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Volume 2:

18

Landscape and Visual

18.0 Landscape and Visual

18.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) presents an assessment of likely significant effects from the proposed development in relation to landscape and visual impacts during the construction and operational phases.

This chapter sets out the methodology followed, describes the baseline environment and summarises the main characteristics of the proposed development which are of relevance to Landscape and Visual Impact Assessment. The likely significant effects of the proposed development on Landscape character and Visual receptors (people) are described. Mitigation and monitoring measures that are embedded in the design of the proposed development are presented. The residual effects of the proposed development are described. The cumulative effects of the proposed development are described. The chapter then provides a reference section.

Although closely linked, landscape and visual impacts are assessed separately. Collectively, these impacts are referred to throughout as LVIA.

Landscape Impact Assessment (LIA) relates to changes and/or additions to the characteristics and defining elements of areas of landscape, including their visual attributes. This may also include effects on the specific landscape features or identified character areas.

Visual Impact Assessment (VIA) relates to assessing effects on views and visual amenity experienced by people who are resident at particular locations or engaged in particular activities, which influences their sensitivity to visual change. This includes daytime and nighttime visual amenity.

Cumulative landscape and visual impact assessment is concerned with additional changes to the landscape or visual amenity caused by the proposed development in conjunction with other permitted and proposed developments. Such projects will include other permitted or proposed notable scale projects within the relevant study area.

18.2 Methodology

The methodology employed in this LVIA is informed by the following Guidelines and Guidance notes:

- Environmental Protection Agency (EPA) publication 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (2022)
- Landscape Institute and the Institute of Environmental Management and Assessment, Guidelines of Landscape and Visual Impact Assessment: Third Edition (2013) (referenced hereafter as GLVIA3).

It should be noted that GLVIA3 is exclusively used by LVIA specialists in Ireland as the overarching best practice guidance for LVIA for all forms of development in lieu of any equivalent adopted guidelines in the Irish Context.

The Landscape and Visual Impact Assessment (LVIA) methodology consists of a desktop baseline study followed by fieldwork and then assessment aided by maps and verifiable photomontage images.

The desktop study comprised of the following:

- Review of a Zone of Theoretical Visibility (ZTV) map, which indicates areas from which the development is potentially visible in relation to terrain within the study area.
- Review of relevant County Development Plans, particularly with regard to sensitive landscape and scenic view/route designations.
- Review of map resources to identify settlements and transport routes within the study area that may be potential visual receptors.
- Online review of tourism, recreational and heritage features within the study area that may be potential visual receptors.
- Selection of potential Viewshed Reference Points (VRPs) from key visual receptors to be investigated during fieldwork for actual visibility and sensitivity.
- Production of wireframe images of the development at each potential viewpoint (illustrating the WTG in a bare-ground context) to aid fieldwork / viewpoint selection.

Fieldwork comprised of the following:

- Examination of the landscape character of the proposed development area and its immediate surrounds as well as the wider study area.
- Investigation of potential viewpoint locations identified at the desk study stage and selection / rejection of each.
- Selection of other relevant viewpoints that may not have been apparent from the desk study (local monuments, walkways etc.).
- Capture of high-quality base photography in clear viewing conditions from which to prepare photomontages of the proposed development during both daytime.
- Viewpoints were presented to the relevant local authorities and no objections to the viewpoints proposed were received.

Assessment comprised of the following:

- Assessment of landscape sensitivity.
- Assessment of the magnitude of landscape impacts.
- Assessment of the likely significance of landscape effects.
- Assessment of visual receptor sensitivity.
- Assessment of the magnitude of visual impact upon receptors at representative viewpoint locations (supported by verifiable photomontages).

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- Assessment of the likely significance of visual effects.
- Assessment of cumulative landscape and visual effects.

The sensitivity of Landscape and Visual receptors is derived from combining susceptibility to change and professional judgement of the value of the receptor to determine overall sensitivity. Similarly, the magnitude of impacts is derived from combining professional judgements in respect of the size, scale and nature of the impact with considerations of duration and reversibility. Sensitivity and magnitude judgements are then considered together using the significance matrix to determine the overall significance of effect (see **Figure 18.1**). Although the terminology differs slightly to that used in the EPA EIAR guidance, it is consistent with LVIA best practice and GLVIA3, which requires that those effects deemed to be significant in EIA terms are clearly set out. In this case negative effects of Major or greater are deemed significant in EIA terms. It should also be noted that the EPA guidance allows for topic specific guidance to be used where it exists.

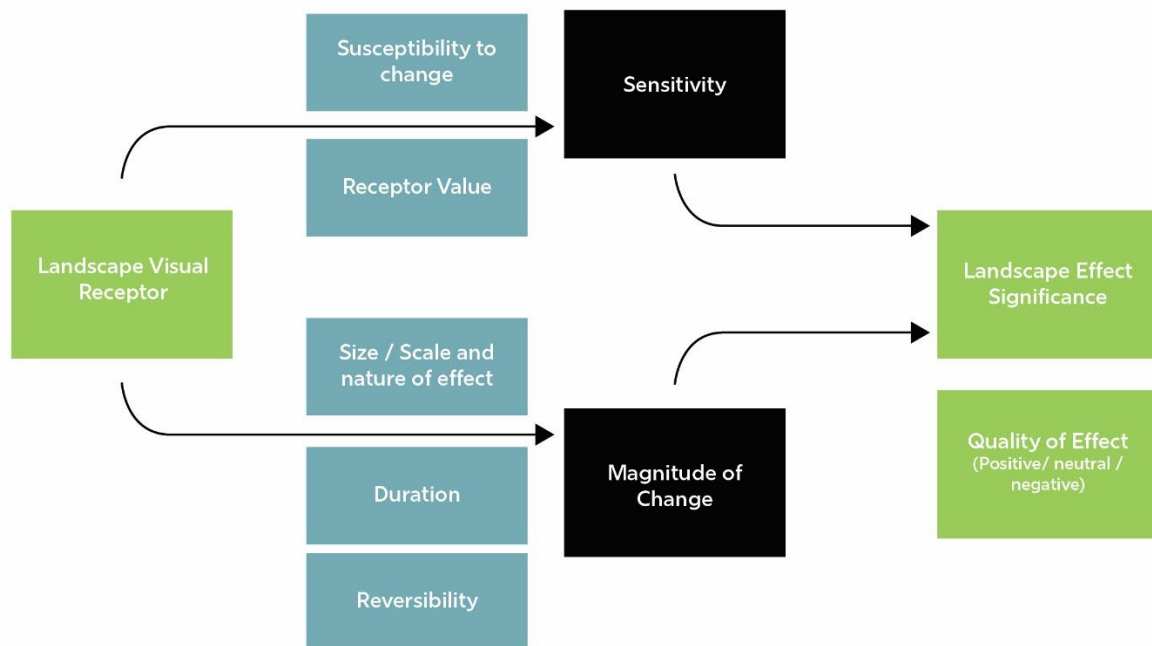


Figure 18.1: Overview of Landscape and Visual Assessment Process derived from GLVIA3.

18.2.1 Study Area

A 2.5 km radius study area has been determined based on site visits, mapping analysis, and local environmental features. Initial assessments show that the presence of intervening vegetation, topography, and surrounding structures significantly restricts visibility, confining potential landscape and visual impacts primarily within 2.5 km of the site. Beyond this, the proposed development would be largely obscured, with any residual visibility and highly diminished.

This approach reflects findings from similar developments, which indicate limited discernibility and no significant landscape impact beyond approximately 2.5 km. Additionally, this limited scope aligns with the proportional impact assessment approach endorsed by the Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3), emphasizing that study areas should reflect the scale and visibility of the development while remaining focused on areas of potential impact.

The choice of a 2.5 km study area balances thoroughness with relevance, ensuring that all significant receptors within this range are assessed, while unnecessary assessments of visually unaffected areas are avoided. This approach aligns with standard practices for renewable projects in Ireland, Northern Ireland, and Great Britain, where study areas are similarly tailored to the landscape context and scale of the project.

18.2.2 Methodology for Assessment of Effects

The assessment of landscape effects is separate to that of visual effects and thus, the criteria also differ. Nonetheless, both forms of assessment rely on the weighing of receptor sensitivity against impact magnitude. Although not identical to the sample criteria used in the EPA guidelines (2022), the criteria contained in **Tables 18.2, 18.3 and 18.4** is consistent with LVIA best practice in the UK and Ireland and corresponds closely with the EPA criteria. As identified in the Guidelines for Landscape and Visual Impact Assessment (2013), the critical factor is to clearly identify which judgements equate to significant effects in EIA terms.

18.2.2.1 Landscape Sensitivity

The sensitivity of the landscape to change relates to susceptibility and value, determining the degree to which a particular landscape receptor (Landscape Character Area (LCA) or feature) can accommodate changes or new features without unacceptable detrimental effects to its essential characteristics.

Landscape Susceptibility relates to the ability of the receptor to accommodate change and this relates to the scale and nature of the type of development in question rather than simply intrinsic susceptibility. Factors to be considered include the naturalistic qualities of the receptor and its quality / condition (pristine or degraded) as well as cultural and social associations to the landscape. Also considered are perceptual aspects such as remoteness / tranquilly, degree of enclosure / openness, movement, and aesthetic qualities.

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Higher Susceptibility Criteria	Lower Susceptibility Criteria
Perceptual Qualities: The = landscape has strong scenic qualities associated with naturalness and tranquilly.	The landscape has a high degree of contemporary development associated with settlement, industry, and primary production.
Condition: The landscape has a high degree of integrity and utility indicating care and management.	The landscape is degraded with unutilised or waste areas apparent and with little sign of care or management.
Scale / Simplicity: The landscape is intricate and complex where large scale development could generate scale conflict	The landscape is of a broad scale with simple legible elements that can accommodate large development without a sense of scale conflict..
Intensity and scale of existing development: The landscape has high levels of existing development of considerable scale and with associated movement.	The landscape has low levels of existing development and that which exists is of small scale and static in nature.
Openness / enclosure: The landscape is strongly enclosed with limited viewsheds that can be readily influenced by new and large-scale development.	The landscape is broad and open with expansive viewsheds that can readily accommodate new and large-scale development.

Table18.1: Landscape Susceptibility

18.2.2.2 Landscape Value

Landscape Value relates to societal recognition of the receptor at a designated or non-designated level. It often relates to the rarity or representativeness of the receptor as well as its quality and condition. Recreational, conservation, tourism and scenic value are also key considerations. Higher order value is likely to be associated with landscapes that are designated for protection at a national or international level, whereas lower order value might be associated with rural or coastal productivity.

Higher Value Criteria	Lower Value Criteria
Designation: The landscape is protected by National / international level policy in relation to its natural and scenic beauty.	The landscape does not have a formal designation of protection or cautious management.
Rarity: The landscape is rare or unique at a national or regional level.	The landscape type is commonly found throughout the local, regional, and national context.
Cultural Associations: The landscape is strongly associated with cultural traditions, historic events or myth and legend.	The landscape is not recognised as being associated with cultural traditions, historic events or myth and legend.
Scenic / Perceptual: The landscape has a high degree of scenic value associated with naturalistic, conservation value and tranquillity.	The landscape has no recognised scenic value and is associated with settlement, cultivation development and production.
Tourism, recreation, and amenity: The landscape is strongly associated with tourism recreation and amenity and attracts high number of visitors.	The landscape is not associated with tourism recreation and amenity and is not recognised as a draw for visitors.

Table18.2: Landscape Value

Taking consideration of susceptibility and value attributes, overall Landscape Sensitivity is classified using the following criteria (**Table 18.3**).

Sensitivity	Definition
Very High	Areas where the landscape exhibits very strong, positive character with valued elements, features and characteristics that combine to give an experience of unity, richness and harmony. The landscape character is such that its capacity to accommodate change is very low. These attributes are recognised in policy or designations as being of national or international value and the principal management objective for the area is protection of the existing character from change.
High	Areas where the landscape exhibits strong, positive character with valued elements, features and characteristics. The landscape character is such that it has limited/low capacity to accommodate change. These attributes are recognised in policy or designations as being of national, regional or county value and the principal management objective for the area is the conservation of existing character.
Medium	Areas where the landscape has certain valued elements, features or characteristics but where the character is mixed or not particularly strong, or has evidence of alteration, degradation or erosion of elements and characteristics. The landscape character is such that there is some capacity for change. These areas may be recognised in policy at local or county level and the principal management objective may be to consolidate landscape character or facilitate appropriate, necessary change.
Low	Areas where the landscape has few valued elements, features or characteristics and the character is weak. The character is such that it has capacity for change; where development would make no significant change or would make a positive change. Such landscapes are generally unrecognised in policy and the principal management objective may be to facilitate change through development, repair, restoration or enhancement.
Negligible	Areas where the landscape exhibits negative character, with no valued elements, features or characteristics. The character is such that its capacity to accommodate change is high; where development would make no significant change or would make a positive change. Such landscapes include derelict industrial lands, as well as sites or areas that are designated for a particular type of development. The principal management objective for the area is to facilitate change in the landscape through development, repair or restoration.

Table 18.3: Landscape Sensitivity

18.2.2.3 Landscape Impact Magnitude

The magnitude of a predicted landscape impact is a product of the size and scale of change as a result of the proposed development in the context of the receptor, as well as the geographical extent across which it is likely to be experienced and to a lesser extent the duration and reversibility of the effect.

The size and scale of the impact is the degree of change that will occur as a result of existing elements being lost and/or new ones introduced and is a measure of the degree to which these changes alter the prevailing character of the landscape receptor. Higher order judgements are likely to result from dramatic change to a substantial proportion of the receptor in question. However, this could be in the context of large-scale change at a single landscape space that would be experienced as a smaller effect for the broader landscape character area it is contained within.

The Geographical Extent of the impact is not how large or distinctive the physical development is, but the extent across which its impacts are experienced. Using the same example above, distinct change to a small parklet might be experienced as very localised impacts with a confined geographical extent. The loss or introduction of other elements might have effects experienced across a number landscape character areas i.e. with a large geographical extent.

Taking consideration of the size and scale of the impact and its geographical extent, overall magnitude of landscape impacts is determined on the basis of the criteria contained in **Table 18.4**.

Magnitude of Impact	Definition
Very high	Change that is large in extent, resulting in the loss of or major alteration to key elements, features or characteristics of the landscape, and/or introduction of large elements considered totally uncharacteristic in the context. Such development results in fundamental change in the character of the landscape.
High	Change that is moderate to large in extent, resulting in major alteration to key elements, features or characteristics of the landscape, and/or introduction of large elements considered uncharacteristic in the context. Such development results in change to the character of the landscape.
Medium	Change that is moderate in extent, resulting in partial loss or alteration to key elements, features or characteristics of the landscape, and/or introduction of elements that may be prominent but not necessarily substantially uncharacteristic in the context. Such development results in change to the character of the landscape.
Low	Change that is moderate or limited in scale, resulting in minor alteration to key elements, features or characteristics of the landscape, and/or introduction of elements that are not uncharacteristic in the context. Such development results in minor change to the character of the landscape.
Negligible	Change that is limited in scale, resulting in no alteration to key elements features or characteristics of the landscape, and/or introduction of elements that are characteristic of the context. Such development results in no change to the landscape character.

Tabel 18.4: Magnitude of Landscape Impacts

18.2.2.4 Visual Receptor Sensitivity

Unlike landscape sensitivity, the sensitivity of visual receptors has an anthropocentric basis. It considers factors such as the perceived quality and values associated with the view, the landscape context of the viewer, the likely activity they are engaged in and whether this heightens their awareness of the surrounding landscape.

A list of the factors considered by the assessor in estimating the level of sensitivity for a particular visual receptor is outlined below and used in **Table 18.5** to establish visual receptor sensitivity at each representative viewpoint:

Susceptibility of Receptors

In accordance with the Institute of Environmental Management and Assessment (“IEMA”) Guidelines for Landscape and Visual Assessment (3rd edition 2013) visual receptors most susceptible to changes in views and visual amenity are:

- *“Residents at home.*
- *People, whether residents or visitors, who are engaged in outdoor recreation, including use of public rights of way, whose attention or interest is likely to be focussed on the landscape and on particular views.*
- *Visitors to heritage assets, or to other attractions, where views of the surroundings are an important contributor to the experience.*
- *Communities where views contribute to the landscape setting enjoyed by residents in the area; and*
- *Travellers on road, rail, or other transport routes where such travel involves recognised scenic routes and awareness of views is likely to be heightened”.*

Visual receptors that are less susceptible to changes in views and visual amenity include.

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

Values Associated with Views

1. **Recognised scenic value of the view** (County Development Plan designations, guidebooks, touring maps, postcards etc). These represent a consensus in terms of which scenic views and routes within an area are strongly valued by the population because in the case of County Developments Plans, for example, a public consultation process is required.

2. **Views from within highly sensitive landscape areas.** Again, highly sensitive landscape designations are usually part of a county's Landscape Character Assessment, which is then incorporated within the County Development Plan and is therefore subject to the public consultation process. Viewers i.e. visual receptors, within such areas are likely to be highly attuned to the landscape around them.
3. **Primary views from nearby dwellings.** This category is reserved for those instances in which the design of dwellings or housing estates, has been influenced by the desire to take in a particular view. This might involve the use of a slope or the specific orientation of houses in the locality.
4. **Intensity of use, popularity.** This relates to the number of viewers likely to experience a view on a regular basis and whether this is significant at county or regional scale
5. **Provision of elevated panoramic views.** This relates to the extent of the view on offer and the tendency for receptors to become more attuned to the surrounding landscape at locations that afford broad vistas.
6. **Sense of remoteness and/or tranquillity.** Receptors taking in a remote and tranquil scene, which is likely to be fairly static, are likely to be more aware of / affected by changes in the view than those taking in the view of a busy street scene, for example.
7. **Degree of perceived naturalness.** Where a view is valued for the sense of naturalness of the surrounding landscape it is likely to be highly sensitive to visual intrusion by distinctly manmade features.
8. **Presence of striking or noteworthy features.** A view might be strongly valued because it contains a distinctive and memorable landscape feature such as a promontory headland, lough or castle.
9. **Historical, cultural and / or spiritual significance.** Such attributes may be evident or sensed by receptors at certain viewing locations, which may attract visitors for the purposes of contemplation or reflection heightening the sense of their surroundings.
10. **Rarity or uniqueness of the view.** This might include the noteworthy representativeness of a certain landscape type and considers whether the receptor could take in similar views anywhere in the broader region or the country.
11. **Integrity of the landscape character.** This looks at the condition and intactness of the landscape in view and whether the landscape pattern is a regular one of few strongly related components or an irregular one containing a variety of disparate components.
12. **Sense of place.** This considers whether there is special sense of wholeness and harmony at the viewing location; and
13. **Sense of awe.** This considers whether the view inspires an overwhelming sense of scale or the power of nature.

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Those locations which are deemed to satisfy many of the above criteria are likely to be of higher sensitivity. No relative importance is inferred by the order of listing. Overall sensitivity may be a result of a number of these factors or, alternatively, a strong association with one or two in particular. Visual receptor sensitivity is assessed on the bases of the criteria set out in **Table 18.5**.

Visual Receptor Sensitivity	Viewer Susceptibility	View Value
Very High	Viewers who have sought out a particular view due to its remarkable scenic qualities and who are likely engaged in active or passive recreation. Minimal tolerance for change.	Unique views of remarkable scenic quality involving distinct, naturalistic or historic features that are designated for protection and/or obtained from landscapes protected by policy at a national or international level. Minimal tolerance for change.
High	Viewers travelling on designated scenic routes or engaged on active or passive recreation where views of the surrounding landscape are important to the experience and residents of areas where views contribute to the landscape setting. Low tolerance for change	Views of considerable scenic quality involving distinct, naturalistic or historic features that are designated for protection and/or obtained from landscapes protected by policy at a Regional / County level. Low tolerance for change.
Medium	Viewers travelling on routes that have some scenic quality or sense of tranquillity. Recreationalists engaged in activities where scenic amenity is appreciated, but not key to the experience and residents of areas where views do not contribute strongly to the landscape setting. Medium tolerance for change.	Views with some scenic quality that might involve notable, naturalistic or historic features that are not designated for protection and are not obtained from landscapes identified for protection. Medium tolerance for change.
Low	Viewers engaged in recreation that does not involve an appreciation of scenic amenity, those travelling on busy roads with little scenic quality within the surrounding landscape setting. People at their place of work where visual setting is not key to the working experience. High tolerance for change.	Views without recognised scenic quality that are typical in nature and without naturalistic and historic features present, but likely with utilitarian features present. High tolerance for change.
Negligible	Viewers engaged in activities or present at locations where visual amenity is not a consideration or where the visual setting is a detraction. High tolerance for change	Views without any amenity value where the visual setting may be degraded. High tolerance for change

Table 18.5: Visual Receptor Sensitivity

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18.2.2.5 Visual Impact Magnitude

The criteria used to assess visual impact magnitude are included in **Table 18.6** below.

Magnitude of Impact	Definition
Very high	The proposal obstructs or intrudes into a large proportion or critical part of the available vista and is without question the most noticeable element. An extensive degree of visual change will occur within the scene completely altering its character, composition and associated visual amenity
High	The proposal obstructs or intrudes into a significant proportion or important part of the available vista and is one of the most noticeable elements. A considerable degree of visual change will occur within the scene substantially altering its character, composition and associated visual amenity
Medium	The proposal represents a moderate intrusion into the available vista and is a readily noticeable element. A noticeable degree of visual change will occur within the scene perceptibly altering its character, composition and associated visual amenity
Low	The proposal intrudes to a minor extent into the available vista and may not be noticed by a casual observer and/or the proposal would not have a marked effect on the visual amenity of the scene
Negligible	The proposal would be barely discernible within the available vista and/or it would not influence the visual amenity of the scene

Tabel 18.6: Magnitude of Visual Impact

18.2.2.6 Landscape and Visual Significance of Effect

The significance of landscape and visual effect is based on a balance between the sensitivity of the landscape and visual receptor and the magnitude of the impact. The significance of landscape and visual effects is informed by the following matrix (**Table 18.7**), but ultimately determined by professional judgement:

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Magnitude of Landscape / Visual Change	Sensitivity of Landscape / View				
	Very High	High	Medium	Low	Negligible
Very high	Profound	Profound - Very Significant	Very Significant - Significant	Moderate	Slight
High	Profound - very significant	Very Significant	Significant	Moderate - Slight	Slight - Not significant
Medium	Very Significant - Significant	Significant	Moderate	Slight	Not significant
Low	Moderate	Moderate - Slight	Slight	Not significant	Imperceptible
Negligible	Slight	Slight - Not Significant	Not significant	Imperceptible	Imperceptible

Table 18.7: Landscape and Visual Impact Significance Matrix¹.

Note: that the shaded cells in Table 18.7 ('Major' and above) are considered to equate with 'significant' effects in EIA terms where that impact is also deemed to be of a 'Negative' quality. Unshaded cells (Major-moderate and below) are not deemed to be significant effects in EIA terms.

¹ The matrix (Table 18.7) is only a guide to the classification of impact significance. The assessor also uses professional judgement informed by their expertise, experience and common sense to arrive at a classification that is reasonable and justifiable. In the EPA guidelines the chart above is accompanied by a footnote that states: "The depiction of significance classifications is indicative and should not be relied on as being definitive. It is provided for general guidance purposes" (EPA guidelines Section 3, page 53). For example, according to the EPA chart a change of high magnitude affecting a receptor of medium sensitivity could be classified as either 'significant' or 'moderate'. That judgement must be made by the assessor.

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Significance of Effect	Landscape	Visual
Profound	There are notable changes in landscape characteristics over an extensive area or a very intensive change over a more limited area.	The view is entirely altered, obscured or affected.
Major	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the landscape. There are notable changes in landscape characteristics over a substantial area or an intensive change over a more limited area.	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the visual environment. The proposal affects a large proportion of the overall visual composition, or views are so affected that they form a new element in the physical landscape.
Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends. There are minor changes over some of the area or moderate changes in a localised area.	An effect that alters the character of the visual environment in a manner that is consistent with existing and emerging trends. The proposal affects an appreciable segment of the overall visual composition, or there is an intrusion in the foreground of a view.
Slight	An effect which causes noticeable changes in the character of the landscape without affecting its sensitivities. There are minor changes over a small proportion of the area or moderate changes in a localised area or changes that are reparable over time.	An effect which causes noticeable changes in the character of the visual environment without affecting its sensitivities. The affected view forms only a small element in the overall visual composition or changes the view in a marginal manner.
Imperceptible	An effect capable of measurement but without noticeable consequences. There are no noticeable changes to landscape context, character or features.	An effect capable of measurement but without noticeable consequences. Although the development may be visible, it would be difficult to discern resulting in minimal change to views.

Table 18.8: Indicative significance of effect criteria descriptions.

18.2.2.7 Representative Viewpoint Selection

The selection of viewpoints for this visual assessment was informed by thorough desktop analysis and field studies, ensuring a comprehensive representation of the visual impact across the receiving environment. A total of 8 No. viewpoints have been selected for detailed assessment, with each viewpoint backed by verified photomontages. These viewpoints are specifically chosen to represent key landscape features, character areas, and groups of visual receptors within the vicinity of the proposed development.

All viewpoints are situated in publicly accessible areas, representing views from main roads, pedestrian zones, and notable viewing locations near the site. This strategic selection highlights views that are likely to be relevant for visual receptors in various contexts, including local residents, road users, and recreational visitors.

The visual impact assessment, which should be read alongside the baseline photographs and verified photomontages (available in **Volume 3: Appendix 18.1**).

18.2.2.8 Quality and Timescale of Effects

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

Landscape and Visual effects are also categorised according to their duration:

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

The duration of effect is not used to increase or reduce the significance of effect judgement, but as a supplementary factor to be considered i.e. a significant effect might be considered more acceptable if its duration is temporary rather than permanent.

18.2.2.9 Assessment of Cumulative Effects

The planned, existing and/or approved projects selected through the screening exercise as potentially relevant to the assessment of impacts to landscape and visual are presented in **Table 18.9**.

The cumulative construction assessment focuses on projects scheduled to build concurrently with the proposed development in 2025/2026, excluding projects completed before this period. For cumulative operational impacts, the assessment considers the total effects of projects operating simultaneously with the proposed development.

The CEA methodology consists of three stages:

Long List of Projects: Initially, a broad list of “other existing and/or approved projects” was compiled, focusing on projects that could impact environmentally sensitive areas or require significant natural resources.

Screening: This list was then screened by EIA Specialists to identify projects with the potential for significant cumulative effects, based on factors like location, scale, and available data. Projects unlikely to contribute to cumulative impacts were screened out.

On-site Projects and Projects within a 2.5 km Radius

Projects within this category were assessed for potential cumulative landscape and visual impacts due to their proximity to the proposed development. These on-site and nearby projects generally involve similar types of development with a focus on renewable energy and industrial land use. Given their relevance and visibility within a 2.5 km radius, these projects were screened in for cumulative landscape and visual impact assessment.

Projects within 2.5-7.5 km Radius and Beyond

Projects located within a 2.5-7.5 km radius, as well as those beyond 7.5 km, were excluded from cumulative consideration. Due to their greater distance, these projects are not visible in combination with the proposed development, and their location and scale reduce the likelihood of significant cumulative impacts on landscape character or visual receptors. Therefore, cumulative landscape and visual impacts were not deemed likely for projects beyond the 2.5 km radius.

Assessment of Selected Projects: Projects deemed relevant were carried forward for detailed assessment, with findings included in the main body of the EIAR chapters.

This structured approach allows for a focused analysis of cumulative impacts, as detailed in **Volume 2: Chapter 21 (Cumulative Impacts)**.

No.	Project Name	Planning Ref.	Project Description	Status	Timeframe
1	Acorn Recycling Workshop and Truck Washout	Tipperary Co. Co. Reg. Ref. 2360281	Workshop Building , Truck Washout Building , commercial yard area and all associated siteworks.	Permitted and under construction	Permission granted on 01 November 2023. Expiry date November 2028.
2	Irish Bioeconomy Foundation Research and Development Unit	Tipperary Co. Co. Reg. Ref. 211171	Change of use of the former Lisheen Mine maintenance depot to an agri-food sector Research and Development Unit for light industrial use with ancillary office space.	Permitted	Permission granted on 16 November 2021. Expiry date November 2026.
3	Glanbia Biorefinery (1)	Tipperary Co. Co. Reg. Ref. 18601296	A 10-year planning permission for a biorefinery facility.	Permitted	Permission granted on 17 June 2019. Expiry date June 2029.
4	Glanbia Biorefinery (2) (Modifications to Biorefinery permitted under Application Reg. Ref. 18601296)	Tipperary Co. Co. Reg. Ref. 20129	A 10-year planning permission for modifications to Condition No. 1 of previously granted planning permission Ref. No. 18/601296. The modifications comprise an outfall drain and associated pumping station.	Permitted	Permission granted on 27 June 2020. Expiry date June 2029 (in accordance with Condition No. 2).

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No.	Project Name	Planning Ref.	Project Description	Status	Timeframe
6	Revive Environmental	Tipperary Co. Co. Reg. Ref. 21709	Permission for a light industrial building consisting of a mechanical assembly workshop including an administration block and all associated site works.	Permitted and under construction	Permission granted on 13 August 2021. Expiry date August 2026.

Table 18.9: Projects ‘Screened In for Cumulative Effects Assessment.

A key consideration in the Guidance is the nature of cumulative visibility as described below.

‘**Combined visibility** occurs where the observer is able to see two or more developments from one viewpoint. Combined visibility may either be in combination (where several wind farms are within the observer’s arc of vision at the same time) or in succession (where the observer has to turn to see the various wind farms).

Sequential effects occur when the observer has to move to another viewpoint to see different developments. The occurrence of sequential effects may range from frequently sequential (the features appear regularly and with short time lapses between, depending on speed of travel and distance between the viewpoints) to occasionally sequential (long time lapses between appearances, because the observer is moving very slowly and / or there are large distances between the viewpoints.)’

The GLVIA (2013) defines cumulative landscape and visual effects as those that ‘result from additional changes to the landscape and visual amenity caused by the proposal in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future.’

In this instance cumulative effects are assessed in relation to other permitted or planned developments on the basis that, where relevant, any existing developments will present in the baseline of the main assessment.

The principal focus of the cumulative assessment of projects will be the relationship between the proposed development and other planned or permitted development at the Fomer Lisheen Mine Site.

18.2.2.10 Data Collection and Collation

Data used in the LVIA consists of written character assessment and guidance documents, online resources and technical data including:

- Relevant County Development Plans and associated County Landscape Character Assessments:
 - Tipperary County Development Plan 2022-2028 (including Appendix 3 - Landscape Character Assessment and Schedule of Views and Routes).
 - KilkennyCounty Development Plan 2021-2027.

- Online review of tourism, heritage and amenity features
- OSI mapping and aerial imagery including 'Google Earth' and 'Google Street View'.
- High resolution photography at selected viewpoints
- Geo-referenced 3D models of the various development elements used in the preparation of photomontages.

Relevant Guidance and Policy

Relevant Guidance and Policy considered in this section starts with overarching framework documents and thereafter, the finer grain of regional and county level guidance and policy documents that are relevant to this LVIA.

Tipperary County Development Plan 2022-2028

The Tipperary County Development Plan 2022-2028 identifies four landscape archetypes, including the "Plains," where the proposed development site is located. The Plains are described as "working landscapes" supporting settlements, agriculture, and historic sites. The Plains category is subdivided into two types: **A1: Lowland Pasture and Arable** and **A2: Peatlands and Wet Mixed Farmland**. Specifically, the proposal site falls within the **Templemore Plains** of Lowland Pasture and Arable, a gently undulating area with a low sensitivity to change, rated **Class 1**.

Relevant Policies and Objectives:

Section 11.7 – Landscape Policies

- **Policy 11-16:** Supports new developments that integrate with the landscape character, sensitivity, and values as designated in the Landscape Character Assessment and Schedule of Views and Scenic Routes. Developments should avoid adverse impacts on visual amenities.
- **Policy 11-17:** Ensures the protection of visual amenity, landscape quality, and character of primary and secondary amenity areas. Key guidelines include avoiding visually prominent locations, integrating structures with the landscape, and protecting existing features like trees and hedgerows.

Landscape Character Area (LCA) 5: Templemore Plains

- **Sensitivity and Capacity:** Templemore Plains are designated as high capacity with low sensitivity, meaning they can generally absorb change without significant detriment, provided development aligns with landscape character and management principles.
- **Principles for Landscape Management:** Emphasize maintaining vernacular field patterns, managing ecological areas like raised bogs, retaining hedgerow systems, and ensuring sensitive siting and design of new buildings.

Section 13 – Built Heritage Policies

- **Policy 13-6:** Addresses landscapes of archaeological significance and, when necessary, requires impact assessments for developments impacting such landscapes.
- **Objective 13-D:** Proposes an audit of Tipperary's archaeological landscapes over the plan's duration, with consideration of regions extending into adjacent counties.

Kilkenny County Development Plan 2021-2027

The Kilkenny County Development Plan 2021-2027 includes policies that protect and manage landscape character, with particular emphasis on preserving scenic views and integrating developments sustainably. Protected View V14 highlights the views north and east from the Johnstown/Gattabaun Road (LP1805), considered of special amenity value. Below are relevant policies and objectives from Chapter 9 of the plan that guide landscape management and development within such views and areas:

Policies

- **Landscape Management:** Preserve and enhance places with scenic value (listed in Appendix H, Figure 9.2) and manage landscape character in line with the Landscape Character Assessment.
- **Development in Scenic Areas:** Protect areas of high scenic and visual amenity value, including the Brandon Hill Uplands and the Nore, Barrow, and Suir River Valleys.
- **Visual Impact Assessment:** Require visual impact assessments for developments in sensitive areas like uplands and river valleys.
- **Lowland Areas:** Recognize that tall or bulky structures may have disproportionate visual effects in low-lying areas.
- **Steep or Elevated Sites:** Support developments with natural resource needs on steep or elevated sites, e.g., reservoirs or wind energy structures, with proper mitigation measures.
- **Maintaining Visual Integrity:** Focus on maintaining visual integrity in sensitive areas by ensuring that developments are appropriately sited and designed.

Objectives

- Ensure sustainable management of County Kilkenny's landscape character, conserving its scenic value and supporting well-sited development that aligns with the natural landscape.
- Developments in these areas should be carefully designed and sited to integrate seamlessly into the landscape, minimizing visual impact.

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- Ensure developments do not dominate or detract from scenic vistas, with attention to the difficulty of establishing vegetation screening in these sensitive areas.
- Discourage visually obtrusive developments in open lowland landscapes to maintain landscape character and minimize adverse visual impacts.
- Ensure that such developments minimize residual visual impacts and avoid excessive bulk or inappropriate siting that may interfere with scenic upland views or public viewpoints.
- Require applicants to demonstrate how the proposed development will integrate into the landscape and avoid disproportionate impacts on scenic quality and landscape character.

18.3 Baseline Environment

The proposed development site lies within the rehabilitated landscape of the former Lisheen Mine complex, encompassing 5.5 hectares in a predominantly rural setting in County Tipperary. The surrounding landscape is primarily agricultural, interspersed with forestry and historic peatlands previously managed by Bord na Móna. The site sits within Tipperary's designated Decarbonisation Zone, reflecting a regional shift toward sustainable and bio-based industries. The terrain is flat, with recolonised scrub and ground vegetation, along with mature hedgerows bordering the site, particularly along the western boundary.

The broader Lisheen complex has evolved to support renewable energy projects, such as the nearby Lisheen and Bruckana Wind Farms, which host several wind turbines connected to an ESB substation. Other industrial and renewable activities, like Acorn Recycling / AQS Environmental Solutions and the Irish Bioeconomy Foundation's Research and Development Unit, enhance the site's positioning as a hub for sustainable and bio-based industries.

Visual Receptors

Given the isolated and industrial character of the former Lisheen Mine site, the range of visual receptors is limited.

- **Scenic Routes and Views:** There are no designated scenic routes or views within proximity to the site, so this category is not applicable.
- **Centres of Population:** The site is remote from major population centers, with the closest village, Urlingford, located approximately 6.3 km to the northeast, and Templemore around 12.6 km to the southeast. Therefore, this category is not applicable.
- **Major Routes:** Although the R502 regional road and M8 motorway enhance site accessibility, there are no significant major routes within immediate visual range of the application site. This category is therefore not applicable.
- **Local Residential Visual Receptors:** A small number of individual rural residences are scattered within the wider area. The closest residence is located approximately 750 meters west of the site, where existing hedgerows and topographical features offer some screening. Views from these residences would primarily encompass the industrial context of the former mine site, now adapted for renewable energy and bio-based industrial uses.
- **Visual Receptors at Tourism Amenity and Heritage Features:** There are no tourism, amenity, or heritage features within the vicinity of the application site that would classify as visual receptors. This category is not applicable.

18.4 Characteristics of the Proposed Development

The proposed development by Nua Bioenergy involves the construction of a biomethane and bio-based fertiliser production facility on a 5.5-hectare brownfield site within the former Lisheen Mine complex in Killoran, Moyne, Thurles, Co. Tipperary. Key aspects relevant to the Landscape and Visual Impact Assessment (LVIA) include the facility's layout, structure heights, and surrounding landscape modifications.

The facility includes four primary digester tanks (approx. 7.6 m in height) and three secondary digester tanks (approx. 14.5 m in height). These are central to the anaerobic digestion process and are located within a containment bund approximately 3 meters below ground level to minimize visual prominence.

Additional structures include feedstock storage clamps, a biomethane upgrading plant, a biomass boiler (approx. 12.5 m in height), a Combined Heat and Power (CHP) unit, a bio-based fertiliser processing building, and an emergency flare (approx. 7.6 m in height). Most of these components are distributed across the site to facilitate safe and efficient processing.

The design incorporates a one-way vehicular circulation system, reducing potential visual clutter and improving site accessibility. The site entrance is secured with appropriate fencing, enhancing security and maintaining the visual boundary along local roads.

The development includes landscaped areas with native species, designed to support biodiversity and ecological integration. Sustainable Urban Drainage Systems (SuDS), such as bioretention swales, are proposed for managing surface water, further supporting ecological integrity.

Please refer to **Volume 2: Chapter 6** for a comprehensive Description of the Proposed Development.

18.5 Potential Effects

Landscape Sensitivity

The sensitivity of the receiving environment is classified as '**Low**'.

(Definition: "Areas where the landscape has few valued elements, features, or characteristics, and the character is weak. Such landscapes have capacity for change, where development would either have no significant impact or could even introduce positive changes. These areas are generally unrecognized in policy, with the main management objective being to facilitate development, repair, restoration, or enhancement.")

This classification considers the following main factors:

- **Site Context:** The site is an underutilised area within the Lisheen complex, previously designated for industrial use, and is suitable for development that aligns with local policy objectives for industrial rejuvenation.
- **Current Landscape Condition:** The landscape value of the proposed development site is presently low due to its past mining activity, visible remnants of industrial infrastructure, and the lack of any prominent visual or aesthetic appeal in the surrounding context.
- **Landscape Designations:** The site itself is not subject to any specific landscape or visual designations that would restrict development, nor is it part of a protected scenic or recreational landscape.
- **Surrounding Land Uses:** Adjacent land uses primarily consist of industrial and renewable energy facilities, including a nearby wind farm and other energy infrastructure, which further contribute to a low overall landscape sensitivity in the vicinity.
- **Development Policy:** As per the Tipperary County Development Plan 2022-2028, the site is located within Landscape Character Area (LCA) 5: Templemore Plains, classified as a high-capacity landscape with low sensitivity. This designation indicates that the area can generally absorb development without significant detriment, provided it aligns with management principles, which include retaining traditional field patterns, maintaining hedgerow systems, and siting new buildings sensitively.

In summary, the local environment is in transition, with policies supporting its shift from former mining lands to a sustainable industrial site with a focus on renewable energy and bioeconomy sectors. The proposed development, given its alignment with this policy, will play a key role in contributing to this positive evolution.

8.5.1 Construction Phase Landscape Effects

The Construction Phase of the proposed development includes for all works associated with the proposed development. Please refer to the **Construction Management Plan** (Ref. 2429-DOB-XX-SI-RP-C-0003) by Donnachadh O'Brien & Associates Consulting Engineers, 2024

8.5.2 Construction Phase Visual Effects

The visual effects of the construction phase for the proposed development are anticipated to be **negligible, if any**. Due to intervening vegetation around the site, much of the construction activity will be obscured, and the visual envelope will remain limited. By the end of the construction phase, while structures will be largely complete, any remaining construction-related visual elements—such as cranes, hoarding, stockpiles, and machinery movement—will be minimally visible from outside the site.

Although the photomontages were created to assess permanent visual impacts during the operational phase, they effectively illustrate the worst-case visual impacts that may occur at the latter stages of construction. At that point, the development will be near completion, with only minor visual intrusion from construction-related elements. Most of these temporary features will remain out of sight, reinforcing the overall low visual impact during construction.

8.5.3 Operational Phase Landscape Effects

The magnitude of landscape change from the proposed development is classified as **'Medium'**.

(Definition: "Change that is moderate in extent, resulting in a partial alteration of key elements or characteristics of the landscape, and/or introducing elements that may be noticeable yet not substantially out of character with the existing landscape. Such change leads to a shift in landscape character.")

The development will introduce a cluster of contemporary industrial buildings integrated within a structured landscape featuring screening vegetation. This represents a medium magnitude of change, as it will consolidate the industrial character of the Lisheen complex while enhancing its alignment with regional sustainability goals. The project is designed to harmonise with the existing landscape through structured open spaces, appropriate materials, and scaled building forms, supporting a gradual but positive shift in the area's character, in line with policy.

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8.5.4 Operational Phase Visual Effects

The operational phase visual effects for each viewpoint are summarised in the table below. Given the low sensitivity of visual receptors and limited visual envelope due to surrounding vegetation, most viewpoints experience no change, with only slight-imperceptible effects at one location. (See **Table 18.10.**)

Viewpoint	Visual Receptor Sensitivity	Predicted Effect (Pre-Mitigation)	Significance / Quality / Duration of Visual Impact
1	Low	None	No change.
2	Low	None	No change.
3	Low	None	No change.
4	Low	None	No change.
5	Low	None	No change.
6	Low	Low	Slight-imperceptible
7	Low	None	No change.
8	Low	None	No change.

Table 18.10: Operational Phase Visual Effects Summary

The predicted operational phase visual impacts are minimal, largely due to the low sensitivity of surrounding receptors and the presence of mature vegetation that limits the visibility of the site from most viewpoints. The impact at Viewpoint 6 is rated as slight-imperceptible, with other viewpoints experiencing no visual change. These effects are expected to be long-term but of low significance, reinforcing the development’s compatibility with the surrounding landscape.

18.6 Mitigation and Monitoring Measures

18.6.1 Construction Phase

There are no specific LVIA mitigation measures proposed during the construction phase for the proposed development. However, site hoarding around the Facility, which has a number of functions including safety and security, will also serve as a visual screen within the former Lisheen Mine Site (the proposed construction works will not likely be visible from surrounding public road).

18.6.2 Operational Phase

No specific LVIA mitigation measures are proposed for the operational phase. However, it is important to note that the design of the proposed development incorporates proactive visual considerations. The LVIA team has ensured a recessive colour scheme, particularly for the shed sheeting and structures, to reduce visual prominence and integrate the development harmoniously into the surrounding landscape.

18.7 Residual Effects

18.7.1 Construction Phase Residual Effects

As there is no specific mitigation proposed in respect of the facility during the Construction Phase of the Proposed Development and thus, the residual effects remain unchanged from the likely significant effects during the construction phase. No significant effects were assessed.

18.7.2 Operational Phase Residual Effects

As there is no specific mitigation proposed in respect of the facility during the Operational Phase of the Proposed Development and thus, the residual effects remain unchanged from the likely significant effects during the operational phase. No significant effects were assessed.

18.8 Interactions

As with any development that alters the visual environment, the landscape and visual impacts of the proposed development will interact with several other environmental and social factors, including:

- **Population and Human Health:** Changes to the visual environment may influence the perception and well-being of nearby residents. However, given the low sensitivity of the receiving landscape and minimal visual intrusion, no significant impacts on population or human health are anticipated.
- **Material Assets:** The project's visual effects may intersect with local infrastructure and facilities. However, the design and siting have minimized any visual prominence, so no significant effects on material assets are expected.
- **Cultural Heritage:** The development is located within an area without significant cultural heritage designations, including architectural or archaeological heritage. Due to this and the mitigated visual presence of the project, interactions with cultural heritage are considered negligible.

In summary, while the project will result in visual and landscape changes, no significant impacts are predicted concerning these interactions.

18.9 Cumulative Effects

A long list of "other projects" which were deemed to be potentially relevant to be included in the cumulative impact assessment was compiled (refer to **Volume 2: Chapter 21** (Cumulative Impacts)). A screening exercise of the "long list" was carried out to determine whether each of those other projects have the potential to give rise to likely significant cumulative effects with the proposed development from a landscape and visual perspective.

Many of the other projects were screened out for a few reasons including their location, scale, and nature of the project. Those projects which were “screened in” were carried forward for assessment.

Projects within a 2.5 km radius within this category were assessed for potential cumulative landscape and visual impacts due to their proximity to the proposed development. The results of the assessment are that no cumulative effects will arise. Please refer to baseline photographs and verified photomontages (available in **Volume 3: Appendix 18.1**).

The assessment concluded that there are no likely significant direct or indirect cumulative effects on landscape and visual predicted during the construction, operation, or decommissioning phases of the proposed development.

18.10 Summary of Effects

The landscape and visual effects of the proposed development are anticipated to be minimal due to the site’s location within a low-sensitivity landscape and the design considerations integrated from the outset. During the construction phase, visual impacts are considered negligible, as intervening vegetation will limit visibility, and construction-related elements will have only a temporary, minor effect on the surrounding area.

For the operational phase, the visual impacts are largely imperceptible from most viewpoints, with only one viewpoint experiencing a slight-imperceptible change. The use of a recessive colour scheme further minimizes visual prominence, ensuring that the development integrates effectively into the landscape. Overall, the development aligns well with the local landscape character, resulting in low and generally positive visual and landscape effects.

18.11 Difficulties Encountered

No difficulties were encountered during the compilation of this chapter.

18.12 References

- Environmental Protection Agency (EPA). *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*. 2022.
- Landscape Institute and Institute of Environmental Management and Assessment (IEMA). *Guidelines for Landscape and Visual Impact Assessment, Third Edition* (GLVIA3). 2013.
- Tipperary County Council. *Tipperary County Development Plan 2022-2028*, including Appendix 3 - Landscape Character Assessment and Schedule of Views and Routes.
- Kilkenny County Council. *Kilkenny County Development Plan 2021-2027*, with Appendix H: Landscape Character Assessment and Schedule of Scenic Routes.

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- Ordnance Survey Ireland (OSI). Mapping and aerial imagery, including Google Earth and Google Street View for baseline analysis.
- Google Earth and Google Street View. Online imagery for site visits and baseline assessment.
- The Heritage Council. *National Landscape Strategy for Ireland 2015-2025*.
- Environmental Protection Agency (EPA). *Guidelines for Environmental Impact Statements* and methodologies for cumulative effects assessment.