

# KWF Grid Connection EIA 2023 Report

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## Volume C2: EIA 2023 Main Report

### Chapter 14: Landscape

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Figures and mapping referenced in this topic chapter can be found at the end of the chapter.

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Appendix 14.1	Evaluation of Potential Impacts to Landscape

Appendices referenced in this topic chapter can be found at the end of the chapter.

## Glossary of Terms

<u>Term</u>	<u>Definition</u>
<b>KWF Grid Connection (the subject development)</b>	Underground cabling, additional plant and apparatus in the existing Woodhouse Substation, the construction a new link road, the widening of an existing forestry road and the use of the existing entrance and windfarm road network at Woodhouse Windfarm.
<b>Authorised Knocknamona Windfarm</b>	Not Constructed - Knocknamona Windfarm authorised in 2016 (ABP-PL 93.244006); Amendments to Knocknamona Windfarm to provide for larger turbines authorised in September 2022 (ABP-309412-21) and Junction & Bend Widening Works to facilitate turbine component access through the windfarm site entrance at Knocknaglogh Lower authorised in December 2022 (ABP-314219-22)
<b>Whole Project</b>	KWF Grid Connection with Authorised Knocknamona Windfarm
<b>Sensitive Aspect</b>	Any sensitive receptor in the local environment which could be impacted by the project.

## List of Abbreviations

<u>Abbreviation</u>	<u>Full Term</u>
<b>LVIA</b>	Landscape and Visual Impact Assessment
<b>LCA</b>	Landscape Character Area
<b>IEMA</b>	Institute of Environmental Management and Assessment
<b>GLVIA</b>	Guidelines for Landscape and Visual Impact Assessment
<b>KWF</b>	Knocknamona Windfarm

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# 14 Environmental Factor: Landscape

## 14.1 Introduction to the Landscape Chapter

### 14.1.1 What is Landscape?

Landscape is an area perceived by people, whose character is the result of the action and interaction of natural and/or human factors<sup>1</sup>. Landscape is about the relationship between people and place, it provides the setting for our day-to-day lives. The term does not mean just special or designated landscapes and it does not only apply to the countryside. Landscape can mean a small patch of urban wasteland as much as a mountain range, as much as an expansive lowland plain. It results from the way that different components of our environment - both natural (the influence of geology, soils, climate, flora and fauna) and cultural (the historical and current impact of land use, settlement, enclosure and other human interventions are perceived by us. People’s perceptions turn land into the concept of landscape.

### 14.1.2 Overview of Landscape in the Local Environment

The landform of the study area is that of the gently rolling plateau ridge of the Drum Hills at its north-western end as this upland spine begins to descend in a northerly direction towards the Blackwater Valley. The predominant landcover is commercial conifer plantation, at various rotation stages, giving way to pastoral farming within a matrix of broadleaf hedgerows on the slopes below the forested ridge. The existing Woodhouse Wind Farm lies adjacent to the west of the proposed development and the associated existing Woodhouse Substation forms part of the proposed KWF Grid Connection site. The study area is sparsely populated with occasional farmsteads to the north and west of the site.

**Relevant Figure (at the end of this chapter)**

Figure 14.1: Location of KWF Grid Connection in relation to Landscape

### 14.1.3 SENSITIVE ASPECTS of Landscape

Any receptor in the local environment which could be affected by a development is a Sensitive Aspect.

#### 14.1.3.1 Sensitive Aspects included for detailed evaluation in this Topic Chapter

The following Sensitive Aspects are **included for detailed evaluation in this topic chapter** as it is likely or there is potential, for these Sensitive Aspects to be affected by the KWF Grid Connection:

Sensitive Aspect No. 1	<b>Landscape Character</b>	Section 14.2
Sensitive Aspect No. 2	<b>Visual Amenity</b>	Section 14.3

**The above listed Sensitive Aspects are evaluated in Section 14.2 and Section 14.3 of this Chapter.**

#### 14.1.3.2 Sensitive Aspects excluded from further evaluation

**No Sensitive Aspects were excluded from this topic chapter.**

#### 14.1.4 The Author of this Landscape Chapter

This report was written by Richard Barker, Master Landscape Architecture and corporate member of the Irish Landscape Institute, of Macro Works consultancy. Richard’s experience includes the landscape and visual impact assessment of more than 90 wind energy development proposals including 5 no. Strategic Infrastructure Development (SID) projects, numerous linear infrastructure projects including road schemes, electricity transmission lines (overhead and underground) as well as water and sewage pipelines. Macro Works specialise in visual impact analysis and visual impact graphics.

#### 14.1.5 Sources of EIAR 2023 Information

The following sources of information were used to gather information on the baseline environment and evaluate impacts, including cumulative impacts.

**Table 14-1: Sources of EIAR 2023 Information**

Type	Information Source
Consultation	No feedback to February 2022 Consultation was received from Fáilte Ireland. See Chapter 3: The Scoping Consultations, and Appendices for further details
Legislation, Regulation & Policy	<ul style="list-style-type: none"> <li>• National Landscape Strategy for Ireland (2015-2025)</li> <li>• Regional Spatial &amp; Economic Strategy for the Southern Region January 2020 Volume 1: Section 5: Environment</li> <li>• Waterford County Development Plan 2022-2028</li> </ul>
Guidelines	<ul style="list-style-type: none"> <li>• Institute of Environmental Management and Assessment (IEMA) Landscape Institute (UK)</li> <li>• Guidelines for Landscape and Visual Impact Assessment’ (GLVIA, 2013, 3rd Edition).</li> </ul>
Desktop	<ul style="list-style-type: none"> <li>• Online research and review of this EIA Report Chapter 6: Population &amp; Human Health to establish key tourist and amenity features, including waymarked walking and cycling routes in the study area</li> <li>• Waterford County Development Plan –2022-2028</li> <li>• In co-ordination with and by review of the other EIA Report Chapters as follows: <ul style="list-style-type: none"> <li>• Chapter 7: Biodiversity</li> <li>• Chapter 8: Land &amp; Soils</li> </ul> </li> <li>• <u>Review of Authorised Knocknamona Windfarm Planning Docs</u> <ul style="list-style-type: none"> <li>• Knocknamona Windfarm Revised EIS 2015</li> <li>• Amendment to Knocknamona Windfarm – Larger Turbines Revised EIAR 2021</li> <li>• Junction &amp; Bend Widening Works Screening for EIA 2022</li> </ul> </li> </ul> <p>Available in Volume F: Reference Documents</p>
Fieldwork	<ul style="list-style-type: none"> <li>• Site Visit</li> <li>• Baseline photography</li> </ul>

### 14.1.6 Methodology used to Describe the Environment and to Evaluate Impacts

The criteria used by Macro Works for landscape and visual appraisals are derived from the IEMA and GLVIA Guidelines listed in Table 14-1 above. Whilst this is specific to the landscape and visual appraisal, the significance judgements correspond closely with the EPA significance criteria with the main point of note being that 'Substantial' impacts are equivalent to the EPA definition for 'Significant' impacts.

#### 14.1.6.1 Sensitivity of Landscape Character & Magnitude of Landscape Character Impacts

The sensitivity of the landscape to change is the degree to which a particular landscape receptor (Landscape Character Area (LCA) or feature) can accommodate changes or new elements without unacceptable detrimental effects to its essential characteristics. Landscape sensitivity is classified using the criteria in Table 14-2.

**Table 14-2: Landscape Sensitivity**

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

The magnitude of a predicted landscape impact is a product of the scale, extent or degree of change that is likely to be experienced as a result of the development. The magnitude takes into account whether there is a direct physical impact resulting from the loss of landscape components and/or a change that extends beyond the proposal site boundary that may have an effect on the landscape character of the area. The magnitude of landscape impact is classified using the criteria in Table 14-3.

**Table 14-3: Magnitude of Landscape Impacts**

<b>Magnitude of Landscape Impact</b>	<b>Description</b>
<b>Very High</b>	Permanent change that would be large in extent and scale with the loss of critically important landscape elements and features, that may also involve the introduction of new uncharacteristic elements or features that contribute to an overall change of the landscape in terms of character, value and quality.
<b>High</b>	Permanent or long-term change that would be more limited in extent and scale with the loss of important landscape elements and features, that may also involve the introduction of new uncharacteristic elements or features that contribute to an overall change of the landscape in terms of character, value and quality.
<b>Medium</b>	Permanent or long-term changes that are modest in extent and scale involving the loss of landscape characteristics or elements that may also involve the introduction of new uncharacteristic elements or features that would lead to changes in landscape character, and quality. Alternatively, Medium term, short term or temporary changes of greater extent and scale.
<b>Low</b>	Permanent or long-term Changes affecting small areas of landscape character and quality, together with the loss of some less characteristic landscape elements or the addition of new features or elements. Alternatively, short term or temporary changes of greater scale and extent.
<b>Negligible</b>	Permanent changes affecting small or very restricted areas of landscape character. This may include the limited loss of some elements or the addition of some new features or elements that are characteristic of the existing landscape or are hardly perceivable. Alternatively, temporary changes of slightly greater extent and scale

**14.1.6.2 Sensitivity of Visual Amenity & Magnitude of Visual Amenity Impacts**

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.

In accordance with the IEMA Guidelines for Landscape and Visual Assessment, receptor type was used to estimate the level of sensitivity for a particular visual receptor, as outlined in Table 14.4.

**Table 14-4: IEMA Criteria for Evaluating the Sensitivity of Visual Receptors**

<b>Visual receptors most susceptible to changes in views and visual amenity</b>	<b>Visual receptors that are less susceptible to changes in views and visual amenity</b>
Residents at home;	People engaged in outdoor sport or recreation, which does not involve or depend upon appreciation of views of the landscape; and
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;	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

<b>Visual receptors most susceptible to changes in views and visual amenity</b>	<b>Visual receptors that are less susceptible to changes in views and visual amenity</b>
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	

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The magnitude of visual impacts relates to the likely scale and nature of visual change in relation to the representative receptor location. It considers whether the proposal will be a visual obstruction (blocking a view) or just an intrusion on the view and how much of the view is affected. It is also a measure of whether the visual change is temporary or permanent and if such change conflicts or complements other elements within the scene in terms of tone, texture, scale and function for example. The textual criteria for determining visual impact magnitude are set out in Table 14.5.

**Table 14-5: Magnitude of Visual Impacts**

<b>Criteria</b>	<b>Description</b>
<b>Very High</b>	The proposed development is a permanent visual obstruction or intrusion into a large proportion or critical part of the available vista and is without question the most noticeable element. A high degree of visual clutter or disharmony is also generated, strongly reducing the visual amenity of the scene
<b>High</b>	The proposed development is a permanent or long term visual obstruction or intrusion into a significant proportion or important part of the available vista and is one of the most noticeable elements. A considerable degree of visual clutter or disharmony is also likely to be generated, appreciably reducing the visual amenity of the scene.
<b>Medium</b>	The proposed development represents a permanent or long-term intrusion into a moderate proportion of the available vista. It is a readily noticeable element and/or it may generate a degree of visual clutter or disharmony, thereby reducing the visual amenity of the scene. Alternatively, it may represent a balance of higher and lower order judgements in relation to visual presence and visual amenity or a shorter duration.
<b>Low</b>	The proposed development represents a permanent or long-term intrusion into a minor proportion of 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. Alternatively, it may represent short term or temporary visual intrusion of a greater extent.
<b>Negligible</b>	The proposal would be barely discernible within the available vista and/or it would not detract from, and may even enhance, the visual amenity of the scene. Alternatively, it may represent short term or temporary visual intrusion of a slightly greater extent.

#### **14.1.6.3 Significance of Landscape Character and Visual Amenity Impacts**

The significance of both landscape and visual impacts is based on a balance between the sensitivity of the landscape / visual receptor and the magnitude of the impact. The significance of landscape impacts is arrived at using the matrix in Table 14-6.



**Table 14-6: Landscape and Visual Significance Matrix**

	<b>Sensitivity of Receptor</b>				
<b>Scale/Magnitude</b>	<b>Very High</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>	<b>Negligible</b>
<b>Very High</b>	Profound	Profound-substantial	Substantial	Moderate	Minor
<b>High</b>	Profound-substantial	Substantial	Substantial-moderate	Moderate-slight	Slight-imperceptible
<b>Medium</b>	Substantial	Substantial-moderate	Moderate	Slight	Imperceptible
<b>Low</b>	Moderate	Moderate-slight	Slight	Slight-imperceptible	Imperceptible
<b>Negligible</b>	Slight	Slight-imperceptible	Imperceptible	Imperceptible	Imperceptible

*Note: The significance matrix provides an indicative framework from which the significance of impact is derived. The significance judgement is ultimately determined by the assessor using professional judgement. Due to nuances within the constituent sensitivity and magnitude judgements, this may be up to one category higher or lower than indicated by the matrix. Judgements indicated in orange are considered to be 'significant impacts' in EIA terms (EPA definitions).*

#### **14.1.7 Certainty and Sufficiency of Information**

Desktop studies and field work have been undertaken to establish baseline conditions and evaluate impacts and this has been in accordance with relevant guidelines for landscape and visual impact assessment (GLVIA, 2013), which is widely recognised as the most applicable guidance in the UK and Ireland. Fieldwork was undertaken across the entire development site and throughout the publicly accessible portions of the study area where broad views across the receiving landscape could be readily obtained. Assessment criteria for Landscape Character and Visual Amenity impacts are universal and typical of those used by practitioners throughout Ireland and the UK. Thus, the evaluation is considered to be rigorous and robust with regard to its sufficiency and certainty.

In this instance the only uncertainty with regard to baseline information is whether the CORINE land cover maps that were used to generate the 'Sensitive Area' designations in the Waterford CDP remain relevant potentially 15+ years later. Fieldwork suggests that sensitive land cover is less prevalent in this commercial forestry / pastoral farmland setting than it might previously have been and that any patterns of potentially sensitive land cover (such as woodland vegetation) do not coincide with the 'Sensitive Areas' indicated on the Council's Landscape and Seascape Character Assessment 2022-2028 map. Otherwise, it is considered that fieldwork was sufficient to understand the nature of the baseline landscape character.

## 14.2 Sensitive Aspect No.1: Landscape Character

This Section 14.2 provides a description of the baseline environment and an evaluation of the likely impacts of KWF Grid Connection, both alone and cumulatively, on **Landscape Character**.

### 14.2.1 Description of the BASELINE ENVIRONMENT for Landscape Character

This Section 14.2.1 comprises the identification of the Study Area for direct or indirect effects and for cumulative effects, and a description of the context, character, importance and sensitivity of the Landscape Character in the area. Trends or changes in the baseline environment and expected receiving environment are also identified.

#### 14.2.1.1 STUDY AREA for Landscape Character

Study areas relate to areas which could be affected by impacts from KWF Grid Connection, whether direct impacts from the KWF Grid Connection on its own or cumulative impacts from KWF Grid Connection and other projects or activities. The study areas are described in the table below and on relevant figures.

#### Relevant Figure (at the end of this chapter)

Figure 14.2.1: Study Area for Landscape Character (construction stage)

Figure 14.2.2 Study Area for Landscape Character (operational stage)

**Table 14-7: Study Area for Landscape Character**

KWF Grid Connection Study Area (direct or indirect effects)	Cumulative Study Area (cumulative effects)
<u>Study Area Extent:</u> Construction stage effects: 500m corridor from KWF Grid Connection development area. Operational stage effects: 2km radius from the additional plant in Woodhouse Substation.	<u>Study Area Extent:</u> Construction stage effects: 1km corridor from KWF Grid Connection development area. Operational stage effects: 4km radius from the additional plant in Woodhouse Substation
<u>Justification for Study Area Extent:</u> At distances greater than 500m and 2km, the prevailing landscape character will not be materially affected on the basis that the proposed development will have become a negligible component of the broader scale landscape fabric.	<u>Justification for Study Area Extent:</u> Doubling the distance for cumulative study area, identifies other elements and projects with potential to cause cumulative impacts. At distances greater than 1km and 4km from the development, the prevailing landscape character will not be materially affected on the basis that the proposed development will have become a negligible component of the broader scale landscape fabric.
<u>Relevant development stage:</u> Construction & Operational stages. <u>Justification:</u> There is potential for Impacts to occur in both stages of the project.	<u>Relevant development stage:</u> Construction & Operational stages

Decommissioning effects are similar to construction effects.	<b>Justification:</b> There is potential for cumulative Impacts to occur in both stages of the KWF Grid Connection project. Decommissioning effects are similar to construction effects.
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#### 14.2.1.2 Description of the BASELINE CONTEXT and CHARACTER of Landscape Character

The baseline context includes a description of the KWF Grid Connection Study Area and also the wider area which includes the Cumulative Study Area; Knocknamona Windfarm project area; Woodhouse Substation and Woodhouse Windfarm project areas.

##### 14.2.1.2.1 Baseline for KWF Grid Connection Study Area (Landscape Character)

KWF Grid Connection Study Area: The Landscape character of the KWF Grid Connection Study Area is upland rural in nature with forested ridges and upper slopes of the Drum Hills within the central study area giving way to sloping, rolling farmland on descending slopes. The existing Woodhouse Wind Farm also contributes to the landscape character, but without altering the salient upland rural context. The underground cabling portion of the proposed KWF Grid Connection project occurs predominantly within the forested ridge landscape and the works for the additional plant and apparatus at Woodhouse Substation occur within the uppermost band of farmland. This is a sparsely populated rural area served by minor local roads and dotted with occasional farmsteads.

The Landscape and Seascape Character Assessment contained within Waterford City & County Development Plan (WCCDP) 2022-2028 identifies that there are three condensed clusters of 'High Sensitive' areas within the 4km cumulative study area. These designations are predominantly contained within the upland forested context throughout the southerly and westerly quarters of the study area. The land surrounding these High Sensitive areas is all identified as being 'Low Sensitive'.

##### 14.2.1.2.2 Baseline for the Cumulative Study Area (Landscape Character)

Authorised (but not constructed) Knocknamona Windfarm: Within the more extensive context of the cumulative study area the landscape character remains wholly rural, but with a greater level of distinction between the northern and southern half of the study area. That is, the northern half becomes a slightly more rolling and populated foothills farming context, whilst the southern half is predominantly ridgetop forestry.

Operational Woodhouse Substation: The operational Woodhouse substation contributes a small section of intensive built infrastructure with an industrial form and function. This influences the landscape character within the immediate context of the substation (within c500m), but is well contained by local landform and is otherwise a discrete and relatively familiar form of electrical infrastructure that does not influence the overwhelmingly rural landscape setting of its wider context.

Operational Woodhouse Windfarm: The turbines of the operational Woodhouse Windfarm exert more influence on surrounding landscape character than its associated tracks, which are similar in nature to farm and forest tracks that are prevalent in this area. Although the turbines are a distinctive feature of the landscape within the cumulative study area, they are not the defining element and it remains an upland rural landscape with turbines in it rather than a 'windfarm landscape'.

##### 14.2.1.2.3 Consideration of the Passage of time

Woodhouse Windfarm and its associated infrastructure and Woodhouse Substation were constructed and

commissioned in 2015. These projects were included in the cumulative evaluations in the Knocknamona Windfarm Revised EIS 2015 and therefore it is considered that the descriptions in the Revised EIS 2015 for Knocknamona Windfarm remain relevant to the cumulative evaluations in this EIAR 2023. The Revised Knocknamona Windfarm EIS 2015; the Revised EIAR 2021 for amendments to the windfarm (which provides for larger turbines); and the Screening for EIA 2022 for Junction & Bend Widening Works were reviewed in the context of the current baseline conditions. The passage of time was considered during this review.

The Waterford City & County Development Plan (CCDP) 2022-2028 is now in force and Appendix 8 – Landscape and Seascape Character Assessment contains the CCDP landscape designations and objectives. The areas of sensitivity described above have been renamed from ‘Sensitive Area’ to ‘High Sensitive’ and have been reduced from 6 No. areas to 3 No. from the previous City & County Development Plan 2011-2017.

#### **14.2.1.3 IMPORTANCE of Landscape Character**

The upland landscape within the study area is not particularly rare or distinctive in a national or regional context. At a localised scale there are patches of designated ‘High Sensitive Area contained within the study area, but these appear to relate to landcover that may or may not still exist and may not have been particularly rare or distinctive. Locally the ‘skylines of upland areas’ are designated as Most Sensitive, but this designation appears to apply to any skyline ridge and is not based on whether it is distinctive in any way.

The tranquillity of the upland areas area contributes to the rural amenity of residents in this area. The productive forestry / agricultural land uses also contribute to the subsistence of the rural lifestyle enjoyed by the local population.

#### **14.2.1.4 SENSITIVITY of Landscape Character**

Appendix 8 - Landscape and Seascape Character Assessment of the Waterford CCDP 2022-2028 identifies seven landscape character types. In Table A8.1 and on Map A8.1 of the Assessment, Drumhills (the Whole Project site) is within Type 5. Foothill Landscapes (Drumhills 5E). Each unit of landscape character is then assigned an indicator of sensitivity, which considers the extent to which the landscape will be vulnerable to change in its character. The categories reflect the criteria of the capacity to absorb new development as well as the potential to create disproportionate visual impacts. There are 4 No. Landscape Sensitivity designations – Most; High; Low and Least Sensitive.

The cumulative study area;

- contains two areas designated as ‘High Sensitivity’ for which the classification is “Distinctive character with some capacity to absorb a limited range of appropriate new developments while sustaining its existing character” and
- the remaining area is designated as ‘Least Sensitive’ for which the classification is “Areas of existing development and infrastructure. New development reinforces existing desirable land use patterns”.

#### **14.2.1.5 TRENDS for Landscape Character in the Baseline Environment**

In recent years the strongest trend in this upland area is the emergence of wind energy developments on upper slopes and ridges along with the ancillary development of roads and electrical infrastructure. This trend is likely to continue with the constriction of the Knocknamona Windfarm. Other than wind farms, the predominant rural land use matrix of farming and forestry within the study area has not noticeably changed

in recent years and is unlikely to change markedly or rapidly in the foreseeable future.

#### **14.2.1.6 The 'Do Nothing Scenario' (the Environment if the Development is not carried out)**

If the KWF Grid Connection does not proceed, the effects on the environment will not occur, and the baseline environment will only change in line with the trends identified above.

#### **14.2.1.7 Description of the RECEIVING ENVIRONMENT for Landscape Character**

The receiving environment is the likely state of the baseline environment at the time of construction/operation/decommissioning as relevant i.e. baseline + trends.

The identified trends are occurring gradually and in a consistent manner, so it is assumed in this report that the receiving landscape will be a very similar baseline environment to that identified above, albeit with Knocknamona Windfarm making wind energy development a more characteristic feature of the overall rural landscape character.

#### **Relevant Figure (at the end of this chapter)**

Figure 14.2.1: Study Area for Landscape Character (construction stage)

Figure 14.2.2 Study Area for Landscape Character (operational stage)

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**14.2.2 EVALUATION OF IMPACTS to Landscape Character**

In this Section, the direct or indirect impacts and the cumulative impacts of KWF Grid Connection on Landscape Character are described.

**14.2.2.1 Potential Impacts Evaluated for Landscape Character**

A conceptual site model exercise was carried out to identify potential impacts through the examination of the specific pathways between the project (source) and the sensitive aspect (receptor).

The potential for impacts was **examined in the absence of mitigation measures**, and **based on the description of development, standard construction methodologies, construction activities and operational activities as described in Chapter 5: Description of the Development**.

The potential impacts which were evaluated are listed in the 1<sup>st</sup> column of the table below. As summarised in the table below, **no significant effects are likely to occur**.

**Table 14-8: Conclusion of the Evaluation of Potential Impacts to Landscape Character**

Potential Impacts which were evaluated	Relevant Stage of KWF Grid Connection	Direct/Indirect Impact of KWF Grid Connection	Cumulative Impact with Authorised Knocknamona Windfarm	Cumulative impact with Woodhouse Windfarm and Woodhouse Substation	Cumulative Whole Knocknamona Windfarm Project Impact
Alteration or division of land cover and vegetation patterns	Construction	<b>Imperceptible</b>	Slight	Slight	<b>Not Significant</b>
Intensification of built development and reduction in the integrity of rural landscape patterns	Operational	<b>Imperceptible</b>	Imperceptible	Imperceptible	<b>Not Significant</b>
Intensification of activity causing a reduction in rural tranquillity	Construction	<b>Slight</b>	Slight	Imperceptible - Slight	<b>Not Significant</b>
Intensification of activity causing a reduction in rural tranquillity	Operational	<b>Imperceptible</b>	Imperceptible	Imperceptible	<b>Not Significant</b>

In order to keep this EIA Report concise and focused on potential significant impacts, where the evaluation of potential impacts found no significant impacts from the

development, the evaluation tables are presented in the appendix to the chapter (at the end of this chapter).

Because no significant impacts to Landscape Character are likely to occur, the Impact Evaluation Tables for the potential impacts listed in the table above, are in Appendix 14.1.

**Relevant Appendix (at the end of this chapter)**

[Appendix 14.1 Evaluation of Potential Impacts to Landscape](#)

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**14.2.2.2 Summary of the Significance of the Potential Impacts to Landscape Character**

As outlined in the table above, **impacts to Landscape Character as a direct result of KWF Grid Connection will be Imperceptible**, this is due to the Medium-low sensitivity of landscape character; the once-off, very minor and temporary disruption of landscape elements which are predominantly made up of existing access tracks, with very small areas of scrubland and existing substation compound yard; the typical nature of the already modified land cover elements; the over ground effects of the cabling being reversible upon reinstatement of excavated material; the only permanent above-ground expression of the proposed development includes small scale additional electrical structures to be located within the existing Woodhouse Substation, where the intensity of built development will be marginally increased, but neither the footprint of the existing compound nor the visual envelope will be increased; the typical and established form of electrical infrastructure associated with Woodhouse Substation; the small scale of the development activity will only add marginally to the overall intensity and human activity during construction and will be very occasional during operation, all carried out within a productive rural setting.

**Cumulative impacts of KWF Grid Connection with Authorised Knocknamona Windfarm will be Slight**, this is generally due to construction of the KWF Grid Connection and the authorised Knocknamona Windfarm occurring concurrently and being of a larger scale cumulatively; the effects of the cabling being reversible upon reinstatement of excavated material; the typical nature of the already modified land cover elements within both the grid connection and windfarm sites; the very minor addition of electrical equipment to the existing Woodhouse Substation being the only permanent above-ground expression for the KWF Grid Connection; the landscape impact of Authorised Knocknamona Windfarm has already been assessed as Not Significant by An Bord Pleanála in 2016 and 2022; the small scale of KWF Grid Connection which will only add marginally to the overall construction activity in the immediate area of the Authorised Knocknamona Windfarm works; the very minor scale and low frequency of operational stage activity, **overall the Whole Project effect will not be significant.**

**When Woodhouse Windfarm and Woodhouse Substation are also taken into account**, cumulative impacts will not be greater than Slight, this is generally due to the Woodhouse Windfarm and Woodhouse substation already having been constructed and Woodhouse Windfarm and the whole Knocknamona Windfarm project operational activities are of a very low scale and intensity; the very minor addition of electrical equipment to the existing Woodhouse Substation is the only permanent above-ground expression for the KWF Grid Connection.



## 14.3 Sensitive Aspect No.2: Visual Amenity

This Section 14.3 provides a description of the baseline environment and an evaluation of the likely impacts of KWF Grid Connection, both alone and cumulatively, on **Visual Amenity**.

### 14.3.1 Description of the BASELINE ENVIRONMENT for Visual Amenity

This Section 14.3.1 comprises the identification of the Study Area for direct or indirect effects and for cumulative effects, and a description of the context, character, importance and sensitivity of the Visual Amenity in the area. Trends or changes in the baseline environment and expected receiving environment are also identified.

#### 14.3.1.1 STUDY AREA for Visual Amenity

Study areas relate to areas which could be affected by impacts from KWF Grid Connection, whether direct impacts from the KWF Grid Connection on its own or cumulative impacts from KWF Grid Connection and other projects or activities. The study areas are described in the table below and on relevant figures.

#### Relevant Figure (at the end of this chapter)

Figure 14.3.1: Study Area for Visual Amenity (construction stage)

Figure 14.3.2 Study Area for Visual Amenity (operational stage)

**Table 14-9: Study Area for Visual Amenity**

KWF Grid Connection Study Area (direct or indirect effects)	Cumulative Study Area (cumulative effects)
<p><u>Study Area Extent:</u> Construction stage effects: 500m from KWF Grid Connection. Operational stage effects: 2km radius from the additional plant in Woodhouse Substation</p>	<p><u>Study Area Extent:</u> Construction stage effects: 1km corridor from the KWF Grid Connection. Operational stage effects: 4km radius from the additional plant in Woodhouse Substation</p>
<p><u>Justification for Study Area Extent:</u> At distances greater than 500m and 2km from the KWF Grid Connection, visual amenity will not be materially affected. This is due to the increased likelihood of screening by intervening landform and vegetation or the combined ameliorating factors of diminishing 'scale in relation to distance' and 'visual absorption' into the overall landscape setting.</p>	<p><u>Justification for Study Area Extent:</u> Doubling the distance for cumulative study areas, identifies other elements and projects with potential to cause cumulative impacts. At distances greater than 1km and 4km from the development, visual amenity will not be materially affected. This is due to the increased likelihood of screening by intervening landform and vegetation or the combined ameliorating factors of diminishing 'scale in relation to distance' and 'visual absorption' into the overall landscape setting.</p>
<p><u>Relevant development stage:</u> Construction &amp; Operational stages. <u>Justification:</u> There is potential for Impacts to occur in both stages of the project.</p>	<p><u>Relevant development stage:</u> Construction &amp; Operational stages. <u>Justification:</u> There is potential for cumulative Impacts to occur in both stages of the KWF Grid Connection project.</p>

Decommissioning effects will be similar to construction effects.

Decommissioning effects will be similar to construction effects.

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#### 14.3.1.2 Description of the BASELINE CONTEXT and CHARACTER of Visual Amenity

The baseline context includes a description of the KWF Grid Connection Study Area and also the wider area which includes the Cumulative Study Area; Knocknamona Windfarm project area; Woodhouse Substation and Woodhouse Windfarm project areas.

##### 14.3.1.2.1 Baseline for KWF Grid Connection Study Area (Visual Amenity)

Visual receptors (people and groups of people) that enjoy the rural visual amenity that the study area has to offer, include local residents living in rural dwellings and farmsteads served by a network of quiet local roads, which are in turn used for both access and recreational purposes. A section of the long distant Saint Declan's Way pilgrim route passes through the western part of the study area in a north-south direction and is around 1.5km from the site at its closest point. There is also a network of forest access roads, which also appear to be used informally by hill walkers and local residents. The Sean Kelly Cycling Route – The Heritage Route, encircles the Drum Hills area with a road cycling route starting in Dungarvan and through An Rinn/Ardmore/crossing the Blackwater River/ Lismore/ Cappoquin/Villierstown/ finishing back in Dungarvan (c.100km). The nearest point is 2km to the west from the development site.

There are 1 No. scenic route designations within the study area.

##### 14.3.1.2.2 Baseline for the Cumulative Study Area (Visual Amenity)

In addition to the visual receptors described for the KWF Grid Connection Study Area above, the R671 regional road is contained within the larger cumulative study area. There is a slightly higher rural population density within the lower farmland context in the northern quarters of the study area. The main settlement is the small village of Aglish at the southwestern perimeter of the cumulative study area.

##### 14.3.1.2.3 Consideration of the Passage of time

Recent felling of forestry has been considered, where relevant, in the cumulative evaluations in this EIA.

The Knocknamona Windfarm Revised EIS 2015; the Revised EIA 2021 for amendments to the authorised windfarm (which provides for larger turbines); and the Screening for EIA 2022 for Junction & Bend Widening Works were reviewed in the context of the current baseline conditions. The passage of time was considered during this review. With the exception of the felling of some first rotation forestry, there have been no material changes in the baseline environment of the Knocknamona Windfarm area since the Revised EIS 2015 was prepared and the descriptions in the Revised EIS 2015 remain relevant to the cumulative evaluations in this EIA 2023.

The Waterford City & County Development Plan (CCDP) 2022-2028 is now in force and Appendix 8 – Landscape and Seascape Character Assessment contains the CCDP landscape designations and objectives. The areas of 'sensitivity' designated in the CCDP 2022-2028 have been renamed from 'Sensitive Area' to 'High Sensitive' and have been reduced from 6 No. areas to 3 No. from the previous City & County Development Plan 2011-2017.

#### 14.3.1.3 IMPORTANCE of Visual Amenity

The value of the views on offer from all of the receptor types relates to the pleasant rural setting with strong

landscape integrity rather than a strong sense of the naturalistic. There are occasional vast elevated views afforded from upper slopes and ridgelines where local vegetation allows. Rural visual amenity is an integral and important aspect of the lifestyle of the local community who live and work in areas such as this.

Rural visual amenity extends to recreationalists on the St Declan's Way walking trail and hikers are generally highly attuned to their landscape surroundings, which are an integral part of the experience. Road users on the R671 regional road and residents of Aglish also avail of rural visual amenity; however, views from these lower lying and busier receptor locations tend to be less extensive.

#### 14.3.1.4 SENSITIVITY of Visual Amenity

The key visual amenity sensitivity for the relevant receptors is the permanent obstruction (blocking) of open views and/or permanent visual change in the form of new or unfamiliar landscape elements that detract from scenic and rural amenity. All of the relevant receptor types are identified in the first column of Table 14.4 (in Section 14.1.6.2 above) as being amongst the 'most susceptible' to visual change. However, in accordance with GLVIA 2013 'susceptibility' must be balanced against the 'value' of the views on offer in order to determine overall sensitivity and in this case visual amenity relates to fairly typical upland views containing productive rural land uses including farming, forestry and wind farms. On balance, visual sensitivity is considered to be **Medium low**.

#### 14.3.1.5 TRENDS for Visual Amenity in the Baseline Environment

In recent years, the key contributor to visual change is the emergence of wind energy development on upper slopes and ridges of the Drum Hills (i.e. Woodhouse Windfarm), which can be seen from all of the receptor types contained within the KWF Grid Connection Study Area and the Cumulative Study Area. With the construction of the Authorised Knocknamona Wind Farm, wind energy development is likely to be more prominent and more frequently in view. First rotation forestry compartments are also beginning to be harvested along the ridge and upper slopes of the Drum Hills resulting in temporary visual impacts from harvesting operations and short to medium term loss of forest compartments.

#### 14.3.1.6 The 'Do Nothing Scenario' (the Environment if the Development is not carried out)

If the KWF Grid Connection does not proceed, the effects on the environment will not occur, and the baseline environment will only change in line with the trends identified above.

#### 14.3.1.7 Description of the RECEIVING ENVIRONMENT for Visual Amenity

The receiving environment is the likely state of the baseline environment at the time of construction/operation/decommissioning as relevant i.e. baseline + trends. It is assumed in this report that the baseline environment identified above will be the receiving environment, or that the changes in the receiving environment are happening very slowly, and that therefore no material changes to the baseline environment are expected at the time of the development.

#### **Relevant Figure (at the end of this chapter)**

Figure 14.3.1: Study Area for Visual Amenity (construction stage)

Figure 14.3.2: Study Area for Visual Amenity (operational stage)

**14.3.2 EVALUATION OF IMPACTS to Visual Amenity**

In this Section, the direct or indirect impacts and the cumulative impacts of KWF Grid Connection on Visual Amenity are described.

**14.3.2.1 Potential Impacts Evaluated for Visual Amenity**

A conceptual site model exercise was carried out to identify potential impacts through the examination of the specific pathways between the project (source) and the sensitive aspect (receptor).

The potential for impacts was **examined in the absence of mitigation measures**, and **based on the description of development, standard construction methodologies, construction activities and operational activities as described in Chapter 5: Description of the Development**.

The potential impacts which were evaluated are listed in the 1<sup>st</sup> column of the table below. As summarised in the table below, **no significant effects are likely to occur**.

**Table 14-10: Conclusion of the Evaluation of Potential Impacts to Visual Amenity**

Potential Impacts which were evaluated	Relevant Stage of KWF Grid Connection	Direct/Indirect Impact of KWF Grid Connection	Cumulative Impact with Authorised Knocknamona Windfarm	Cumulative impact with Woodhouse Windfarm and Woodhouse Substation	Cumulative Whole Knocknamona Windfarm Project Impact
Intensification of activity causing visual disharmony, clutter or complexity	Construction	<b>Slight</b>	Slight	Slight	<b>Slight</b>
Addition of new features or loss of existing features causing visual disharmony, clutter or complexity	Operational	<b>Imperceptible</b>	Imperceptible	Imperceptible	<b>Imperceptible</b>
Intensification of activity causing visual disharmony, clutter or complexity	Operational	<b>Imperceptible</b>	Imperceptible	Imperceptible	<b>Imperceptible</b>

In order to keep this EIA Report concise and focused on potential significant impacts, where the evaluation of potential impacts found no significant impacts from the

development, the evaluation tables are presented in the appendix to the chapter – found at the end of the chapter. Because no significant impacts to Visual Amenity are likely to occur, the Impact Evaluation Tables for the potential impacts listed in the table above are in Appendix 14.1.

**Relevant Appendix (at the end of this chapter)**

Appendix 14.1 Evaluation of Potential Impacts to Landscape

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**14.3.2.2 Summary of the Significance of the Potential Impacts to Visual Amenity**

As outlined in the table above, **impacts to Visual Amenity as a direct result of KWF Grid Connection will be Imperceptible to Slight**, in general this is due to the Medium-low sensitivity of the landscape within the site and surrounding study area; the temporary nature of construction related activities, which are of a small scale and contained within baseline setting of a productive rural landscape of familiar forestry and farming and windfarm activities. The construction works within the existing Woodhouse substation will be well screened by a combination of terrain, vegetation and the existing substation facility. The permanent structures are of a small scale and are almost identical in nature to existing structures within the Woodhouse Substation. They will also be positioned below an existing steep embankment, which screens them from receptors to the south and east, whilst the existing electrical infrastructure screens/ strongly filters views of the new plant from receptors to the northwest and west. And, the very minor scale and low frequency of operational stage activity at the new additions to Woodhouse substation in the context of an existing substation facility.

**Cumulative impacts of KWF Grid Connection with Authorised Knocknamona Windfarm will be Imperceptible to Slight**, this is generally due to the Medium-low sensitivity of the landscape within the site and surrounding area; the small scale of the works and construction activity which will take place concurrently with that of the Authorised Knocknamona Windfarm and will only add marginally to the overall intensity of construction activity within the immediate area; the additional electrical plant at Woodhouse Substation will not be noticeable when viewed together with the authorised Knocknamona Windfarm turbines; the very small scale of all operational activities associated with the Whole Project with operational activities predominantly taking place within turbines and within substation compounds and; the visual impact of the authorised Knocknamona Windfarm has already been assessed in 2016 and 2022 as Not Significant by An Bord Pleanála. **Overall the Whole Project effect is Not Significant.**

**When Woodhouse Windfarm and Woodhouse Substation are also taken into account, cumulative impacts will be Imperceptible to Slight**, this is generally due to the Medium-low sensitivity of the landscape within the site and surrounding study area; Woodhouse Windfarm and Woodhouse substation have already been constructed; operational activities at these facilities are of a very low scale and intensity; and the existing Woodhouse Substation facility will serve to screen much of the construction work and activity.

## 14.4 The Summary of the Landscape Chapter

People's perceptions turn land into the concept of landscape. The Landscape chapter examines the effects of KWF Grid Connection on the different components of our environment - both natural (the influence of geology, soils, climate, flora and fauna) and cultural (the historical and current impact of land use, settlement, enclosure and other human interventions) and how additions to these components can be perceived by people.

The following aspects of Landscape were deemed to be sensitive to the development - **Landscape Character and Visual Amenity**. In relation to these sensitive aspects, the results of the evaluation were:

**Landscape Character:** potential negative impacts were evaluated as ranging from **Imperceptible to Slight Impacts**. (Section 14.2)

**Visual Amenity:** potential negative impacts were evaluated as ranging from **Imperceptible to Slight Impacts**. (Section 14.3)

### Related Documents

Non-Technical Summary of this chapter can be found in Volume C1: Non-Technical Summary: Section 14

### Figures for Landscape Chapter

- Figure 14.1: Location of KWF Grid Connection in relation to Landscape
- Figure 14.2.1: Study Area for Landscape Character (construction stage)
- Figure 14.2.2: Study Area for Landscape Character (Operational stage)
- Figure 14.3.1: Study Area for Visual Amenity (construction stage)
- Figure 14.3.2: Study Area for Visual Amenity (operation stage)

### Appendices for Landscape Chapter

- Appendix 14.1: Evaluation of Potential Impacts to Landscape

## 14.5 Reference List

IEMA & Landscape Institute (UK), (2013) *Guidelines for landscape and Visual Impact Assessment – 3<sup>rd</sup> Edition*, Rutledge.

Waterford County Council (2022) *Waterford County Development Plan 2022-2028*. Retrieved from <https://consult.waterfordcouncil.ie/en/consultation/waterford-city-county-development-plan-2022-%E2%80%93-2028>

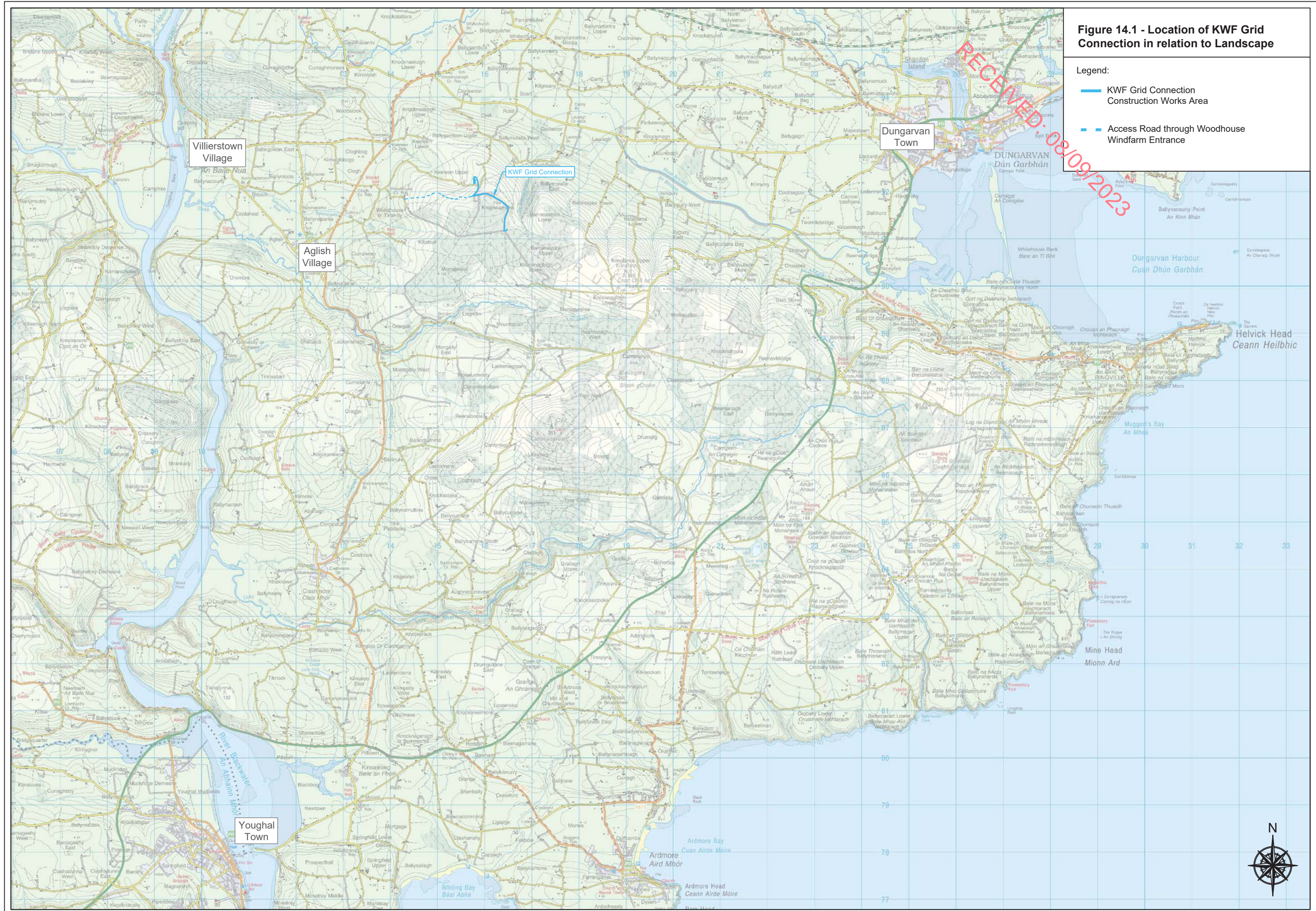
Southern Regional Assembly *Regional Spatial & Economic Strategy (RSES) for the Southern Region*. Retrieved from <http://www.southernassembly.ie/regional-planning/rses>

Irish Sports Council, *Irish Trails*. Retrieved from <http://www.irishtrails.ie>

Figure 14.1 - Location of KWF Grid Connection in relation to Landscape

Legend:

- KWF Grid Connection
- Construction Works Area
- Access Road through Woodhouse
- Windfarm Entrance



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**Figure 14.2.1 - Study Area for Landscape Character (construction stage)**

**Legend:**

**KWF Grid Connection:**

— KWF Grid Connection Construction Works Area

— Access Road through Woodhouse Windfarm Entrance

**Study Area Extents:**

— 500m KWF Grid Connection Study Area

— 1km Cumulative Study Area

**Whole Project:**

— Authorised Knocknamona Windfarm and amendments

— Authorised Junction & Bend widening works

**Other Projects:**

■ Existing Woodhouse Substation

— Existing Woodhouse Windfarm

**Map Features:**

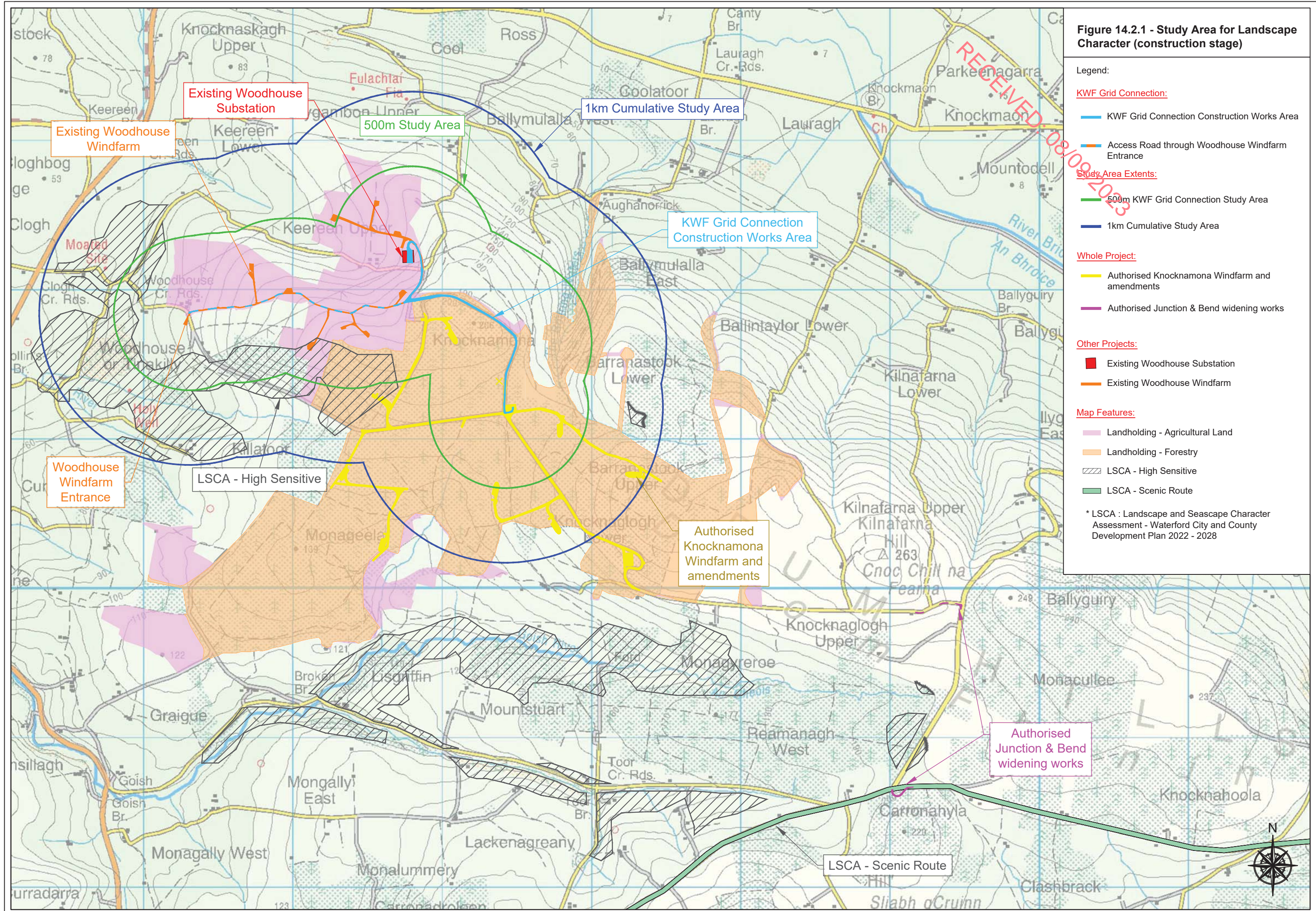
— Landholding - Agricultural Land

— Landholding - Forestry

▨ LSCA - High Sensitive

— LSCA - Scenic Route

\* LSCA : Landscape and Seascape Character Assessment - Waterford City and County Development Plan 2022 - 2028







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**Figure 14.2.2 - Study Area for Landscape Character (operational stage)**

**Legend:**



**KWF Grid Connection:**

-  KWF Grid Connection Construction Works Area
-  Access Road through Woodhouse Windfarm Entrance
-  Existing Woodhouse substation plant
-  Proposed electrical plant and apparatus



**Study Area Extents:**

-  2km from the Additional Plant in Woodhouse Substation
-  4km from the Additional Plant in Woodhouse Substation



**Whole Project:**

-  Authorised Knocknamona Windfarm and amendments
-  Authorised Junction & Bend widening works

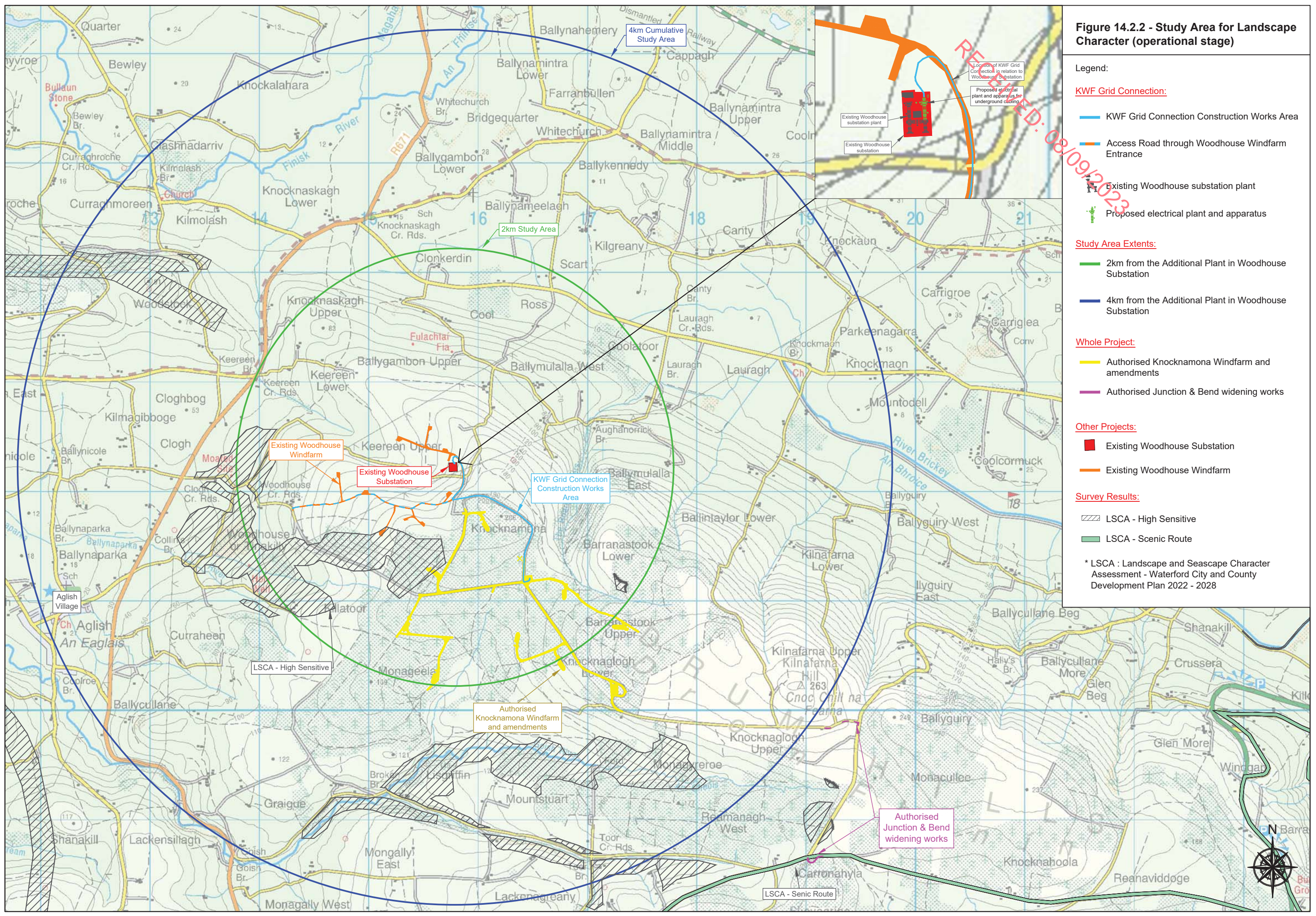
**Other Projects:**

-  Existing Woodhouse Substation
-  Existing Woodhouse Windfarm

**Survey Results:**

-  LSCA - High Sensitive
-  LSCA - Scenic Route

\* LSCA : Landscape and Seascape Character Assessment - Waterford City and County Development Plan 2022 - 2028



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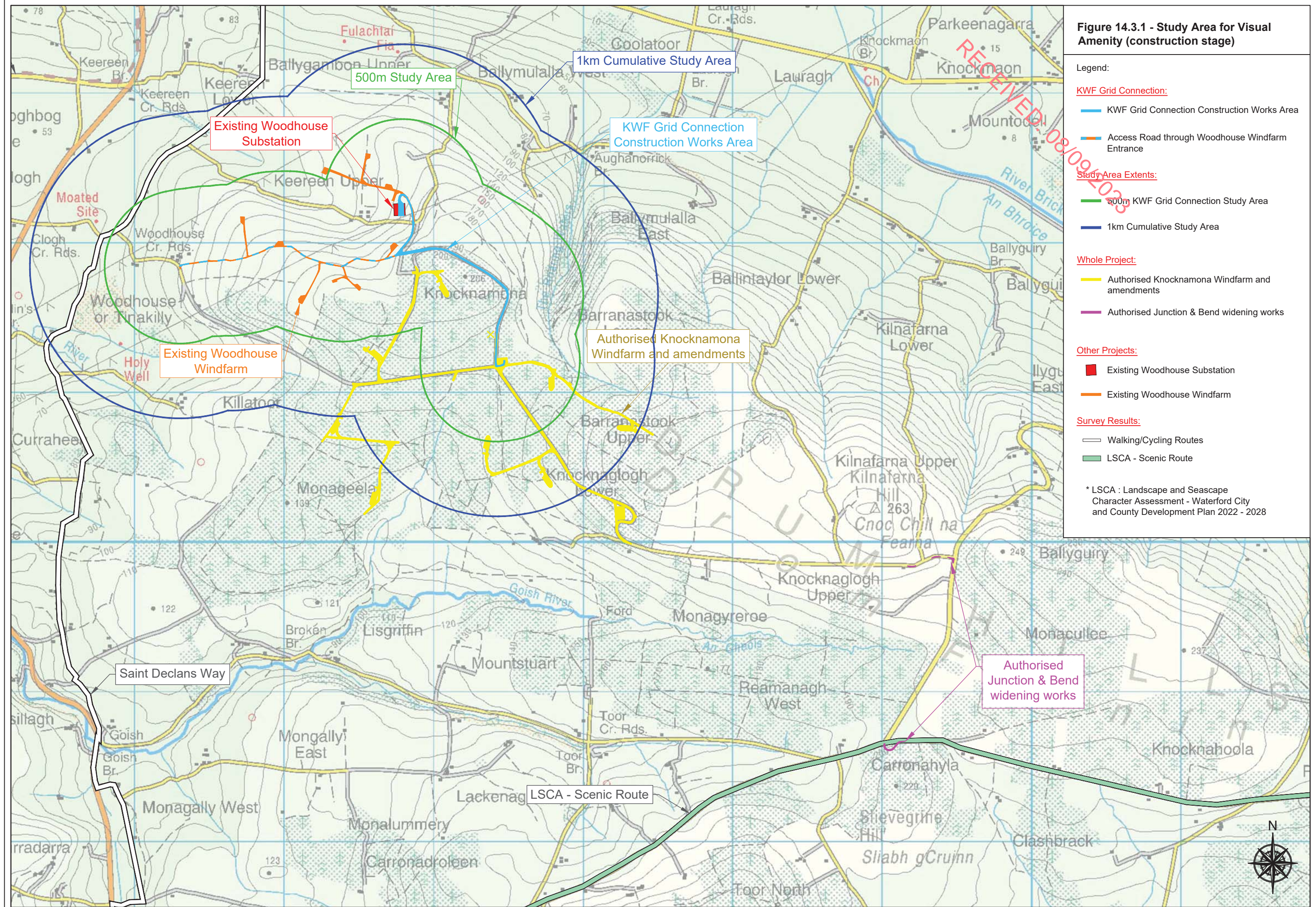


**Figure 14.3.1 - Study Area for Visual Amenity (construction stage)**

**Legend:**

- KWF Grid Connection:**
  - KWF Grid Connection Construction Works Area
  - Access Road through Woodhouse Windfarm Entrance
- Study Area Extents:**
  - 500m KWF Grid Connection Study Area
  - 1km Cumulative Study Area
- Whole Project:**
  - Authorised Knocknamona Windfarm and amendments
  - Authorised Junction & Bend widening works
- Other Projects:**
  - Existing Woodhouse Substation
  - Existing Woodhouse Windfarm
- Survey Results:**
  - Walking/Cycling Routes
  - LSCA - Scenic Route

\* LSCA : Landscape and Seascapes Character Assessment - Waterford City and County Development Plan 2022 - 2028



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**Figure 14.3.2 - Study Area for Visual Amenity (operational stage)**

**Legend:**

**KWF Grid Connection:**

- KWF Grid Connection Construction Works Area
- Access Road through Woodhouse Windfarm Entrance

**Other Features:**

- Existing Woodhouse substation plant
- Proposed electrical plant and apparatus

**Study Area Extents:**

- 2km from the Additional Plant in Woodhouse Substation
- 4km from the Additional Plant in Woodhouse Substation

**Whole Project:**

- Authorised Knocknamona Windfarm and amendments
- Authorised Junction & Bend widening works

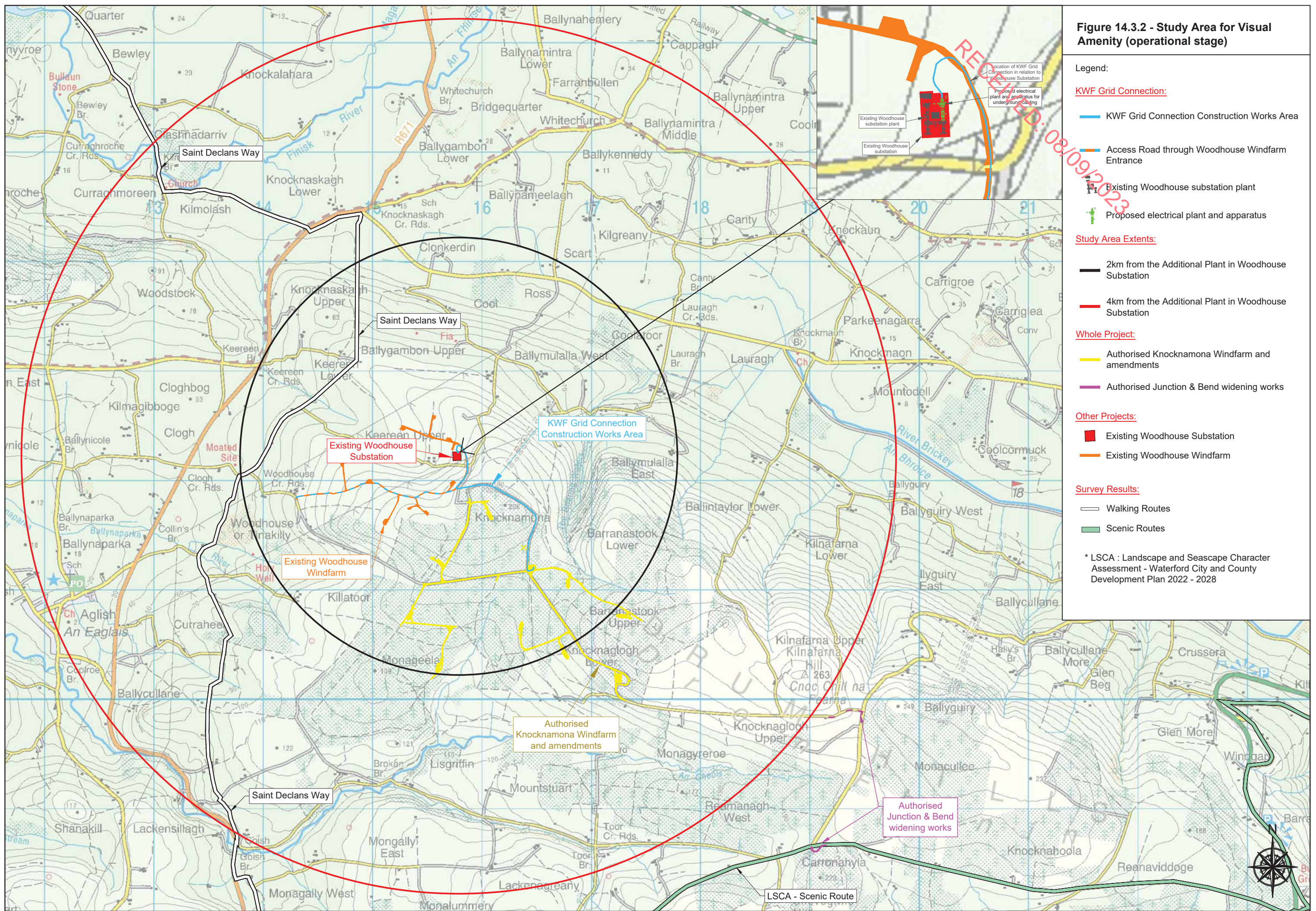
**Other Projects:**

- Existing Woodhouse Substation
- Existing Woodhouse Windfarm

**Survey Results:**

- Walking Routes
- Scenic Routes

\* LSCA : Landscape and Seascape Character Assessment - Waterford City and County Development Plan 2022 - 2028



## Appendix 14.1: Evaluation of Potential Impacts to Landscape

This Appendix contains Impact Evaluation Tables for the following Sensitive Aspects:

Sensitive Aspect No. 1	Landscape Character	Section 14.2 of the Main Report
Sensitive Aspect No. 2	Visual Impact	Section 14.3 of the Main Report

### Evaluation of Potential Impacts to LANDSCAPE CHARACTER

In relation to **Landscape Character**, the following potential impacts were evaluated:

Potential Impacts which were evaluated	Relevant Stage of KWF Grid Connection	Evaluated in this Appendix Table:
Alteration or division of land cover and vegetation patterns	Construction	A14.1, Table 1
Intensification of built development and reduction in the integrity of rural landscape patterns	Operational	A14.1, Table 2
Intensification of activity causing a reduction in rural tranquillity	Construction	A14.1, Table 3
Intensification of activity causing a reduction in rural tranquillity	Operational	A14.1, Table 4

**A14.1 Table 1 Landscape Character - Alteration or division of land cover and vegetation patterns**

Impact Source	Excavation of soil and vegetation removal
Impact Pathway (between Source and Sensitive Aspect)	Physical land cover disturbance / change
Brief Impact Description	Temporary change to physical landscape elements in the form of excavation, removal or disruption of soils and temporary side-cast stockpiling of materials along forestry/wind farm tracks, and through a narrow patch of scrubland that could impact on the integrity of landscape patterns that contribute to the upland rural landscape character of the area
Project Stage:	Construction
<b>A: Direct/Indirect Impacts of KWF Grid Connection</b>	<p>The impact will have <b>Imperceptible</b> significance because:</p> <ul style="list-style-type: none"> <li>the Medium-low sensitivity of landscape character within the KWF Grid Connection Study Area</li> <li>the negligible magnitude of impacts due to the once-off, very minor and temporary disruption of landscape elements which are predominantly made up of existing access tracks, with very small areas of scrubland and existing substation compound yard;</li> <li>The effects of the underground cabling are reversible upon reinstatement of excavated material; the typical nature of the already modified land cover elements.</li> </ul>
<b>B: Cumulative Impact of the Whole Project - KWF Grid Connection with the authorised Knocknamona Windfarm i.e. the windfarm; amendments to the windfarm to provide for larger turbines and Junction &amp; Bend Widening Works to facilitate turbine component access through the windfarm site entrance at Knocknaglogh Lower</b>	<p>The cumulative impact will have <b>Slight</b> significance because:</p> <ul style="list-style-type: none"> <li>the Medium-low sensitivity of landscape character within the Cumulative Study Area</li> <li>due to the larger extent of works for the authorised Knocknamona Windfarm within the Cumulative Study Area, it is considered that the magnitude increases from 'negligible' to 'low' for cumulative temporary disruption of landscape elements that could occur as a result of KWF Grid Connection being built during the same period as the whole Knocknamona Windfarm project.</li> <li>the effects of KWF Grid Connection will be reversible upon reinstatement over the cable trench, while the widening of the forestry track by 1m will not be noticeable following the reinstatement and revegetation of the adjacent verges.</li> <li>In relation to the whole project effect, despite the larger extent of works for the windfarm, it is considered that the magnitude remains at 'low', and therefore the whole project effect will be of <b>Slight</b> significance because of the typical nature of the already modified land cover elements within the sites.</li> </ul>
<b>C: Cumulative Impact with Woodhouse Substation and</b>	<p>The cumulative impact will have <b>Slight</b> significance because:</p> <ul style="list-style-type: none"> <li>the Medium-low sensitivity of the landscape within the combined sites and wider Cumulative Study Area,</li> </ul>

<p><b>Woodhouse Windfarm</b></p>	<ul style="list-style-type: none"> <li>• the negligible additional cumulative magnitude due to the operational status of Woodhouse Windfarm and Woodhouse Substation, the utilisation of existing Woodhouse Windfarm access roads and the existing Woodhouse Substation compound. The effects associated with the underground cabling element of KWF Grid Connection will be temporary as the works will be reinstated with the excavated material.</li> <li>• the typical nature of the already modified land cover elements within all sites.</li> </ul>

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**A14.1 Table 2 Landscape Character - Intensification of built development and reduction in the integrity of rural landscape patterns**

Impact Source	Presence of above ground structures, permanent alterations to landform/ vegetation patterns
Impact Pathway (between Source and Sensitive Aspect)	Visibility
Brief Impact Description	The permanent above-ground structures associated with the KWF Grid Connection are limited to the additional plant and apparatus which will be constructed within the existing Woodhouse Substation compound, which will not result in any increase in the size of the substation footprint. These structures are also tucked into the base of an existing embankment, such that they will not increase the visual envelope of the substation and will generally be visible only through existing electrical infrastructure.
Project Stage:	Operation
<b>A: Direct/Indirect Impacts of KWF Grid Connection</b>	<p>The impact will have <b>Imperceptible</b> significance because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of landscape character within the KWF Grid Connection Study Area,</li> <li>• The negligible magnitude - The only permanent above-ground expression of the KWF Grid Connection development includes small scale additional electrical structures to be located within the existing Woodhouse substation facility, where the intensity of built development will be marginally increased, but neither the footprint of the existing compound nor the visual envelope will be increased.</li> <li>• In the context of the typical and established form of electrical infrastructure associated with the existing Woodhouse Substation.</li> </ul>
<b>B B: Cumulative Impact of the Whole Project - KWF Grid Connection with the authorised Knocknamona Windfarm i.e. the windfarm; amendments to the windfarm to provide for larger turbines and Junction &amp; Bend Widening Works to facilitate turbine component access through the windfarm site entrance at Knocknaglogh Lower</b>	<p>The cumulative impact will have <b>Imperceptible</b> significance because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of landscape character within the Cumulative Study Area,</li> <li>• the negligible magnitude of cumulative effects - Notwithstanding the impacts of Knocknamona Windfarm on its own, the additional plant and apparatus for KWF Grid Connection at Woodhouse Substation will not be noticeable when viewed together with Knocknamona Windfarm turbines.</li> <li>• In relation to amendments to provide for larger turbines, although the tip height relative to the previously authorised tip height is equivalent to a 23% increase in scale, the principle of eight commercial scale wind turbines is already established on this site and, from experience, such variation is more difficult to discern than the dimensional differences suggest. Furthermore, this is a broad upland setting where the landform and land use patterns are considered capable of assimilating the larger turbine dimensions as readily as the authorised dimensions. Consequently, the alteration of the dimensions of the turbines is not considered to result in a noticeably increased effect on physical landscape elements or the overall character of the landscape in comparison to the previously authorised turbines.</li> </ul>

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	<ul style="list-style-type: none"> <li>• In relation to Junction &amp; Bend Widening works, the temporary works will be reinstated and any permanent works will be barely discernible.</li> <li>• in relation to the whole project effect, the landscape impact of the Authorised Knocknamona Windfarm has already been assessed as <b>not significant</b> by An Bord Pleanála in 2016 and in 2022. It is considered that the very minor addition of electrical equipment to the existing Woodhouse Substation will be Imperceptible, if perceived at all, and therefore it is considered that the combined whole project effect remains not significant.</li> </ul>
<p><b>C: Cumulative Impact with Woodhouse Substation and Woodhouse Windfarm</b></p>	<p>The cumulative impact will have <b>Imperceptible</b> significance because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of landscape character within Cumulative Study Area,</li> <li>• The landscape impact of Authorised Knocknamona Windfarm cumulatively with Woodhouse Windfarm has already been assessed as <b>not significant</b> by An Bord Pleanála in 2016 and 2022.</li> <li>• the negligible magnitude of additional effects associated with KWF Grid Connection - due to the very minor addition of electrical equipment to the existing Woodhouse Substation being the only permanent above-ground expression of the proposed KWF Grid Connection, which will not be noticeable when viewed in the context of operating Woodhouse turbines and the existing plant, apparatus and buildings within the existing Woodhouse Substation.</li> </ul>

**A14.1 Table 3 Landscape Character - Intensification of activity causing a reduction in rural tranquillity**

Impact Source	Construction related activities
Impact Pathway (between Source and Sensitive Aspect)	Visibility, air
Brief Impact Description	There will be brief and transient construction activity (movement of workers and machinery as well as stockpiling of earth materials and building materials) along the construction works areas along the underground cabling/forestry road widening/new link road sections of the proposed KWF Grid Connection as well as more focussed and prolonged construction activity (2 months) within the existing Woodhouse Substation (4 months) where additional electrical plant and apparatus will be constructed.
Project Stage:	Construction
<b>A: Direct/Indirect Impacts of KWF Grid Connection</b>	<p>The impact will have <b>Slight</b> significance because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of landscape character within the KWF Grid Connection Study Area</li> <li>• The low magnitude - once-off, temporary construction related activities will be of a small scale and are contained within baseline setting of a productive rural landscape of familiar forestry and farming and wind farm activities.</li> </ul>
<b>B: Cumulative Impact of the Whole Project - KWF Grid Connection with the authorised Knocknamona Windfarm i.e. the windfarm; amendments to the windfarm to provide for larger turbines and Junction &amp; Bend Widening Works to facilitate turbine component access through the windfarm site entrance at Knocknaglogh Lower</b>	<p>The cumulative impact will have <b>Slight</b> significance because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of landscape character within the Cumulative Study Area.</li> <li>• The low magnitude of any combined construction activity due to the small scale of KWF Grid Connection, which will only add marginally to the overall intensity and dissemination of construction activity in the immediate area of Knocknamona Windfarm works. There is no requirement for additional construction activity for the larger turbines and the haul route works are very minor and localised haul route works.</li> <li>• While there will be more extensive construction works and therefore greater effects to rural tranquillity, the magnitude of the whole project effect remains at 'low', mainly due to the temporary duration of construction in a productive rural setting. Therefore the whole project effect is also of Slight Significance.</li> </ul>
<b>C: Cumulative Impact with Woodhouse Substation and Woodhouse Windfarm</b>	<p>The cumulative impact will have <b>Imperceptible - Slight</b> Significance because:</p> <ul style="list-style-type: none"> <li>• the Medium-low sensitivity of landscape character within the Cumulative Study Area,</li> <li>• The Low cumulative magnitude - Woodhouse Windfarm and Woodhouse substation have already been constructed and operational activities are of a</li> </ul>

	<p>very low scale and intensity. When considered cumulatively with construction activities for KWF Grid Connection and for the whole Knocknamona Windfarm project, the magnitude of cumulative activity does not increase above 'low', mainly due to the temporary nature of the whole Knocknamona Windfarm project works in a productive rural/substation setting.</p>

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**A14.1 Table 4 Landscape Character - Intensification of activity causing a reduction in rural tranquillity**

Impact Source	Operational Activities
Impact Pathway (between Source and Sensitive Aspect)	Visibility
Brief Impact Description	Periodic presence workers and movement of vehicles during operational activities at the new KWF Grid Connection related elements of the Woodhouse substation.
Project Stage:	Operation
<b>A: Direct/Indirect Impacts of KWF Grid Connection</b>	<p>The impact will have <b>Imperceptible</b> significance because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of landscape character within the KWF Grid Connection Study Area.</li> <li>• The negligible magnitude due to the very minor scale and very low frequency of operational stage activity for KWF Grid Connection (4 days per year), with most operational maintenance activity taking place in the existing Woodhouse Substation compound.</li> </ul>
<b>B: Cumulative Impact of the Whole Project - KWF Grid Connection with the authorised Knocknamona Windfarm i.e. the windfarm; amendments to the windfarm to provide for larger turbines and Junction &amp; Bend Widening Works to facilitate turbine component access through the windfarm site entrance at Knocknaglogh Lower</b>	<p>The cumulative impact will have <b>Imperceptible</b> significance because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of landscape character within the Cumulative Study Area.</li> <li>• The negligible cumulative magnitude of all operational activities associated with the whole Knocknamona Windfarm project, with operational activities predominantly taking place within turbines and within substation compounds. There is no requirement for extra operational activities for the larger turbines and the junction &amp; bend widening works will have negligible operational activities.</li> <li>• The intensification of activities due to the Whole Project will have an Imperceptible effect on rural tranquillity.</li> </ul>
<b>C: Cumulative Impact with Woodhouse Substation and Woodhouse Windfarm</b>	<p>The cumulative impact will have <b>Imperceptible</b> significance because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of landscape character within the Cumulative Study Area;</li> <li>• Similar to the cumulative impacts of the Whole Project, the magnitude of all operational activities associated with Woodhouse Windfarm and Woodhouse Substation and the whole Knocknamona Windfarm project will be negligible with very minor operational activities taking place predominantly within turbines and within substation compounds.</li> </ul>

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### Evaluation of Potential Impacts to VISUAL AMENITY

In relation to **Visual Amenity**, the following potential impacts were evaluated:

Potential Impacts which were evaluated	Relevant Stage of KWF Grid Connection	Evaluated in this Appendix in Table:
Intensification of activity causing visual disharmony, clutter or complexity	Construction	A14.1, Table 5
Addition of new features or loss of existing features causing visual disharmony, clutter or complexity	Operational	A14.1, Table 6
Intensification of activity causing visual disharmony, clutter or complexity	Operational	A14.1, Table 7

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**A14.1 Table 5 Visual Amenity - Intensification of activity causing visual disharmony, clutter or complexity**

Impact Source	Construction related activities
Impact Pathway (between Source and Sensitive Aspect)	Visibility
Brief Impact Description	Construction activity will include the near constant movement, during daylight hours, of machinery, vehicles and people to and from both linear cable route and fixed substation location construction sites. There will be temporary stockpiling of excavated materials and construction materials.
Project Stage:	Construction stage
<b>A: Direct/Indirect Impacts of KWF Grid Connection</b>	<p>The impact will have <b>Slight</b> significance because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of visual amenity within the KWF Grid Connection Study Area.</li> <li>• The Low Magnitude - The once-off, temporary construction related activities will be of a small scale and are contained within baseline setting of a productive rural landscape of familiar forestry and farming and wind farm activities. The construction works within the existing Woodhouse Substation will be well screened by a combination of terrain, vegetation and the existing substation apparatus and buildings.</li> </ul>
<b>B: Cumulative Impact of the Whole Project - KWF Grid Connection with the authorised Knocknamona Windfarm i.e. the windfarm; amendments to the windfarm to provide for larger turbines and Junction &amp; Bend Widening Works to facilitate turbine component access through the windfarm site entrance at Knocknaglogh Lower</b>	<p>The cumulative impact will have <b>Slight</b> significance because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of visual amenity within the Cumulative Study Area.</li> <li>• The low magnitude of any combined construction activity due to the small scale of KWF Grid Connection which will only add marginally to the overall intensity and dissemination of construction activity in the immediate area of Knocknamona Windfarm works. There is no requirement for additional construction activity for the larger turbines and there will be very minor and localised road widening and junction works, which will not have a marked impact on visual amenity.</li> <li>• While there will be more extensive construction works and therefore greater effects to rural tranquility, the magnitude of the whole project effect remains at 'low', mainly due to the temporary duration of construction in a productive rural setting. Therefore the Whole Project effect on visual disharmony, clutter or complexity is also of Slight significance.</li> </ul>
<b>C: Cumulative Impact with Woodhouse Substation and</b>	<p>The cumulative impact will have <b>Slight</b> significance because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of of visual amenity within the Cumulative Study Area.</li> <li>• The Low Cumulative Magnitude - Woodhouse Windfarm and Woodhouse substation have already been constructed and operational activities are of a</li> </ul>

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<p><b>Woodhouse Windfarm</b></p>	<p>very low scale and intensity. When considered cumulatively with construction activities for the whole Knocknamona Windfarm project, the magnitude of cumulative activity does not increase above 'low', mainly due to the temporary nature of the whole Knocknamona Windfarm project works in a productive rural/substation setting.</p>

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**A14.1 Table 6 Visual Amenity - Addition of new features or loss of existing features causing visual disharmony, clutter or complexity**

Impact Source	Presence of above ground structures, permanent alterations to landform/ vegetation patterns
Impact Pathway (between Source and Sensitive Aspect)	Visibility
Brief Impact Description	There will be a series of new above ground electrical structures and an associated control building within the footprint of the existing Woodhouse substation following construction of KWF Grid Connection. These are the only permanent above ground structures associated with the development. The new electrical plant potentially visible from the local access road serving the substation as well as several surrounding rural dwellings at distances beyond 550m (non-involved landowners). It is also potentially visible from a very small section of the St Declan's Way walking route (1.5km northwest).
Project Stage:	Operation stage
<b>A: Direct/Indirect Impacts of KWF Grid Connection</b>	<p>The impact will have <b>Imperceptible</b> significance because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of visual amenity within the KWF Grid Connection Study Area.</li> <li>• The Negligible magnitude - The permanent structures are of a small scale and are almost identical in nature to existing structures within the Woodhouse substation. They will also be positioned below an existing steep embankment, which screens them from receptors to the south and east, whilst the existing electrical infrastructure screens/ strongly filters views of the new plant from receptors to the north and west.</li> </ul>
<b>B: Cumulative Impact of the Whole Project - KWF Grid Connection with the authorised Knocknamona Windfarm i.e. the windfarm; amendments to the windfarm to provide for larger turbines and Junction &amp; Bend Widening Works to facilitate turbine component access through the windfarm site entrance at Knocknaglogh Lower</b>	<p>The cumulative impact will be <b>Imperceptible</b> because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of visual amenity within the Cumulative Study Area.</li> <li>• The Low magnitude of cumulative effects - Notwithstanding the impacts of Knocknamona Windfarm on its own, the additional plant and apparatus for KWF Grid Connection at Woodhouse Substation will not be noticeable when viewed together with Knocknamona Windfarm turbines.</li> <li>• Although the visual presence of the larger turbines is slightly greater, this does not result in a material increase in overall visual impact. Even though the larger turbines appear marginally larger than the previously authorised turbines (reality is 23%), this dimensional increase will not be reflected by a proportional increase in visual impact. From some viewpoints the aesthetics of the development and its relationship with the adjacent Woodhouse development are marginally altered by the height increase. However, such effects are very nuanced and have little bearing on visual amenity overall. Whilst the larger turbines are discernibly larger than their previously authorised counterparts, particularly from closer viewpoints, they do not appear over-scaled relative to the broad scale underlying landform of land use patterns. Nor do they appear incongruous next to the smaller</li> </ul>

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	<p>Woodhouse turbines. Indeed, a casual observer may not read the difference in height between the larger Knocknamona turbines and the existing Woodhouse turbines as this could easily be perceived as a function of the higher ground level of the taller turbines balanced by their greater relative distance from most receptors.</p> <ul style="list-style-type: none"> <li>• Temporary haul route works will be reinstated and any permanent works will be barely discernible having no material impact on visual amenity.</li> <li>• In relation to the Whole Project effect, the visual impact of the Authorised Knocknamona Windfarm has already been assessed as Not Significant by An Bord Pleanála in 2016 and 2022. It is considered that the very minor addition of electrical equipment to the existing Woodhouse Substation will be Imperceptible, if perceived at all, and therefore it is considered that the combined <b>whole project effect remains not significant</b>.</li> </ul>
<p><b>C: Cumulative Impact with Windfarm, Woodhouse Substation and Woodhouse Windfarm</b></p>	<p>The cumulative impact will be <b>Imperceptible</b> because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of visual amenity within the Cumulative Study Area.</li> <li>• The Low magnitude of cumulative effects. The visual impact of Authorised Knocknamona Windfarm cumulatively with Woodhouse Windfarm has already been assessed as Not Significant by An Bord Pleanála in 2016 and 2022. The additional impact associated with KWF Grid Connection will be negligible - due to the very minor addition of electrical equipment to the existing Woodhouse Substation being the only permanent above-ground expression of the proposed KWF Grid Connection which will not be noticeable when viewed in the context of operating turbines and the existing plant, apparatus and buildings within the existing Woodhouse Substation.</li> </ul>

**A14.1 Table 7 Visual Amenity - Intensification of activity causing visual disharmony, clutter or complexity**

Impact Source	Operational Activities
Impact Pathway (between Source and Sensitive Aspect)	Visibility
Brief Impact Description	Views of workers and movement of vehicles during operational activities at the new KWF Grid Connection related elements of the Woodhouse substation.
Project Stage:	Operation
<b>A: Direct/Indirect Impacts of KWF Grid Connection</b>	<p>The impact will have <b>Imperceptible</b> significance because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of visual amenity within the KWF Grid Connection Study Area;</li> <li>• The negligible magnitude due to the very minor scale and low frequency of operational stage activity with operational activities limited to a visual inspection of underground cabling route, and approximately 3 days of maintenance annually of the additional apparatus in Woodhouse substation, and in the context of an existing substation facility.</li> </ul>
<b>B: Cumulative Impact of the Whole Project - KWF Grid Connection with the authorised Knocknamona Windfarm i.e. the windfarm; amendments to the windfarm to provide for larger turbines and Junction &amp; Bend Widening Works to facilitate turbine component access through the windfarm site entrance at Knocknaglogh Lower</b>	<p>The cumulative impact will have <b>Imperceptible</b> significance because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of visual amenity within the Cumulative Study Area;</li> <li>• The negligible cumulative magnitude of all operational activities associated with the whole Knocknamona Windfarm project, with operational activities predominantly taking place within turbines and within substation compounds. There is no requirement for additional operational activity for the larger turbines and temporary haul route works will be reinstated and any permanent works will be barely discernible having no material impact on visual amenity.</li> <li>• The intensification of activities due to the whole project will have an imperceptible effect on rural tranquility.</li> </ul>
<b>C: Cumulative Impact with Woodhouse Substation and Woodhouse Windfarm</b>	<p>The cumulative impact will have <b>Imperceptible</b> significance because:</p> <ul style="list-style-type: none"> <li>• The Medium-low sensitivity of visual amenity within the Cumulative Study Area;</li> <li>• Similar to the cumulative impacts with the whole Knocknamona Windfarm project, the magnitude of all operational activities associated with Woodhouse Windfarm and Woodhouse Substation and the whole</li> </ul>

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	<p>Knocknamona Windfarm project will be negligible with very minor operational activities taking place predominantly within turbines and within substation compounds.</p>

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