrupt the principal scenic views available from these dwellings.

VP03 was captured on the outskirts of Freshford, approximately 3.7km east of the nearest Proposed Turbine, T02, to represent the more open views available towards the Proposed Turbines from this direction. As detailed in *Appendix 13-3*, all ten Proposed Turbines are visible on the uphills in the background of the view. A 'Slight' magnitude of change and a 'Slight' residual visual effect were assessed at this viewpoint. Visibility from residential receptors within Freshford itself will be substantially more limited due to screening from the built environment.

The iterative design process has also incorporated design measures to reduce potential visual effects on residential receptors in this direction (see Section 3.2.5.2 of Chapter 3 for previous design iterations). In particular, turbines previously located on the lower slopes of the hills were omitted where their position and apparent scale would have resulted in greater visual prominence from surrounding residential receptors, particularly on the approach from Freshford. Turbines were omitted from potentially viable lands to the south-east to further reduce visual effects on residential receptors in this area, by reducing the number and horizontal extent of turbines visible from these locations.

In all instances, the siting of the Proposed Turbines exceeds the recommended 500m set-back distance from residential dwellings set out in the Guidelines (DoEHLG, 2006) and also provides for the recommended four-times-tip-height set-back distance (in this case, 740m) for residential visual amenity set out in the Draft 2019 Guidelines (DoHPLG, 2019).

Overall, residual visual effects on residential receptors to the east of the Proposed Turbines are considered to range from 'Imperceptible' (where no visibility occurs), to 'Moderate' in localised areas where more open views towards the Proposed Turbines are available. On balance, these effects are not considered significant.

Summary of Visual Effects on Residential Receptors

Within the LVIA Study Area, residual visual effects on residential receptors are considered to range from 'Imperceptible', where no visibility occurs, to 'Moderate' for a relatively small number of residential receptors in close proximity to the Proposed Turbines. Visual effects within and around residential receptors are mitigated by a number of embedded design measures, including:

- All Proposed Turbines exceed the mandatory 500m set-back distance from residential receptors set out in the Guidelines (DoEHLG, 2006).
- All Proposed Turbines provide for the recommended 4-times-tip-height set-back distance from third-party receptors for residential visual amenity as prescribed by Draft 2019 Guidelines (DoHPLG, 2019).
- Micro-siting to avoid visual prominence on surrounding residential receptors: Turbines previously located on the lower slopes were omitted where their scale and position relative to the surrounding residential receptors resulted in greater visual prominence and reduced the overall coherence of the turbine layout, particularly in views on the approach from Freshford. Turbines were omitted from potentially viable land to the south-east of the Proposed Wind Farm site to mitigate visual impact on residential receptors in this area.
- Omission of all turbines on the western slope of Clomantagh Hill: The removal of turbines from this area has resulted in greater set-back distances between the Proposed Turbines and visual receptors to the west, reducing potential visual effects on local residential amenity. As demonstrated by the ZTV (Figure 13-1), theoretical visibility from the areas immediately west of the Proposed Turbines is largely limited to partial theoretical visibility.

On balance, having regard to these factors, residual visual effects on residential receptors are mitigated, and are not considered significant.

13.7.3.2.5 *Visual Effects Relating to the Proposed 110kV Substation*

As established in the baseline investigations, the Proposed 110kV Substation has been sited to the south of the northern ridgeline, within an area that is naturally enclosed and visually contained by the surrounding landform. As a result, the Proposed 110kV Substation will not be visible from nearby visual receptors, including residential receptors, the nearby Tailte Éireann Viewpoint, or designated Kilkenny Scenic View 14 – see Plates below. Accordingly, no visual effects on these visual receptors will arise as a result of the Proposed 110kV Substation.



Figure 13-23 Photomontage Viewpoints in relation to the Proposed 110kV Substation

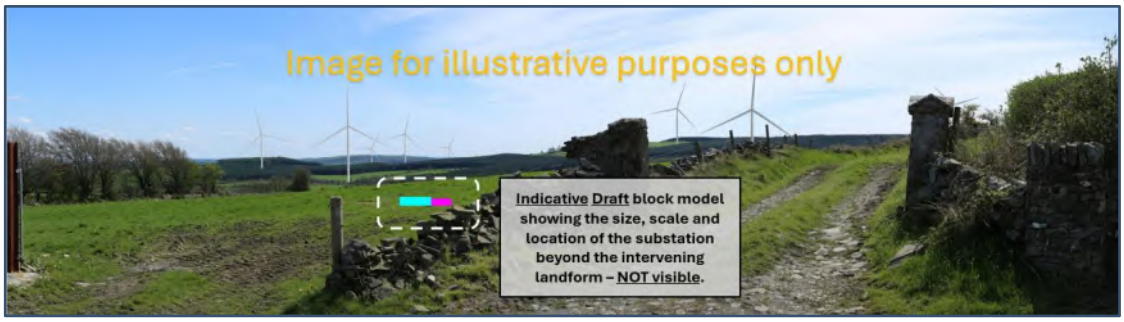


Plate 13-23 VP09 – Indicative block model showing the approximate size, scale and location of the Proposed 110kV Substation. The block model is for illustrative purposes only and does not represent the Proposed 110kV Substation design or appearance. The image demonstrates that the substation will be fully screened from view by the intervening landform



Plate 13-24 VP08 – Indicative block model showing the approximate size, scale and location of the Proposed 110kV Substation. The block model is for illustrative purposes only and does not represent the Proposed 110kV Substation design or appearance. The image demonstrates that the substation will be fully screened from view by the intervening landform.

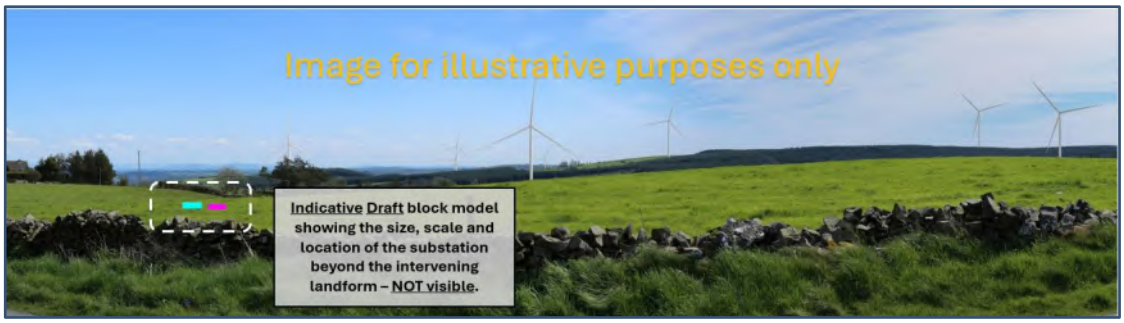


Plate 13-25 VP07 – Indicative block model showing the approximate size, scale and location of the Proposed 110kV Substation. The block model is for illustrative purposes only and does not represent the Proposed 110kV Substation design or appearance. The image demonstrates that the substation will be fully screened from view by the intervening landform.



Plate 13-26 VP05 – Indicative block model showing the approximate size, scale and location of the Proposed 110kV Substation. The block model is for illustrative purposes only and does not represent the Proposed 110kV Substation design or appearance. The image demonstrates that the substation will be fully screened from view by the intervening landform.

13.7.3.2.6 Cumulative Visual Effects

There are many potential scenarios and interactions where cumulative visual effects may occur. These scenarios can include interactions between the Proposed Project, other energy developments (wind farms or grid infrastructure), as well as other man-made landscape features (quarries, transport networks, overhead telecommunication lines). Guidance for assessment of cumulative effects of onshore wind farms (SNH, 2012) & (Nature Scot, 2021) states the following:

> *"At every stage in the process the focus should be on the key cumulative effects which are likely to influence decision making, rather than an assessment of every potential cumulative effect."*
>
> *"The level of information generated can distract attention from the most significant cumulative effects which are likely to influence the consenting decision. Assessments should therefore focus on the most significant cumulative effects and conclude with a clear assessment of those which are likely to influence decision making."*

Following this guidance, a primary focus is given to the cumulative effects likely to occur and likely to be experienced by visual receptors as a result of other wind turbines identified in the LVIA Study Area. The assessment of cumulative visual effects is proportionate; the focus is on the extent to which the Proposed Project contributes to cumulative effects on the particular receptors under assessment. Cumulative visual effects were assessed as part of all Photomontage Assessment Tables found in *Appendix 13-3*. Whether a visual effect is deemed to be positive, negative, or neutral, this involves a degree of subjectivity.

The discussion of cumulative visual effects in this section uses the following terminology:

- **'In combination'** where the Proposed Turbines will be seen with other turbines from a particular vantage point representing visual receptors.

- **In combination 'simultaneous'** visual effects occur where the Proposed Turbines are seen with other cumulative turbines within the same or similar field of view.
- **In combination 'successional'** visual effects occur where the Proposed Turbines are seen with other turbines from the same viewpoint but in an alternative field of view where the receptor will need to turn to face a different direction to experience cumulative effects.
- **'Sequential'** visual effects occur when the observer has to move to another viewpoint to see different developments (i.e. in a journey scenario)

There are several other existing, permitted, and proposed wind farms within 20km from the Proposed Turbines as identified previously in Section 13.7 Cumulative Context. These are located:

- **Within 5km** – proposed Gathabawn Wind Farm, existing Lisdowney Wind Farm
- **To the North-East** – proposed Seskin Renewables Wind Farm, permitted Ballynalacken Wind Farm
- **To the East and South-East in Tipperary Lowlands –** existing Bruckana Wind Farm, existing Lisheen I, II, and III Wind Farms, and proposed Littleton Wind Farm
- **To the South, on Slieverdagh Hills** – existing An Cnoc Wind Farm, existing Ballincurry Wind Farm, existing Ballybay Wind Farm, existing Gurteen Lower Single Wind Turbine, existing Foyle Wind Farm, permitted Foyle Wind Farm Extension, permitted Briskalagh Wind Farm, and permitted Farranrory Wind Farm.

A Cumulative ZTV in Section 13.7 demonstrates widespread areas of combined theoretical visibility of the Proposed Turbines and other cumulative wind energy developments across the LVIA Study Area. Areas where theoretical visibility is limited to cumulative turbines only are primarily located to the south, within the Slieveardagh Hills, and to the north-east, across the elevated terrain of Knockmannon Hill, Capponellan Hill and the Castlecomer Plateau. The nature of cumulative interactions, as experienced by visual receptors, is discussed in *Appendix 13-3*, with a summary provided below.

- **Elevated vantage points to the north-east of the Proposed Wind Farm (VP02 Aharney, VP10 Finnan and VP17 Ballynalacken)**
  - Visual receptors at these locations, including receptors at designated scenic views and local road users, would experience simultaneous in combination cumulative visual effects with the existing Lisdowney Wind Farm, with a degree of visual separation between developments at VP10 and VP17. At VP10 and VP17, the existing Foyle, Ballybay and An Cnoc Wind Farms and Gurteen Lower Single Wind Turbine, would also be visible in the distant background, although barely discernible to the naked eye.
  - In an uncertain future receiving environment, the Proposed Turbines would be visible in combination with the proposed Gathabawn, Littleton and Seskin Renewables Wind Farms at VP10 and VP17. At VP02, the proposed Gathabawn turbines would be visible within the same landscape view, whilst the proposed Seskin Renewables turbines may be visible in the opposing direction, giving rise to in combination successional cumulative visual effects. Only one of the Proposed Turbines would be clearly visible at VP02, limiting its contribution to cumulative visual effects from this location. Visual receptors at these locations, would experience simultaneous in combination cumulative visual effects with the permitted Briskalagh, Foyle Extension and Farranrory Wind Farms, as seen in VP10 and VP17, although these would be barely discernible to the naked eye due to their set-back distance.
  - The Proposed Turbines would add to the overall extent of wind energy development visible at the viewpoints discussed above (VP10 and VP17), with the large-scale and expansive nature of the receiving landscape capable of effectively accommodating these cumulative wind energy developments.
- **Residential receptors and designated Scenic View 14 to the north of the Proposed Wind Farm (VP06, VP07, VP08 and VP09)**

- Visual receptors, including residential receptors, local road users, recreational receptors, and receptors at the designated scenic view would experience in combination successional cumulative visual effects, as the Proposed Turbines would be visible in opposing directions to other wind energy developments, including the existing Lisdowney, Bruckana and Lisheen Wind Farms.
- In an uncertain future receiving environment, visual receptors at these locations would experience in combination successional cumulative visual effects, as the Proposed Turbines would be visible in an opposing direction to the proposed Gathabawn Wind Farm (at VP06, VP07, VP08, and VP09). At VP07 and VP08, the blades of the permitted Briskalagh turbines would be visible within the same field of view as the Proposed Turbines, although barely discernible due to distance and intervening vegetation.

Receptors south of the Proposed Turbines (VP11)

- Visual receptors, including residential receptors, would experience in combination successional cumulative visual effects, as the Proposed Turbines would be visible to the north, whilst the existing Ballybay turbines would be visible in the opposing direction to the south.

Recreational receptors to the north of the Proposed Turbines (VP05, and VP19)

- Visual receptors along the Gathabawn Loops, Cullahill Loops, and the North Kilkenny Cycle Route, as well as local road users, would experience simultaneous in combination cumulative visual effects as the Proposed Turbines would be seen within the same landscape view with the existing Foyle Wind Farm (as seen in VP19). Visual receptors along the Gathabawn and Cullahill Loops would also experience in combination successional cumulative visual effects with the existing Lisdowney turbines.
- In an uncertain future receiving environment, these visual receptors would experience cumulative visual effects as the Proposed Turbines would be seen in combination with the proposed Gathabawn turbines within the same landscape view. Simultaneous in combination cumulative visual effects may also occur with the permitted Foyle Extension Wind Farm and some of the permitted Briskalagh turbines.

Visual receptors to the south-west along Tipperary Scenic Route 31 (VP20 Mellisson)

- In an uncertain future receiving environment, visual receptors, including users of the designated scenic route and regional road users, would experience simultaneous in combination cumulative visual effects as the Proposed Turbines would be seen within the same landscape view as the proposed Gathabawn turbines in the distant background of the view.

Residential receptors, road users and recreational receptors in the surrounding landscape (VP01, VP03, VP04, VP15 and VP16)

- At VP04 and VP15, visual receptors, including residential receptors and receptors in a recreational capacity at Nore Valley, would experience cumulative visual effects as the Proposed Turbines would be visible in combination with the existing Lisdowney Wind Farm. In combination successional views may also occur in the wider landscape with the existing Ballybay Wind Farm and the existing Foyle Wind Farm seen in the opposing direction of the Proposed Turbines (e.g. at VP04).
- In an uncertain future receiving environment at VP01, VP03, VP04, VP15 and VP16, visual receptors would experience cumulative visual effects as the Proposed Turbines would be seen in combination with either the proposed Gathabawn turbines or Littleton turbines, though there is a degree of visual separation from some of these viewpoints.

Clomantagh Hillfort (VP18)

- Recreational visual receptors (which are limited to the landowner as this is private land) at this elevated vantage point would experience simultaneous

in combination cumulative visual effects, as the Proposed Turbines would be visible in combination with the existing Lisdowney Wind Farm.

- In an uncertain future receiving environment, visual receptors (which are limited to the landowner as this is private land) at this location would see the proposed Gathabawn turbines, the proposed Seskin Renewables Wind Farm and permitted Ballynalacken Wind Farm within the same landscape view as the Proposed Turbines.

In addition to the simultaneous and successional cumulative visual effects identified above, sequential cumulative visual effects may occur where receptors travel through the wider LVIA Study Area and experience different wind energy developments along the road network. These effects will vary depending on the direction of travel, local topography, and the extent of roadside vegetation.

Further detail on the cumulative visual effects from each photomontage viewpoint is detailed in *Appendix 13-3*. In a general sense, the wider LVIA Study Area comprises a large-scale, robust landscape characterised by hills, ridgelines and foothills, which have the capacity to accommodate multiple wind energy developments. Whilst the Proposed Turbines will contribute to cumulative visual effects experienced by receptors within the LVIA Study Area, the scale and character of the receiving landscape, visual separation between developments and screening provided by intervening landform and vegetation limit the extent of these effects. On balance, the Proposed Turbines are not considered to give rise to unacceptable cumulative visual effects.

13.7.4 Decommissioning Phase Effects

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

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

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

Removal of the Proposed Turbines and ancillary infrastructure (except the Proposed 110kV Substation) from the Proposed Wind Farm site during decommissioning will result in 'Short-Term', 'Slight', 'Negative' visual effects.

13.8 Conclusion

This chapter reports the Landscape and Visual Impact Assessment (LVIA) of the Proposed Project, focusing on the likely significant effects on landscape and visual amenity within a 20km LVIA Study Area. Although all elements of the Proposed Project are assessed, the Chapter focusses upon the Proposed Turbines, as they are deemed to be the primary essential aspects of the proposal under assessment from a landscape and visual perspective. The assessments were informed by site visits, photomontages, ZTV mapping, a Route Screening Analysis, and an impact assessment methodology which follows best practice guidance for LVIA of wind farms.

The Proposed Wind Farm is located within a marginal, working upland landscape comprising agricultural pasture and extensive tracts of commercial coniferous forestry. There is little to no

recreational value to the Proposed Wind Farm site itself, and it is a landscape which has undergone a degree of human modification due to current land uses such as commercial forestry and agricultural fields. It is a large scale and sparsely settled landscape of marginal upland foothills within the Slieveardagh Hills, which is considered a robust landscape capable of effectively accommodating wind energy development of this scale.

ZTV mapping, photomontage visualisations and site visits determined that visibility of the Proposed Turbines is substantially restricted in parts of the surrounding landscape due to intervening landform and vegetation. The Route Screening Analysis determined that views from much of the surrounding road network are screened or partially screened by mature roadside vegetation. More open views of the Proposed Turbines are available from certain elevated vantage points and locations in close proximity to the Proposed Wind Farm, while visibility from the wider LVIA Study Area is generally more restricted due to intervening landform and vegetation. In terms of location, spatial extent, spacing and layout, the siting and design of the Proposed Wind Farm adheres to the guidance for the siting of wind farms in Transitional Marginal Landscape Types, whilst also adhering to the minimum set-back distance of 500 metres from residential dwellings and provides for the recommended four-times-tip-height set-back from third-party residential properties, as set out in the Guidelines (DoEHLG, 2006) and Draft Guidelines (DoHPLG, 2019) respectively.

Landscape and visual considerations were a key component of the iterative design process, with several design iterations undertaken to mitigate potential landscape and visual effects on surrounding sensitive receptors. This included the omission of all turbines from the western slopes of Clomantagh Hill, providing greater physical and visual separation from Clomantagh Hillfort and surrounding residential receptors, as well as reducing the horizontal extent of the Proposed Turbines in views from the north and south. Turbines were also omitted from lower slopes and potentially viable lands to the south-east of the Proposed Wind Farm site, where they would have resulted in greater visual prominence from surrounding residential receptors. The final turbine layout has been designed to form a visually coherent arrangement, with the Proposed Turbines located across the undulating upland terrain and set back from surrounding sensitive receptors. The Proposed Turbines are also located to the south of designated Kilkenny Scenic View 14, in the opposing direction to the principal scenic views to the north and east, ensuring that the Proposed Turbines will not obstruct the designated scenic views. The Proposed 110kV Substation has also been sited south of the northern ridgeline, within an area enclosed and visually contained by the surrounding landform.

The overall landscape value of the Proposed Wind Farm site is deemed to be ‘Medium’, with an overall ‘Low’ sensitivity to wind energy development, and the residual effects upon the landscape of the Proposed Wind Farm site itself are deemed to be ‘Moderate’.

The Proposed Wind Farm site itself is located within KK-LCA-A (N) – Slieveardagh Hills (North), a large-scale and robust landscape comprising marginal upland foothills, agricultural pasture and commercial forestry, which has the capability to effectively accommodate the Proposed Turbines as well as other wind energy developments. The LVIA determined a ‘Moderate’ residual effect on this LCA. No significant landscape effects were deemed to arise on any of the designated LCAs assessed within the LCA Study Area.

The Proposed Turbines are located on the eastern foothills of Spa Hill and Clomantagh Hill, which comprise elevated landscape features and ridgelines identified as sensitive landscape features in the KCCDP. Whilst the sensitivity associated with these ridgelines is recognised, the receiving landscape is predominantly a modified working landscape comprising agricultural pasture and commercial forestry, and does not comprise any distinctive or exceptional landscape qualities of national or international renown. As discussed throughout this LVIA, marginal upland foothills and ridgelines are generally considered suitable landscapes for accommodating wind energy development due to their large scale, sparse settlement patterns and set-back from surrounding receptors. The Proposed Turbines are strategically sited on the eastern slopes of Spa Hill and Clomantagh Hill, with the intervening ridgelines providing visual containment and restricting visibility for receptors immediately west. Whilst the

Proposed Turbines will introduce new vertical features into the landscape, the large scale and robust nature of the receiving landscape is considered capable of accommodating such change.

There are 10 No. existing, 3 No. proposed and 4 No. permitted wind farms within 20km of the Proposed Turbines, with the greatest potential for cumulative landscape effects occurring within the Slieveardagh Hills landscape. The existing Lisdowney Wind Farm is located within the same LCA as the Proposed Turbines, while other existing and permitted wind energy developments are located within the wider Slieveardagh Hills landscape. This is a large scale and robust landscape, mostly comprising ridgelines, hills and foothill landscape types, capable of effectively accommodating multiple wind energy developments.

The assessment of visual effects was primarily informed by photomontage visualisations, a Route Screening Analysis, and observations recorded during site visits. Photomontages were used to assess the visual effects of the Proposed Project from 20 No. viewpoints within the LVIA Study Area. The assessment concluded that no 'Profound' or 'Very Significant' effects occurred at any of the 20 photomontage viewpoints. Residual effects of 'Significant' occurred at one viewpoint location (VP18), given the proximity of the viewpoint to the Proposed Turbines (approximately 790m). All other viewpoints were assessed as 'Moderate' (5), 'Slight' (11) and 'Not Significant' (3). The significant visual effect at VP18 occurs at Clomantagh Hillfort, where there is no public access, and as such, views from this location would only be experienced by a limited number of people permitted access to the site (i.e. the landowner and those granted access). These significant effects are localised and are not representative of visual effects throughout the wider LVIA Study Area. Residual visual effects on residential receptors range from 'Imperceptible' to 'Moderate' and are not considered significant.

Cumulative visual effects have the greatest potential to arise with other existing, permitted and proposed wind energy developments. The most notable combined views of the Proposed Turbines and cumulative turbines occur from elevated vantage points within the surrounding Slieveardagh Hills landscape. Cumulative visual effects will also occur from longer ranging views of the upland area from elevated vantage points throughout the wider landscape. The proposed Gathabawn, Seskin Renewables and Littleton Wind Farms may contribute to further cumulative visual effects in an uncertain future receiving environment, subject to the outcome of the planning process.

In conclusion, this LVIA determined that the Proposed Wind Farm is located within a landscape that can effectively accommodate a wind energy development of this scale, given the large scale and nature of the receiving environment, comprising marginal upland foothills, agricultural pasture and commercial forestry, and the mitigation measures incorporated into the design of the Proposed Project. Whilst 'Significant' residual landscape and visual effects were identified in relation to Clomantagh Hillfort, these effects are localised and do not involve any direct alteration to the physical fabric of the hillfort. The assessments have determined that the landscape of the Proposed Wind Farm site is capable of effectively accommodating the Proposed Project.