macroworks

LANDSCAPE & VISUAL IMPACT ASSESSMENT

Ballyglass Grid Connection

Co. Clare.

Prepared by Macro Works Ltd

June 2026

LVIA I TVIA I Landscape Design I Visibility Analysis I Glint and Glare I Verified Photomontages I CGI I Shadow Flicker Analysis

1. LANDSCAPE AND VISUAL IMPACT ASSESSMENT 3

1.1 Introduction 3

1.2 Methodology 4

1.3 Landscape and Visual Policy Context and Designations 13

1.4 Existing Environment 18

1.5 Mitigation and Restoration Measures 23

1.6 Impact Assessment 25

1.7 Cumulative effects 35

1.8 Conclusions 38

1.9 References 39

This LVIA should be read in conjunction with the LVIA Photomontages produced by Macro Works Ltd

Registered Landscape Architect

1. LANDSCAPE AND VISUAL IMPACT ASSESSMENT

1.1 INTRODUCTION

This Landscape and Visual Assessment (LVIA) has been prepared to accompany a planning application for a 110kV Air Insulated Switchgear (AIS) electricity substation and grid connection in the townlands of Ballyglass, Blackwater, Castlebank, Lakyle, Mountcatherine, Oakfield, Parkroe, Reanabrone, Rosmadda West and Ruanard (townlands), Ardnacrusha, County Clare.

For clarity, it should be noted that the terms 'proposed development' and 'proposed substation and grid connection' are interchangeable in this report and, where contextually relevant, references are also made to the permitted Ballyglass Solar Farm (Clare planning ref: 22591, An Coimisiún Pleanála ref: PL03.316043) and proposed Ballyglass Solar Farm (Phase II) (Clare Planning ref: 2460485, An Coimisiún Pleanála ref: PL03.500253). It should be noted that electricity generated on the permitted and proposed solar farm will be transmitted on to the national electricity grid via the proposed substation and grid connection.

In addition, it is also important to note that the wider solar farm development has been subject to a comprehensive review by Clare County Council (CCC) and An Coimisiún Pleanála (An Bord Pleanála (ABP)) as part of the Ballyglass Solar Farm application. An Coimisiún Pleanála Board Order ABP-316043-23 notes that the proposed development would be "be in accordance with the proper planning and sustainable development of the area". The proposed Ballyglass Solar Farm Phase II was granted by Clare County Council in October 2025, with planning appeal lodged with An Coimisiún Pleanála 11/11/2025 (Case reference: PL03.500253) due to be decided March 2026.

This LVIA describes the landscape context of the proposed substation and grid connection development and, given its proximity, both phases of Ballyglass Solar Farm and assesses the likely landscape and visual impacts of the scheme on the receiving environment. Although closely linked, landscape and visual impacts are assessed separately.

- Landscape Impact Assessment (LIA) relates to assessing effects of a development on the landscape as a resource in its own right and is concerned with how the development will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character.
- Visual Impact Assessment (VIA) relates to assessing effects of a development on specific views and on the general visual amenity experienced by people. This deals with how the surroundings of individuals or groups of people may be specifically affected by changes in the content and character of views as a result of the change or loss of existing elements of the landscape and/or introduction of new elements. Visual impacts may occur from; Visual Obstruction (blocking of a view, be it full, partial or intermittent) or; Visual Intrusion (interruption of a view without blocking).

1.1.1 Approach and Statement of Authority

This LVIA adopts an approach that is founded in the following best practice guidance documents:

- Landscape Institute and the Institute of Environmental Management and Assessment (IEMA) publication entitled Guidelines for Landscape and Visual Impact Assessment, 2013 (GLVIA3);
- Environmental Protection Agency (EPA) publication 'Guidelines on the Information to be contained in Environmental Impact Statements (2022); and
- 'Photography and Photomontage in Landscape and Visual Impact Assessment', Landscape Institute Technical Guidance Note 06/2019.

This LVIA was prepared by Macro Works Ltd of Cherrywood Business Park, Loughlinstown, Dublin 18; a consultancy firm specialising in Landscape and Visual Assessment and associated maps and graphics. Macro Works' relevant experience includes a broad range of infrastructural, renewable energy including 150+ Solar Farm developments along with industrial and commercial projects, numerous urban, residential, and mixed use development since 1999.

1.1.2 Description of the Proposed Development

A 110 kilovolt (kV) Air-Insulated Switchgear (AIS) electrical substation, including 2 no. single-storey control buildings with staff welfare facilities, underground wastewater storage tank, all associated electrical plant, cabling, equipment and apparatus, and security fencing, within a substation compound with a total footprint of approximately 0.8 ha; 5.6 kilometre (km) 110kV underground cabling route, with 4.75km following the public road corridor and 0.85km along new proposed access track across agricultural grassland and private access tracks (including joint bays, communication and earth sheath link chambers and all ancillary works along the route); 1 no. temporary construction compound (including offices and staff welfare facilities); temporary construction and operational access from a new entrance from the L70382; Spoil management, landscaping and earthworks; Site drainage; All ancillary works and apparatus.

The development subject to this application forms part of grid connection and access arrangements which will facilitate the connection of the permitted Ballyglass Solar Array Phase 1 (Clare County Council Reference P22-591 and An Coimisiún Pleanála Reference ABP-316043-23) and Phase 2 (Clare County Council Reference P24-60485 and An Coimisiún Pleanála Reference PL-500253-CE-25) to the national grid.

This application is accompanied by a Natura Impact Statement (NIS).

The proposed development works can be summarised as follows:

- Construction of new 110kV substation;
- Underground 110kV underground cable grid connection to the existing Ardnacrusha 110kV substation, including associated joint bays, communication chambers and earth sheath link chambers;
- Temporary construction compound;
- Provision of vehicular construction and operational entrance and access track from the L70382.
- Site drainage;
- Spoil management, landscaping and earthworks.

1.2 METHODOLOGY

This document uses methodology as prescribed in the previously mentioned GLVIA3, which follows the European Landscape Convention (ELC) definition of landscape:

> *'Landscape is an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors' (Council of Europe, 2000). Thus, GLVIA-2013 covers all landscapes from "high mountains and wild countryside to urban and fringe farmland (rural landscapes), marine and coastal landscapes (seascapes) and the landscapes of villages towns and cities (townscapes)" - whether protected or degraded.*

1.2.1 Scope of the Assessment

GLVIA3 establishes guidelines and not a specific methodology. The preface recognises that:

> *'This edition concentrates on principles and processes. It does not provide a detailed or formulaic 'recipe' that can be followed in every situation – it remains the responsibility of the professional to ensure that the approach and methodology adopted are appropriate to the task in hand.'*

The methodology for this assessment has therefore been developed specifically for this assessment to ensure that it is appropriate and fit for purpose. The LVIA Methodology can be summarised as undertaking the following key tasks:

- Desk study and site visits in May & August 2024;
- Defining the Baseline Landscape setting and conditions;
- Identification and Evaluation of key components of the proposed development;
- Consideration of Mitigation Measures;
- Assessment of Landscape Effects;
- Assessment of Visual Effects; and
- Summary Statement of Significance.

1.2.2 Study Area

From similar studies, it is anticipated that the proposed development is likely to be difficult to discern beyond approximately 3km and is not likely to give rise to significant landscape or visual impacts beyond approximately 2km. In the interests of a comprehensive appraisal, a 3km radius study area is used in this instance. However, there will be a particular focus on receptors contained within 2km, except where iconic or designated scenic viewpoints exist at greater distances out to 3km (refer to Figure 1.1). A study area of 3km has typically been used for infrastructure projects in Ireland, Northern Ireland and Great Britain and this approach has been deemed acceptable by multiple planning authorities including Clare County Council.

Figure 1.1 3km Extent of the Study Area

1.2.3 Landscape Impact Assessment Criteria

This part of the LVIA provides an assessment of how the introduction of the proposed development will affect the physical features and fabric of the landscape, and then how the proposals influence landscape character with reference to published descriptions of character and an understanding of the contemporary character of the landscape as informed through desktop and site studies.

When assessing the potential landscape effects of the development, the value and sensitivity of the landscape receptor is weighed against the magnitude of impact to determine the significance of the landscape effect. Criteria outlined below are used to guide these judgements.

1.2.3.1 Landscape Sensitivity

The sensitivity of the landscape to change is the degree to which a particular setting can accommodate changes or new elements without unacceptable detrimental effects to its essential characteristics. In accordance with GLVIA3, the sensitivity of a landscape receptor (Landscape Character Area or feature) is derived from combining judgements in relation to its susceptibility to change and its value. The judgement reflects such factors as its quality, value, contribution to landscape character and the degree to which the particular element or characteristic can be replaced or substituted. Landscape Sensitivity is classified using the following criteria set out in Table 1.1.

Table 1.1 Landscape Value and Sensitivity

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

1.2.4 Magnitude of Change – Landscape

The magnitude of change is a product of the scale, extent or degree of change that is likely to be experienced as a result of the proposed development and to a lesser extent the duration and reversibility of that effect. 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 immediate setting that may have an effect on the landscape character. Table 1.2 outlines criteria used to inform this judgement.

Table 1.2 Magnitude of Change – Landscape

Criteria	Description
Very High	Change that would be large in extent and scale with the loss of critically important landscape elements and features, that may also involve the introduction of new uncharacteristic elements or features that contribute to an extensive change of the landscape in terms of character, value and quality.

High	Change that would be more limited in extent and scale with the loss of important landscape elements and features, that may also involve the introduction of new uncharacteristic elements or features that contribute to a considerable change of the landscape in terms of character, value and quality.
Medium	Changes that are modest in extent and scale involving the loss of landscape characteristics or elements that may also involve the introduction of new uncharacteristic elements or features that would lead to noticeable changes in landscape character, and quality.
Low	Changes affecting small areas of landscape character and quality, together with the loss of some less characteristic landscape elements or the addition of new features or elements that would lead to discernible changes in landscape character, and quality.
Negligible	Changes affecting small or very restricted areas of landscape character. This may include the limited loss of some elements or the addition of some new features or elements that are characteristic of the existing landscape or are hardly perceivable leading to no material change to landscape character, and quality.

1.2.5 Visual Impact Assessment Criteria

This part of the LVIA provides an assessment of how the introduction of the proposed development will affect views within the landscape. It therefore needs to consider:

- Direct impacts of the proposed development upon views through intrusion or obstruction;
- The reaction of viewers who may be affected, e.g. residents, walkers, road users; and
- The overall impact on visual amenity.

It has been deemed appropriate to structure the assessment around a series of representative viewpoint locations. All viewpoints are located within the public domain and are representative of views available from main thoroughfares and pedestrian areas within the vicinity of the proposed development. The selected viewpoints are considered to be comprehensive in communicating the variable nature of the visual effects.

When assessing the potential visual effects of the development, the sensitivity of the visual receptor is weighed against the magnitude of the visual impact to determine the significance of the visual effect. Criteria outlined below are used to guide these judgements.

1.2.5.1 Sensitivity of Visual Receptors

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

A list of the factors considered by the assessor in estimating the level of sensitivity for a particular visual receptor is outlined below to establish visual receptor sensitivity at each viewpoint location.

1.2.5.2 Susceptibility of Visual Receptors to Change

In accordance with GLVIA3, visual receptors most susceptible to changes in views and visual amenity are:

- "Residents at home;

- People, whether residents or visitors, who are engaged in outdoor recreation, including use of public rights of way, whose attention or interest is likely to be focussed on the landscape and on particular views;
- Visitors to heritage assets, or to other attractions, where views of the surroundings are an important contributor to the experience;
- Communities where views contribute to the landscape setting enjoyed by residents in the area;
- Travellers on road rail or other transport routes where such travel involves recognised scenic routes and awareness of views is likely to be heightened".
- Visual receptors that are less susceptible to changes in views and visual amenity include;
- "People engaged in outdoor sport or recreation, which does not involve or depend upon appreciation of views of the landscape;
- People at their place of work whose attention may be focussed on their work or activity, not their surroundings and where the setting is not important to the quality of working life".

1.2.5.3 Values attached to Views

The value attached to a view is determined by considering the following:

- Recognised scenic value of the view (Development Plan designations, guidebooks, touring maps, postcards etc). These represent a consensus in terms of which scenic views and routes within an area are strongly valued by the population because in the case of County Developments Plans, for example, a public consultation process is required;
- Views from within highly sensitive landscape areas. These are likely to be in the form of Architectural Conservation Areas, which are incorporated within the Development Plan and therefore subject to the public consultation process. Viewers within such areas are likely to be highly attuned to the landscape around them;
- Primary views from residential receptors. Even within a dynamic city context, views from residential properties are an important consideration in respect of residential amenity;
- 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 a national or regional scale;
- Provision of vast, elevated panoramic views. This relates to the extent of the view on offer and the tendency for receptors to become more attuned to the surrounding landscape at locations that afford broad vistas;
- Sense of remoteness and/or tranquillity. Receptors taking in a remote and tranquil scene, which is likely to be fairly static, are likely to be more receptive to changes in the view than those taking in the view of a busy street scene, for example;
- Degree of perceived naturalness. Where a view is valued for the sense of naturalness of the surrounding landscape it is likely to be highly sensitive to visual intrusion by distinctly manmade features;
- Presence of striking or noteworthy features. A view might be strongly valued because it contains a distinctive and memorable landscape / townscape feature such as a cathedral or castle;
- Historical, cultural and / or spiritual significance. Such attributes may be evident or sensed by receptors at certain viewing locations, which may attract visitors for the purposes of contemplation or reflection heightening the sense of their surroundings;
- Rarity or uniqueness of the view. This might include the noteworthy representativeness of a certain landscape type and considers whether the receptor could take in similar views anywhere in the broader region or the country;
- Integrity of the landscape character. This looks at the condition and intactness of the landscape in view and whether the landscape pattern is a regular one of few strongly related components or an irregular one containing a variety of disparate components;

- Sense of place. This considers whether there is special sense of wholeness and harmony at the viewing location;
- Sense of awe. This considers whether the view inspires an overwhelming sense of scale or the power of nature.

Those locations which are deemed to satisfy many of the above criteria are likely to be of higher sensitivity, and no relative importance is inferred by the order of listing.

It is recognised that a viewer's interpretation and experience of the landscape can have preferential and subjective components. Where relevant, judgements are made on those elements of the landscape that are considered to contribute more prominently and positively to the visual landscape resource as well as those elements that contribute negatively. Overall sensitivity may be a result of a number of these factors or, alternatively, a strong association with one or two in particular.

1.2.6 Magnitude of Change – Visual

The magnitude of change is again a product of the scale, extent, or degree of change that is likely to be experienced as a result of the proposed development. This is directly influenced by its 'visual presence / prominence', as experienced by visual receptors in the landscape. These terms are somewhat quantitative in nature, and essentially relate to how noticeable or 'dominant' the proposal is within a particular view. Aside from the obvious influence of scale and distance, a development's visual presence is influenced by the extent and complexity of the view, contextual movement in the landscape, the nature of its backdrop, and its relationship with other focal points or prominent features within the view. It is often, though not always, expressed using one of the following terms: Minimal; Sub-dominant; Co-dominant; Dominant; Highly dominant. Criteria used to inform judgements are provided in Table 1.3.

Table 1.3 Magnitude of Change – Visual

Criteria	Description
Very High	Complete or very substantial change in view, dominant, involving complete or very substantial obstruction of existing view or complete change in character and composition of baseline, e.g., through removal of key elements.
High	A major change in the view that is highly prominent and has a strong influence on the overall view. This may involve the substantial obstruction of existing views or a complete change in character and composition of baseline, e.g. through removal of key elements or the introduction of new features that would heavily influence key elements.
Medium	Moderate change in view: which may involve partial obstruction of existing view or partial change in character and composition of baseline, i.e., pre-development view through the introduction of new elements or removal of existing elements. Change may be prominent but would not substantially alter scale and character of the surroundings and the wider setting. View character may be partially changed through the introduction of features which, though uncharacteristic, may not necessarily be visually discordant.
Low	Minor change in baseline, i.e. pre-development view - change would be distinguishable from the surroundings whilst composition and character would be similar to the pre change circumstances.
Negligible	Very slight change in baseline, i.e. pre-development view - change would be barely discernible. Composition and character of view substantially unaltered.

1.2.7 Significance of Effect

The significance of a landscape or visual effect is based on a balance between the sensitivity of the receptor and the magnitude of change, and is categorised as Profound, Substantial, Moderate, Slight, or Imperceptible. Intermediate judgements are also provided to enable an effect to be more accurately described where relevant. 'No Effect' may also be recorded as appropriate where the effect is so negligible it is not noteworthy.

The significance category judgement is arrived at using the Significance Matrix at Table 1.4 as a guide. This applies the principle of significance being a function of magnitude weighed against sensitivity, but employs slightly different terminology that avoids the potentially confusing use of the term 'significant' (as recommended by GLVIA3 Statement of Clarification 1/13 (Landscape institute, 10th June 2013)).

Indicative criteria descriptions used in relation to the significance of effect category are presented at Table 1.5.

Table 1.4 Significance Matrix

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

Table 1.5 Indicative significance of effect criteria descriptions

	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.
Substantial	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	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

	changes over some of the area or moderate changes in a localised area.	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.

It is important that the likely effects of the proposals are transparently assessed and understood in order that the determining authority can bring a balanced, well-informed judgement to bear when making a planning decision.

As such, whilst the significance matrix and criteria provide a useful guide, the significance of an effect is ultimately determined by the landscape specialist using professional judgement, and also in the context of occasionally using hybrid judgements to account for nuance.

Effects assessed as 'Substantial' or greater (shaded cells) are considered to be the most notable in landscape and visual terms, and may be regarded as 'Significant', albeit it is important to note that this is not a reflection on their acceptability in planning terms.

1.2.8 Quality of Effects

In addition to assessing the significance of landscape and visual effects, the quality of the effects is also determined. Within this LVIA, effects are described as negative/adverse, neutral, or positive/beneficial, and the following criteria has been used to guide these judgements.

- Positive/beneficial - A change which improves the quality of the environment, enhancing the existing view/landscape;
- Neutral - No effects or effects that are imperceptible, within normal bounds of variation e.g. will neither detract from nor enhance the existing view/landscape;
- Negative/adverse - A change which reduces the quality of the environment, detracting from the existing view/landscape.

In the case of new energy / infrastructure developments within rural and semi-rural settings, the landscape and visual change brought about by an increased scale and intensity of built form is seldom considered to be positive / beneficial. Effects in these contexts are generally considered to be adverse in nature, or neutral, where the effect has little influence on the landscape/views.

1.3 LANDSCAPE AND VISUAL POLICY CONTEXT AND DESIGNATIONS

1.3.1 Clare County Development Plan 2023-2029

1.3.1.1 Chapter 14 Landscape

A Landscape Character Assessment has been incorporated in Chapter 14, Landscape, of the Clare County Development Plan and indicates 26 different Landscape Character Types (LCTs), which are grouped into Upland Types, Lowland Types and Coastal Types. These LCTs are then used as the basis to determine 21 geographically distinct Landscape Character Areas (LCAs).

The site is located entirely within LCA 9 'River Shannon Farmland' and bordered to the north by LCA 8 'Slieve Bernagh Uplands'. These are the only LCAs within the study area. Within LCA 9, the proposed development is entirely contained within landscape character type RVF - 'River Valley Farmland' and is bordered to the north by Glacial Valley (GV) LCT, which falls within the northern half of the study area. Generally, LCT River Valley Farmland covers the majority of LCA 9 and the entirety of the site, while the GV is located within LCA 8 and noted for context only. Figure 1.2 and Figure 1.3 below, indicate the location of the Site in relation to the County Clare Landscape Character Types and Areas.

Following the Landscape Character Assessment Section (Section 14.2) is Section 14.3, which addresses 'Clare's Living Landscapes' and 'regards the landscape as something living – that changes and evolves in line with the changing needs of the community'. The Ballyglass Phase 1 and southwestern parcels of the Phase 2 Development, including the proposed development which is the subject of this report, are contained within the most robust 'Working Landscape' designation, of which there are two areas identified across the county. This part of the site is located within The Western Corridor - Ennis to Limerick Working Landscape. The northern extent of the study area overlays the 'Settled Landscape' classification. Finally, the third classification is 'Heritage Landscape', none of which are located within the study area. Figure 1.4 below indicates the location of the Site in relation to the County Clare Landscape Designations.

Settled landscapes are defined as 'comprise the network of farmland, villages and towns that make up the majority of the County. These landscapes are where the majority of the population live and work. They provide opportunities for enterprise, leisure and personal fulfilment', and 'also contain areas of concentrated development – called 'Working Landscapes' which are considered in more detail below.'

Within Section 14.3.2.1 Settled Landscapes, a number of general recommendations are outlined. Some of these have been deemed relevant to the proposed development and are included below:

CDP14.2 Development Plan Objective: Settled Landscapes

It is an objective of the Development Plan:

> *To permit development in areas designated as 'settled landscapes' to sustain and enhance quality of life and residential amenity and promote economic activity subject to:*
>
> *I. Conformity with all other relevant provisions of the Plan and the availability and protection of resources;*
>
> *II. Selection of appropriate sites in the first instance within this landscape, together with consideration of the details of siting and design which are directed towards minimising visual impacts;*
>
> *III. Regard being had to the need to avoid intrusion on scenic routes and on ridges or shorelines. Developments in these areas will be required to demonstrate:-*

a) That the site has been selected to avoid visual prominence

b) That the site layouts avail of existing topography and vegetation to reduce visibility from scenic routes, walking trails, water bodies, public amenities and roads.

c) That design of buildings and structures reduces visual impact through careful choice of forms, finishes and colours, and that any site works seek to reduce visual impact.

Working landscapes are defined as 'intensively settled and developed areas within Settled Landscapes or areas with a unique natural resource' and meet the 'Criteria for definition of the Western Corridor Working Landscape: All lands within 10km on either side of the N18/M18 – except as excluded by Heritage Landscapes.'

Within Section 14.3.2.2 Working Landscapes, a number of general recommendations are outlined. Some of these have been deemed relevant to the proposed development and are included below:

CDP13.3 Development Plan Objective: Western Corridor Working Landscape

It is an objective of the Development Plan:

To permit development in these areas that will sustain economic activity, and enhance social well-being and quality of life - subject to conformity with all other relevant provisions of the Plan and the availability and protection of resources;

That selection of appropriate sites in the first instance within this landscape, together with consideration of the details of siting and design, are directed towards minimising visual impact;

That particular regard should be given to avoiding intrusions on scenic routes and on ridges or shorelines. Developments in these areas will be required to demonstrate:

That the site has been selected to avoid visually prominent locations;

That site layouts avail of existing topography and vegetation to reduce visibility from scenic routes, walking trails, public amenities and roads;

That design for buildings and structures reduce visual impact through careful choice of form, finishes and colours and that any site works seek to reduce visual impact of the development.

There are designated 'Large Villages' of Clonlara and Ardnacrusha, and a variety of designated 'Clusters' within the study area. The site is overlaid as 'Rurals Areas Under Strong Urban Pressure'. There are two 'Strategic Regional Roads' within the study area, the R465 running north/south through the eastern section of the study area and the R463, which borders the Shannon Headrace Canal to Ardnacrusha. These are shown on Map C of Volume 2 of the County Development Plan 'Landscape Designations' and Map D 'Areas of Special Control', also within Volume 2.

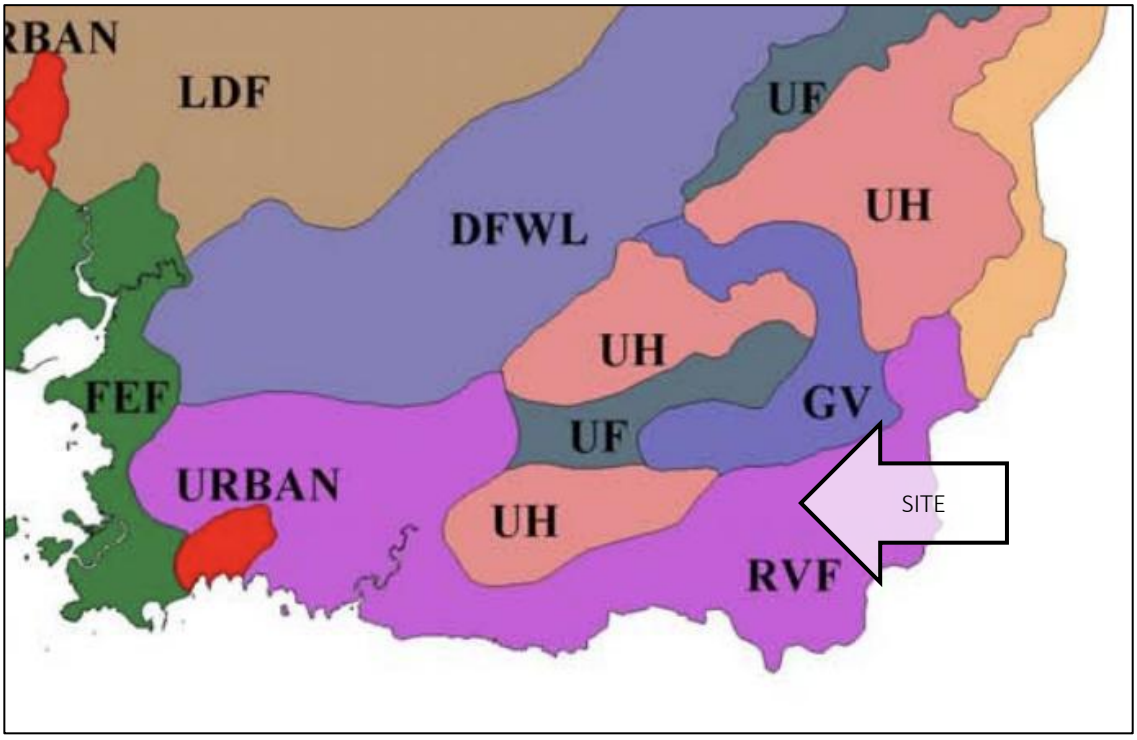

Figure 1.2 Excerpt from Clare County Landscape Character Assessment, map 14.1 showing approximate location of proposed development in relation to principal landscape character types.

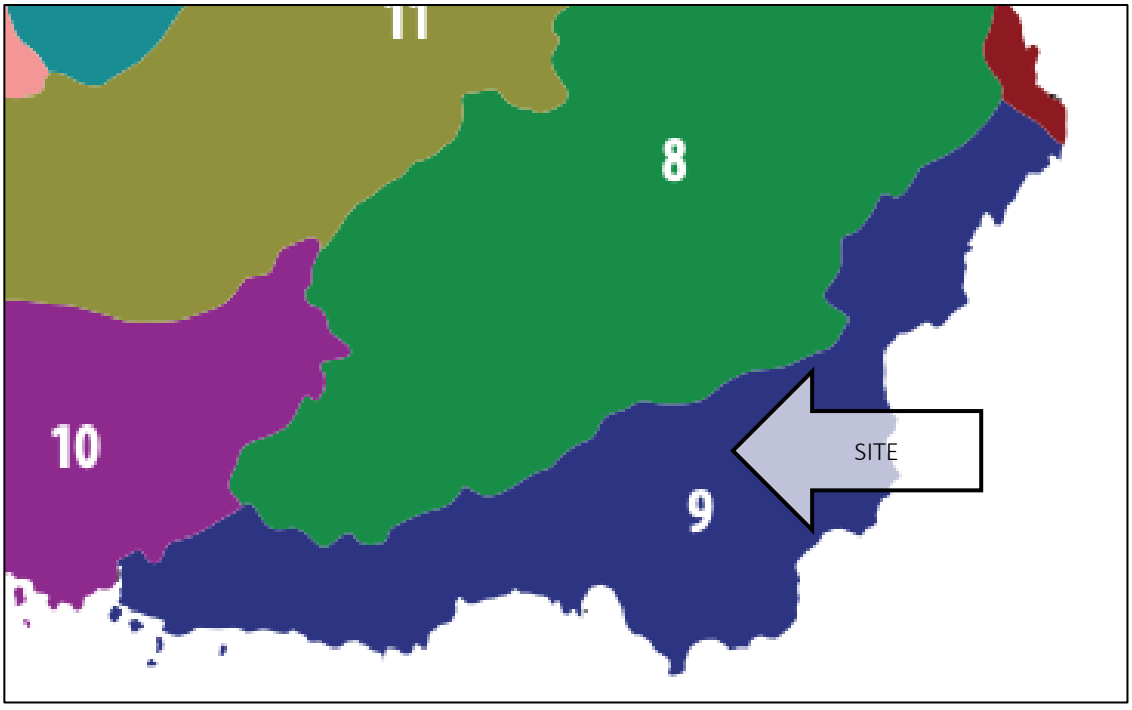

Figure 1.3 Excerpt from Clare County Landscape Character Assessment, map 14.2 showing approximate location of proposed development in relation to principal landscape character areas.

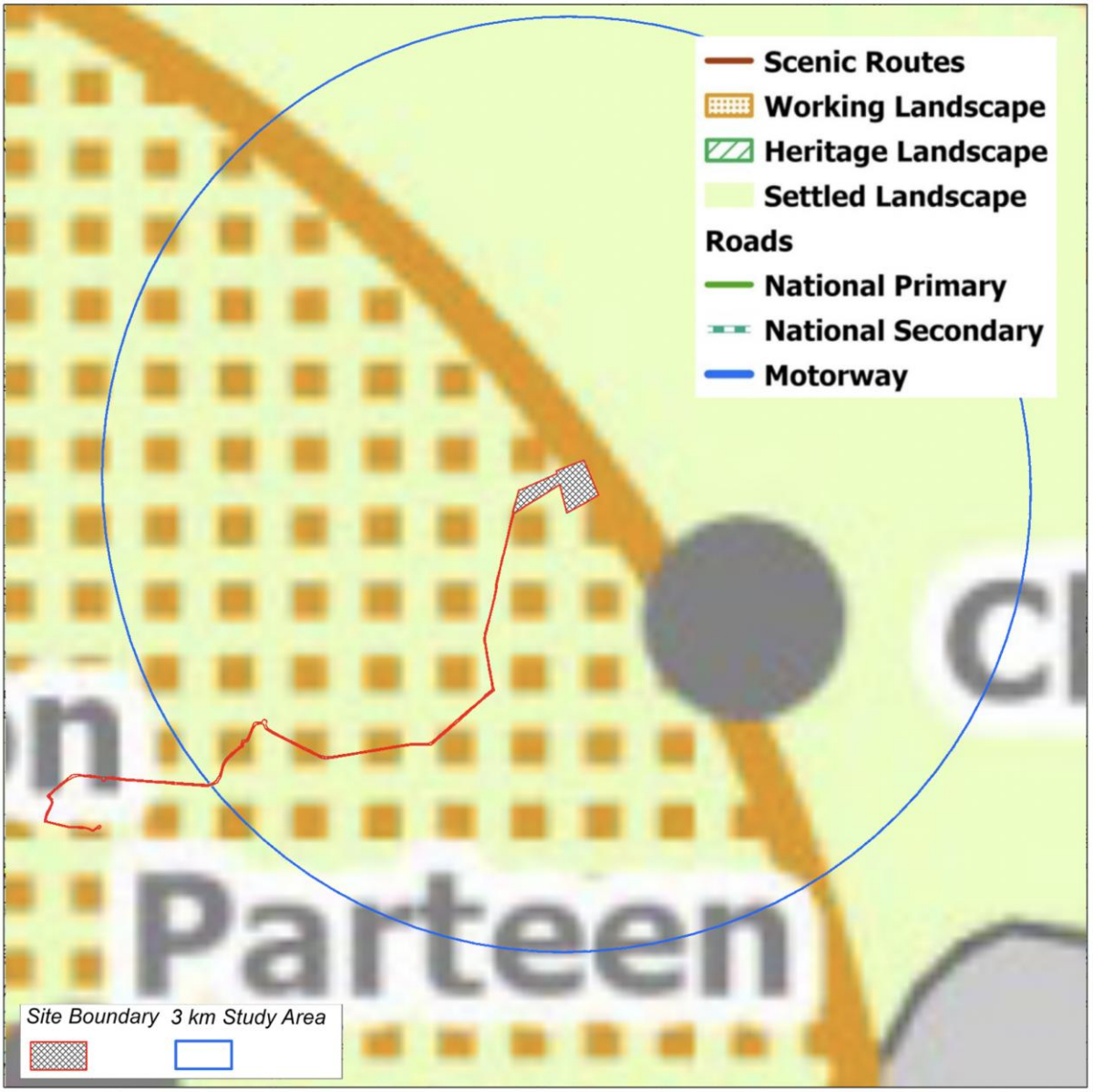

Figure 1.4 Excerpt from Clare County Development Plan, Map 14A. showing approximate location of proposed development in relation to the relevant living landscapes.

1.3.1.2 *Volume 5: Clare Renewable Energy Strategy 2023-2029*

Chapter 7: Solar Energy, within the Clare Renewable Energy Strategy Section includes Section 7.3 Assessments of Potential for Solar Farms, noting:

> *"There are currently no national guidelines in place to guide the location or scale of solar farms. Constraints may arise in relation to landscape impacts, protection of natural heritage or archaeology, or in relation to protecting the high value agricultural land suitable for tillage. Proximity to housing is another factor, although solar farms have limited external impacts beyond the site boundary"*

Within Section 7.3, is Map 7.2 showing 'Opportunity Areas'. The proposed development is primarily located across the low-level cumulative constraints area (yellow zoning).

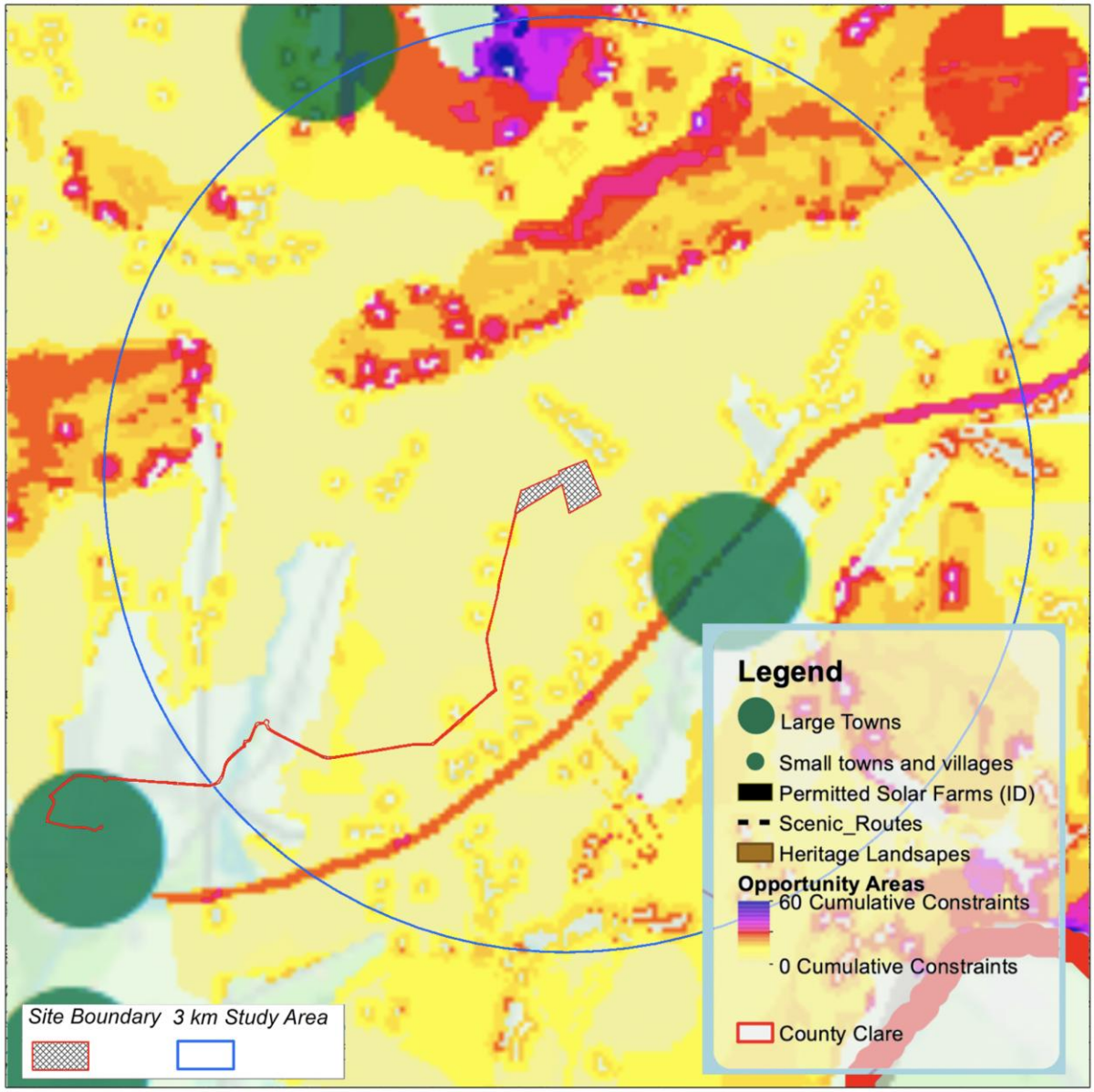

Figure 1.5 Excerpt from Clare County Development Plan, Map 14A. showing approximate location of proposed solar array site in relation to the relevant living landscapes.

Section 7.4 of the Renewable Energy Strategy outlines the following objectives with regard to commercial scale solar energy projects:

RES 7.1 Increase the penetration of commercial scale solar energy projects

It is an objective of Clare County Council:

A. To increase the penetration of utility scale solar energy development in appropriate locations.

B. To favourably consider the redevelopment of brown field sites for large solar PV projects.

C. To favourably consider the development of solar farms on agricultural lands which allow for farm diversification and multipurpose land use.

RES 7.2 Promote integration of solar energy

It is an objective of Clare County Council:

A. To promote and facilitate the use of solar technology across the County including schools, public offices and for infrastructure, e.g. traffic lights, streetlights, road information signage etc.

B. To promote the integration of solar energy into existing and planned developments, particularly commercial and industrial buildings with large roof areas.

C. To encourage the use of solar thermal or solar PV installations as part of the design and planning process for new developments and refurbishments.

1.3.2 Views of Recognised Scenic Value

Views of recognised scenic value are primarily indicated within Development Plans in the context of scenic views/routes designations, but they might also be indicated on touring maps, guidebooks, websites, road side rest stops or on post cards that represent the area.

1.3.2.1 Clare County Development Plan 2023-2029

Designated Scenic Routes throughout County Clare are identified in more detail on the maps contained in Volume 2 of the Clare CDP. They are also indicated on Map 14A in Chapter 14 and listed in Appendix 5 of the CDP.

Within Chapter 14 of the Written Statement, includes the following Development Plan Objective:

CDP14.7

It is an objective of Clare County Council:

a) To protect sensitive areas from inappropriate development while providing for development and change that will benefit the rural community;

b) To ensure that proposed developments take into consideration their effects on views from the public road towards scenic features or areas and are designed and located to minimise their impact; and

c) To ensure that appropriate standards of location, siting, design, finishing and landscaping are achieved.

As shown on Figure 1.4, above, there are no scenic routes within the study area. The nearest is Scenic Route 26: R466 between Broadford and O'Briensbridge, 4km north of the site.

1.4 EXISTING ENVIRONMENT

1.4.1 Landscape Baseline

The landscape baseline represents the existing landscape context and is the scenario against which any changes to the landscape brought about by the proposed development will be assessed. A description of the landscape context of the proposed development, wider solar farm and wider study area is provided below under the headings of landform and drainage, vegetation and land use, centres of population and houses, transport routes and public amenities and facilities. Although this description forms part of the landscape baseline, many of the landscape elements identified also relate to visual receptors i.e. places and transport routes from which viewers can potentially see the proposed development. The visual resource will be described in greater detail in 1.4.2.

1.4.1.1 Landform and Drainage

The central study area generally comprises a rolling lowland landscape, sloping towards the Shannon River and associated Headrace Canal, which feeds the Ardnacrusha hydro-power plant. These two waterways make up the some of the most notable landscape features within the study area, combining into one in the southwest of the site. At its nearest, the Canal is 700m southeast of the southernmost point of the proposed substation compound. The other watercourse near the site is the Blackwater River, which runs approximately north/south in the west of the study area, offset by approximately 1.5km from the nearest proposed substation, and crossed by the cable route in Ardnacrusha. The valley which the River Blackwater follows is the area classified as 'Glacial Valley' and is generally a gentle-sided feature leading into the upland areas of the Slieve Bernagh Uplands. The study area can generally be divided northeast to southwest along the Canal, with the landscape to the north rolling upwards to the wider upland areas to the northwest, while the southeast of the study area is dominated by a number of major and minor watercourses within low-lying landform. There is a low, linear hill generally aligned east/west across the north of the proposed development, which separates the site from the wider north of the study area.

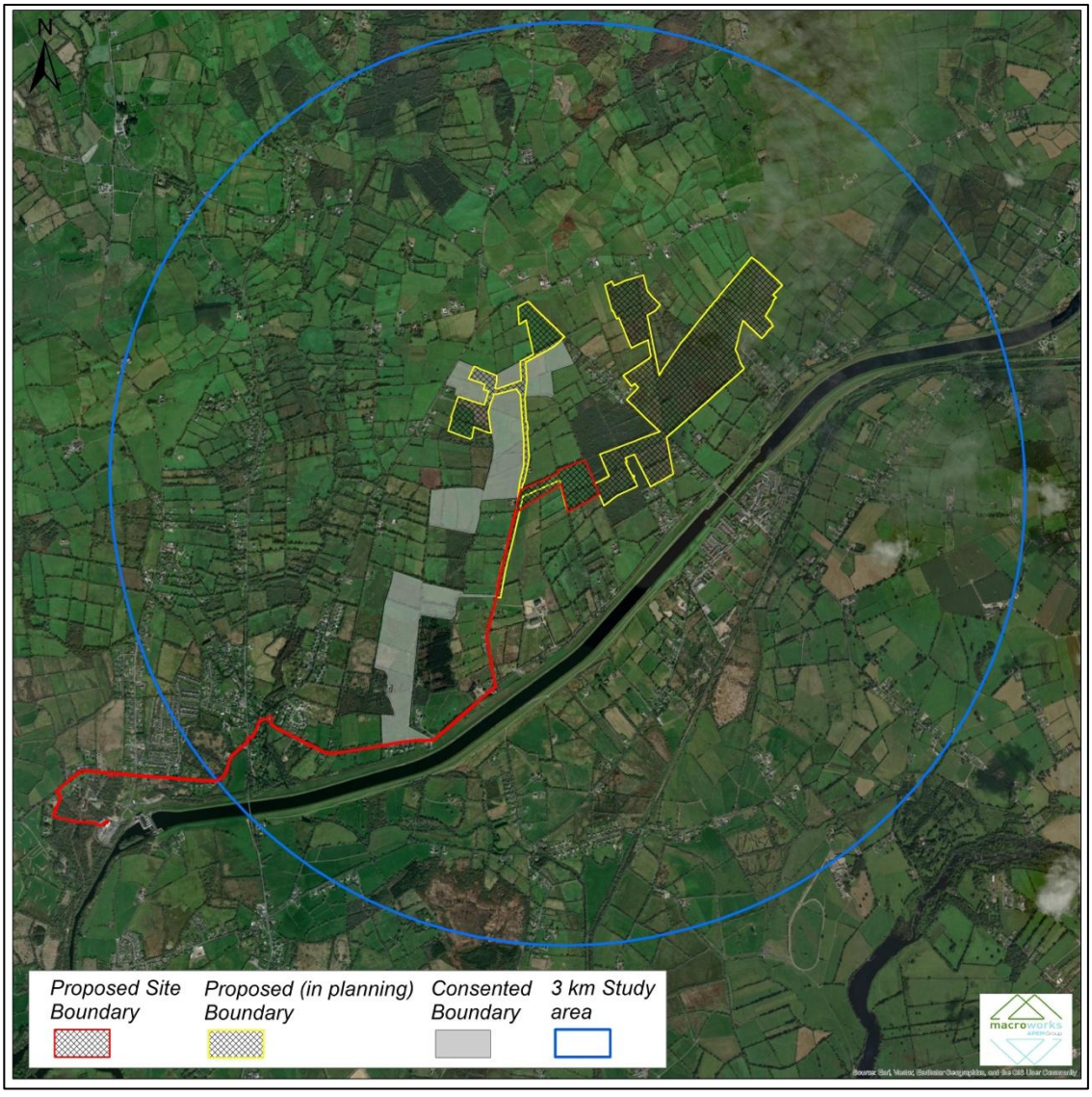

Figure 1.6 Landscape context of the site and central parts of the study area.

1.4.1.2 Vegetation and Land Use

The study area generally consists of lower-intensity agriculture comprising pasture, with a high frequency of treelined hedgerows. Similarly, the central study area features small to medium field sizes, varying away from the site to include large expanses of open pasture occasionally interspersed with woodland or forestry, in particular over the rolling hills to the north. The upland areas have higher proportions of tree cover, while the southern side of the canal is more variable, with narrow field boundaries and wider spacings/larger field sizes. The canal and associated infrastructure provide an overlay of energy generation through the wider landscape context, with the form and scale of both the canal and power station defining features of the immediate and wider study area. These are more intensive on the south of both waterways, where they blend into the main urban area of Limerick (out of the study area).

1.4.1.3 Centres of Population and Housing

The study area encompasses a number of small villages and cross-road settlements, albeit the most notable centre of population in relation to the site is that of Limerick City, the centre of which is situated 7km south of the proposal site. Although not located within the study area, it influences the character of much of the southern study area. The majority of development within the study area is located along the Shannon River and Canal in the south, east, and northeast of the study area. The nearest to the site is Cloonlara, 500m east on the far side of the Shannon Canal, while Ardnacrusha is located southwest from the site along the Shannon Corridor. There is a band of newer residences at Monaskeha Heights, between the site and the Shannon Canal, as well as Ruanard, to the south of the site. Otherwise, there is a consistent cover of farmsteads and small rural/residential properties across the study area, denser to the south and west than the northeast.

1.4.1.4 Transport Routes

In terms of major transport corridors, there are no national secondary roads or motorways through the study area, with the nearest being the M7 motorway located over c. 5km to the east of the site. The study area is, however, traversed by a variety of regional roads. The R471 is the nearest of these, passing northeast of the site at Dromintobin. The R463 runs along the south of the site, parallel with the Shannon Canal c.500m south of the proposed substation compound at its nearest point. The R465 runs north/south 1.5km west of the proposed substation, and is crossed by the proposed grid connection at Parkroe, Ardnacrusha. The central south and east of the study area are contained on either side by the Shannon waterways and, therefore, are not highly connected other than a network of local roads which service the residences and towns listed above. The connectivity across the study area is denser to the south and (central) west than the northeast.

1.4.1.5 Tourism, Heritage and Public Amenities

The most notable recreation feature surrounding the site is the walkways along sections of the Headrace Canal, such as the Lough Derg Way. There is a selection of local amenity features throughout the study area, with Cloonlara GAA club located 1km southeast of the proposed substation. Ardnacrusha Hydro Station is a site of more recent interest, located 3.5km southwest of the proposed substation compound. There are a number of protected structures throughout the study area, with clusters to the north focused on both modern and historic canals, bridges and slipways. Within the Cloonlara area, there are multiple protected houses and Churches; these generally do not have major tourism features associated with them but rather serve to contribute historic overlays and character to the landscape and, therefore, are noted here. The full number and location of these features are identified on Maps I8 and I12 of the Clare County Development Plan.

1.4.2 Visual Baseline

Only those parts of the receiving environment that potentially afford views of the proposed development are of concern to this section of the assessment. The permitted Ballyglass Solar Farm and proposed Ballyglass Solar Farm Phase II are excluded except in terms of the cumulative visual impact assessment which is presented in 1.7 below. A comprehensive visual baseline and impact assessment is provided in its respective planning application to Clare County Council (Reference: 22591 and Reference: 2460485, respectively). A computer-generated Zone of Theoretical Visibility (ZTV) map has been prepared to illustrate where the proposed development is potentially visible from. The ZTV map is based solely on terrain data (bare ground visibility), and ignores features such as trees, hedges or buildings, which may screen views. Given the complex vegetation patterns within this landscape, the main value of this form of ZTV mapping is to determine those parts of the landscape from which the proposed development will definitely not be visible, due to terrain screening within the 3km study area.

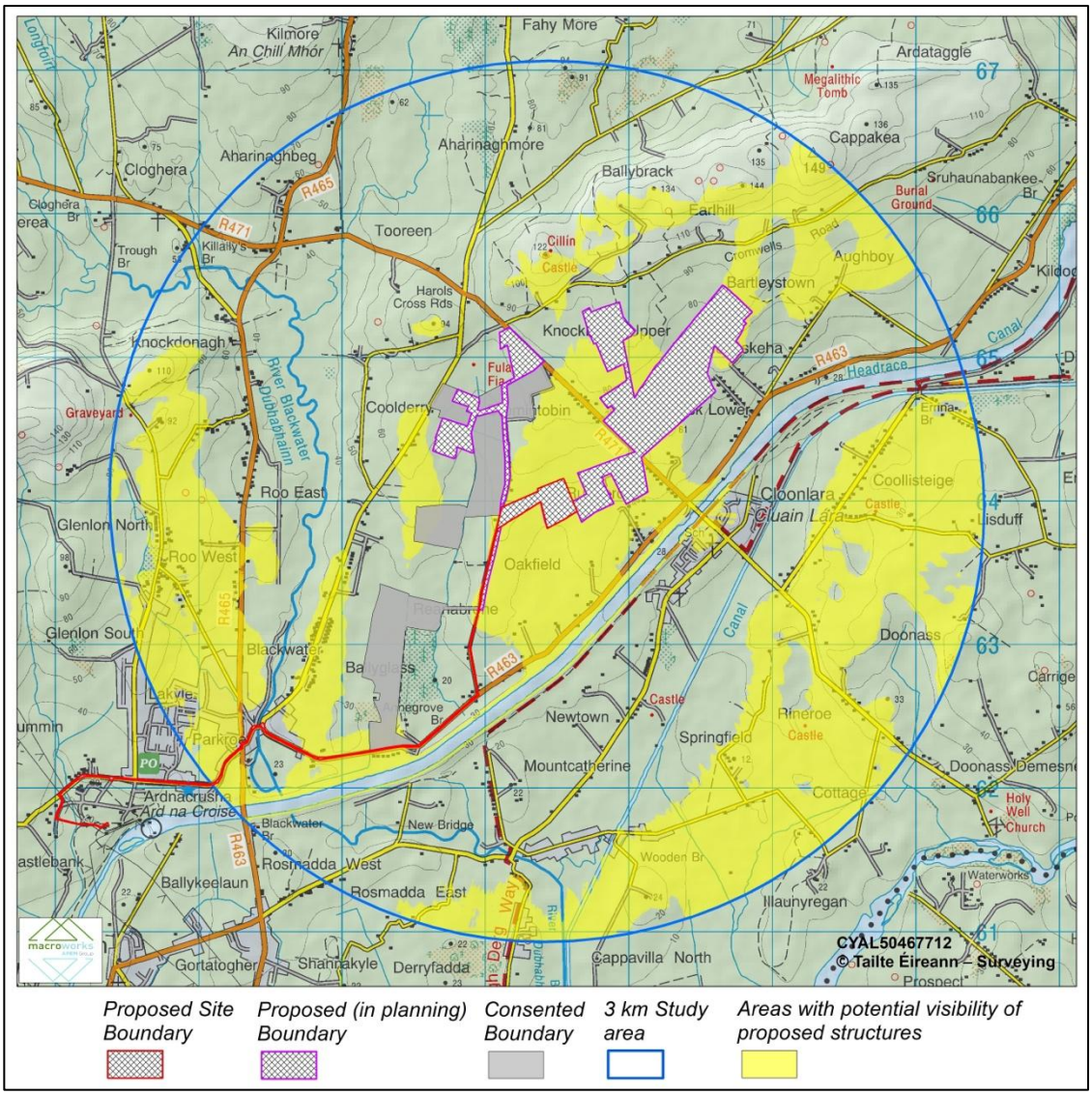

Figure 1.7 Standard (bare-ground) ZTV map

The following key points are illustrated by the 'bare-ground' ZTV map (see Figure 1.7 above):

- Due to the terrain screening from the surrounding rolling lands both north and south of the proposed development, theoretical visibility pattern is fragmented across the study area, contained to the immediate surrounds of the site and some of the surrounding rolling hills.
- In the immediate surrounds of the site, visibility is contained to the north, east and south, extending to 1km from the proposed substation. Between the local road to the west of the site to the R465, visibility is limited by landform screening. There is a small area at Coolderry, and another to the south at Ballyglass, but the largest cohesive area in the western study area is contained to the far side of the R465 at Ardnacrusha north to Roo West, 2-3km from the proposed development.
- In the northern study area, intermittent visibility is shown over the rolling rural landform between Knockbrack Upper and Earlhill but is predominantly screening in the wider study area.
- In the eastern and southern study area, theoretical visibility is offset from the proposed development by the canal, with only the wider (1.5-3km) extent of the study area showing potential for theoretical visibility.

The most important point to make in respect of this 'bare-ground' ZTV map is that it is theoretical. Whilst some of the proposed substation buildings comprises of larger built forms as well as 2 no. interface towers, the surrounding landscape is heavily vegetated and will result in the proposed substation development being screened and softened by surrounding and intervening hedgerow vegetation, trees and numerous buildings, walls and embankments scattered throughout the study area.

1.4.2.1 Identification of Viewshed Reference Points as a Basis for Assessment

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

- Key Views (from features of national or international importance) (KV);
- Designated Scenic Routes and Views (SR/SV);
- Local Community views (LCV);
- Centres of Population (CP);
- Major Routes (MR);
- Amenity and heritage features (AH).

VRP's might be relevant to more than one category and this makes them even more valid for inclusion in the assessment. The receptors that are intended to be represented by a particular VRP are listed at the beginning of each viewpoint appraisal. The Viewshed Reference Points selected in this instance are set out in the Table 1.6 and Figure 1.8 below and are typically representative of local community receptors in the surrounds of the site. Whilst some other areas within the surrounding study area have the potential to afford views of the development as per the ZTV above, it is considered that the below viewpoints have the most notable potential to afford clear visibility of the development due to the surrounding land form and vegetation.

Table 1.6 Outline Description of Selected Viewshed Reference Points (VRPs)

VRP No.	Location	Representative of	Direction of view
VP1	R471 at Dromintobin North	MR, LCV	SW

VP2	R471 at Dromintobin	MR, LCV	W
VP3	L70382 local road at Oakfield/Dromintobin North	LCV	E
VP4	L70382 local road at Oakfield/Dromintobin North	LCV	E

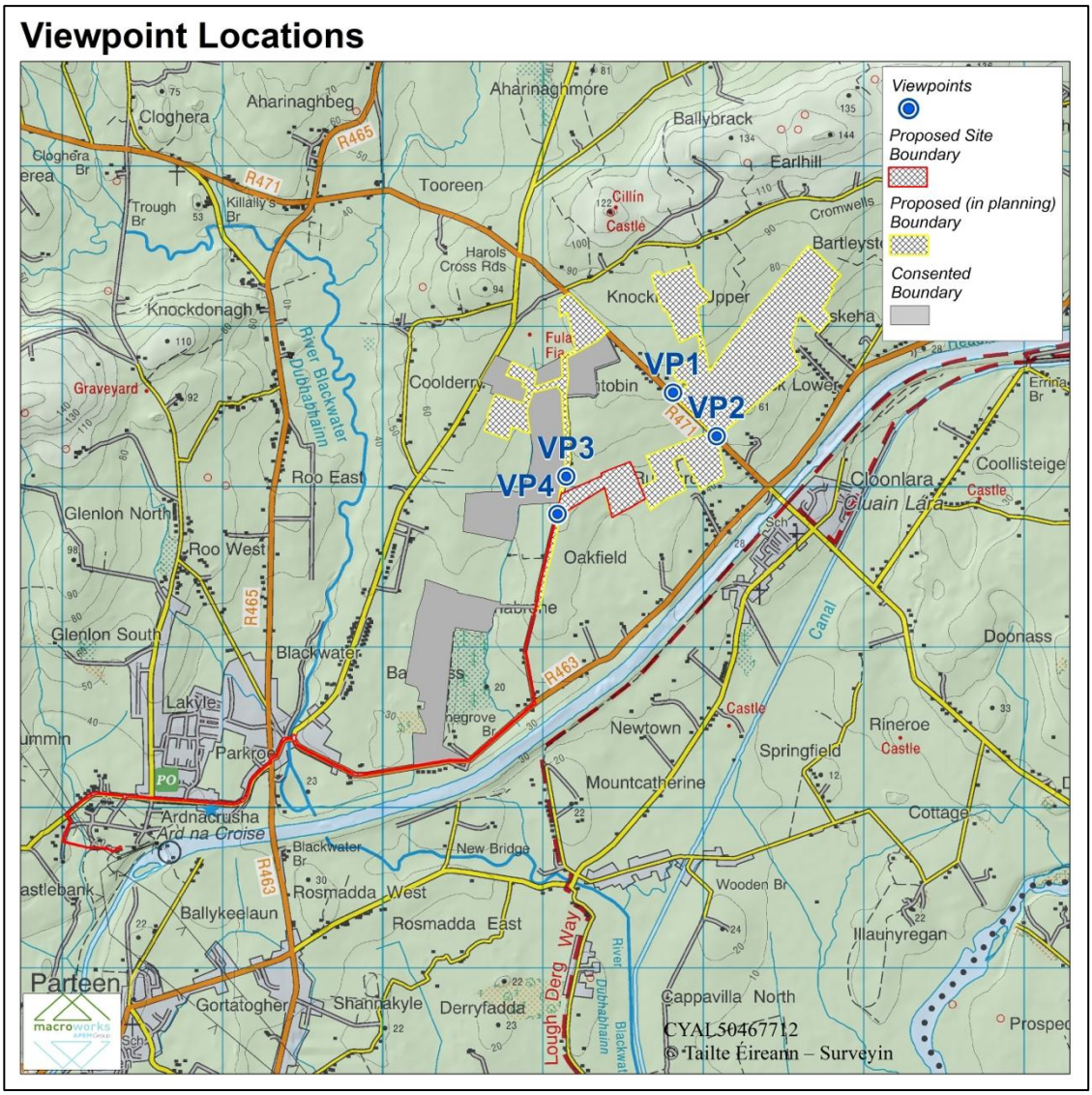

Figure 1.8 Viewpoint location map

1.5 MITIGATION AND RESTORATION MEASURES

The main mitigation by avoidance measure employed in this instance is the siting of the proposed development and wider solar farm in a robust rolling rural area that avails of a high degree of vegetative screening, so that the proposed development and wider solar farm will not be a highly prominent feature within the surrounding landscape.

In addition to mitigation by avoidance measures, retention of existing hedgerow boundaries within and around the site aids visual screening, and maintains the existing field pattern. In this respect, the proposed development is not perceived to impose itself on the existing landscape pattern.

In addition to retaining the existing hedgerows within the site, it is also proposed to bolster existing perimeter and internal hedgerows with under-planting and inter-planting of whip transplants (i.e. Hedgerow Type 1 - see Figure 1.9 below) in order to ensure dense and consistent screening of the site in perpetuity. This will be undertaken where required to thicken and fill gaps in the existing hedgerow network prior to the construction phase, thus allowing for any growth in the period between a grant of planning permission and construction of the development. Advanced nursery stock in the form of 8-10cm girth trees will be used to fill any noticeable gaps and plant species will be selected to complement the existing broadleaf hedgerow species mix around the site and will be of local provenance. Where not already exceeded by existing vegetation, it is intended to manage hedgerows up to 3-4m in height. This height will be achieved by a combination of allowing lower sections of existing hedgerows to mature, filling obvious gaps with advanced nursery stock and providing an additional line of whip planting to selected hedgerows that require densification. Refer to the Landscape Mitigation Plan LD.BLLGLSS_SID for details of additional hedgerow bolstering included in the proposed SID application, and LD.BLYGLSS_II-SLR for the details of proposed mitigation associated with Ballyglass Solar Farm Phase II.

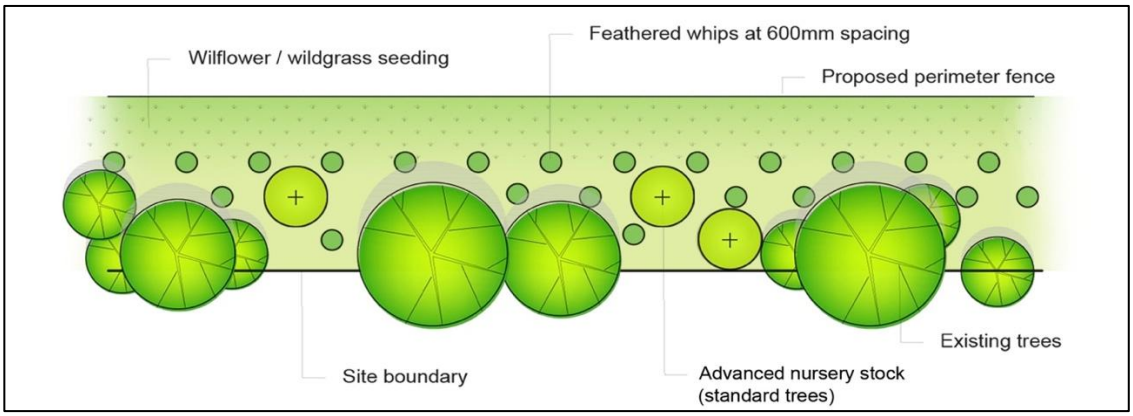

Figure 1.9 Hedgerow Type 1: indicative boundary planting detail showing the approach to inter-planting and under-planting of existing hedgerows (where consolidation is needed).

As a part of the proposed mitigation included in the Ballyglass Solar developments (Phase I + Phase II), it is also proposed to plant several sections of new 'Type 2' hedgerows (Figure 1.10 refers), with whips and a high proportion of advance nursery stock trees (c.3m planted height), along the boundaries of some of the proposed solar parcels to further screen the permitted and proposed solar developments from some of the nearest surrounding receptors (refer to Landscape Mitigation Plan drawing package LD.BLYGLSS_II-SLR). All of this planting will be allowed to mature up to a maintained height of 3-4m to aid in the screening and softening of the proposed development and wider solar farm from nearby dwellings and surrounding local, regional and national roads.

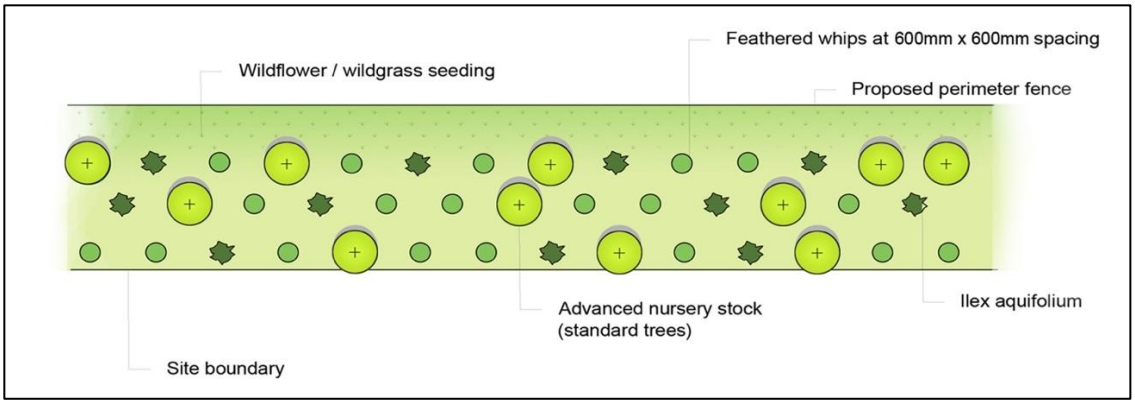

Figure 1.10 Indicative boundary planting detail showing the introduction of new boundary hedgerow TYPE 2

1.6 IMPACT ASSESSMENT

1.6.1 Do-nothing scenario

The '*do-nothing*' impact refers to the non-implementation of the proposed development. The primary effect of this would be that the impacts and effects identified would not directly occur. In this regard the following issues are relevant. The site, which is currently contained in pastoral farmland, would likely be managed for typical agricultural practices, whilst the surrounding perimeter vegetation would continue to grow out, some of which would be maintained by the current landowners.

1.6.2 Assessment of Receptor Sensitivity – Landscape

Landscape value and sensitivity are considered in relation to a number of factors highlighted in the Guidelines for Landscape and Visual Impact Assessment 2013, which are set out below and discussed relative to the proposed development site and wider study area.

This is a pleasant, productive rural landscape, interspersed with variable areas of residential use and higher-intensity agriculture. The central study area and three boundaries of the site itself are hemmed by moderately populated roads but covered by highly vegetated and intact smaller field systems. The site and its immediate surroundings are typically flat to low rolling, sloping down from the glacial upland areas to the north down towards the Shannon River Corridor. There are a variety of smaller drainage channels and one small stream across the site itself, while the main features in the wider landscape are a mix of constructed and natural waterways, resulting in an additional layer of anthropogenic use, in particular, energy supply. The largest of these is the Headrace Canal, which draws from the main flow of the Shannon River south of Lough Derg (outside the northern periphery of the study area) and the associated power plant at Ardnacrusha (southwest of the site). The canal and associated embankment contain the landscape to the south of the site boundary, while to the west, the landform slopes towards the River Blackwater. Intensive agriculture is the primary land use within the study area, which comprises small to medium-sized geometric fields generally bound by a mix of dense mature tree-lined hedgerows and areas of low-clipped scrubby hedgerows. The northern section of the study area transitions to less intensive upland areas. At the same time, the south (with associated proximity to a major centre of population) is more intensive, with numerous villages and the periphery of a large urban area (Limerick). The site is bordered to the southeast by one of the few areas of mixed woodland and conifer forestry in a landscape where vegetation is generally confined to linear corridors. These corridors are, however, highly frequent and often unclipped, which results in a sense of enclosure and increased rural amenity where there are windows through.

The landscape character of the study area is that of a typical productive rural landscape that is not particularly rare or distinctive at a national or regional scale, aside from the presence of the canal, with associated energy overlays and a relatively high degree of intactness of the hedgerows and field boundaries. This is reflected in the Clare County Development Plan, where the site is wholly located in the LCA 9 'River Shannon Farmland' and LCT 24 'River Valley Farmland'. Additionally, the presence of the living landscape 'Working landscape' overlay indicates that the values and character of the landscape are connected to it being a productive landscape with ongoing evidence of human activity and industry. The wider context of the site within the greater study area features 'settled landscapes' that are more representative of the populated rural areas surrounding the site. There are no Heritage Landscapes within the study area or its immediate periphery. Therefore, the site and wider study area can be deemed as a transition between the working and settled landscapes outlined in the county development plan.

Overall, this is considered a typical low-rolling landscape that combines several rural land uses, including agriculture, residential development and electrical infrastructure. Whilst the study area has some localised sense of scenic amenity, overall, this is a traditional (relatively intact) working landscape that has values mainly associated with rural productivity and maintaining the character of the wider farmed river corridor.

Therefore, on balance of these factors and in accordance with the criteria outlined in in Table 1.1, the landscape sensitivity is deemed to be **Medium-low** within the study area with localised areas of higher sensitivity in the immediate surrounds of the River Lee corridor. This sensitivity classification aligns with the classification identified in the submitted solar development LVIA (Clare planning ref: 246048)

1.6.3 Assessment of Receptor Sensitivity – Visual

The more elevated and scenic parts of the surrounding landscape are typically identified by the presence of scenic routes and view designations. In this instance, there are no designated scenic routes within the study area, the nearest scenic designation is contained to the north of the study area, designated Scenic Route 26: R466 between Broadford and O'Briensbridge. It is important to note that while this route generates a degree of scenic amenity, many of these views present with a longstanding sense of human intervention on the landscape and are influenced by an array of working and highly anthropogenic land uses such as major route corridors, quarries and urban settlements. The study area also comprises some locally susceptible areas that are afforded a strong sense of containment, such as the Shannon River corridor, which is noted for its recreational and naturalistic values. These parts of the landscape are typically highly susceptible to change and range in sensitivity between Medium to High-medium depending on their influence from other surrounding landscape areas.

Views of the working agricultural landscape are generally pleasant in terms of its rolling pastoral aesthetic and 'green', settled working character. The network of hedgerows and vegetation throughout it contributes to some sense of naturalness and, combined with its undulating topography, generates a sense of containment across much of the central and wider study area. However, whilst a pleasant pastoral aesthetic is noted throughout some parts of the study area, as noted above, the surrounding local and wider landscape is also influenced by an array of anthropogenic features such as major transport routes, urban settlements, and industrial development. Overall, the sensitivity of visual receptors within the more typical working landscape context tends to range between Medium and Medium-low, with those of a Medium sensitivity representing more open expansive views across the wider landscape.

Key differentials in terms of visual receptor sensitivity relate to the occupation of the visual receptor and whether views of the surrounding landscape are an inherent part of the experience. Static residential receptors are considered generally more susceptible to changes in views over those where views are experienced transiently by those travelling through the landscape, particularly on major transport routes where road infrastructure and traffic volume draw from visual amenity. Likewise, receptors located in closer proximity to the site are considered more susceptible to changes in views over those where views are experienced at a distance.

On the basis of the site-specific factors outlined above and in accordance with the general visual receptor sensitivity considerations contained in the methodology Section 1.2.5, visual receptor sensitivity judgement are provided for each representative viewpoint in the table below in section 1.6.7 below.

It is important to note that these visual receptor sensitivity classifications align with the classifications identified in the submitted solar development LVIA (Clare planning ref: 2460485)

1.6.4 Magnitude of Landscape Effects – Construction Stage

In terms of physical landscape effects, the proposed development will require some localised excavation works to facilitate the foundations of the proposed IPP control building, interface towers and other ancillary electrical infrastructure equipment. The access tracks to the proposed development utilise those included within the Ballyglass II proposal (Clare planning ref: 2460485), and therefore landscape impacts at the construction stage relate to the minor increase in proposed hedgerow removal to accommodate the cut/fill required along the access tracks outlined as a part of this development. These sections of internal access/service tracks will be similar in nature to farm tracks that can be found throughout this rural context. The proposed substation will require minor reprofiling of the terrain within the substation compound resulting in some localised areas of cut and fill as well as removal of the prevailing grassland land cover. The proposed development will be accessed for both the construction and operational phases by means of an entrance from the local road to the west of the substation compound. The construction compound for the proposed substation is located along the access track, to the west of the proposed substation, and will require similar remodelling and localised cut and fill, however over a reduced area, which is relevelled and left to naturalise following completion of construction.

In terms of physical construction stage landscape effects for the wider project, the proposed solar farm will not require any significant excavation that would permanently alter the landform of the site. Some sections of new internal access/service tracks will be constructed to service the site and these will be similar in nature to farm tracks that can be found throughout this rural context.

Within the boundary of the proposed development, the Proposed Ballyglass Solar Farm (Phase II) application includes for the removal of some c. 25 linear meters of existing hedgerow required to facilitate the construction of access track throughout the proposed solar parcels. Notwithstanding the above areas of removal, this will be offset by the planting of new native hedgerow (outside of the SID application boundary) and the bolstering of some c.1,400 linear metres. As noted above, the removal of hedgerow to facilitate the SID substation is limited to 3 linear m, where it is proposed to add levelling batter to the access track. Overall, there is an additional c. 175m of proposed bolstered hedgerow, with no further removal or new hedgerow planting required as part of the proposed 110kV substation development as it is wholly contained within the parcels that form part of the proposed solar farm application.

All substation and grid connection works will be carried out in accordance with international best practice and full compliance with health and safety requirements. Construction of the proposed substation is estimated to take 24 months to complete. Construction related effects are, therefore, brief in nature and will only result in short-term landscape and visual impacts. Overall, the magnitude of construction stage effects is deemed Medium.

Combined with the Medium-low landscape sensitivity of the study area, the significance of construction stage effect is deemed Moderate-Slight and of a Negative quality.

It is important to note that these effects align with the landscape effects identified in the submitted solar development LVIA (Clare planning ref: 2460485).

1.6.5 Magnitude of Visual Effects – Construction Stage

During construction, the main visual impacts will arise from frequent heavy vehicle movements and worker vehicles travelling to and from the site and using the site entrance. In addition, there will be construction machinery on site, which may rise above intervening vegetation and buildings. There will also be some localised stockpiles of stripped topsoil, construction materials awaiting use and a small construction compound located on the site. There is also likely to be tower cranes erected on site to facilitate the construction of the proposed 110kV substation, which will likely be visible over a wider area than the substation development itself.

However, aside from the site's immediate vicinity, a large part of this short-term activity within the site will remain screened and partially screened from view the surrounding mature layers of intervening vegetation. Furthermore, construction-related activity is short-term in nature and will cease once the development becomes fully operational. Thus, construction stage impacts are likely to result in a visual effect no greater than Medium in the immediate surroundings of the site.

Coupled with the Medium and Medium-low visual receptor sensitivities in the immediate surrounds of the site, the construction stage visual impacts in the immediate vicinity of the site will be no greater than Moderate and will reduce considerably beyond 500m-1000m from the site, where the proposed development will be heavily screened. As a result, construction stage visual impacts are not considered to be significant.

It is important to note that these effects align with the visual effects identified in the submitted solar development LVIA (Clare planning ref: 2460485).

1.6.6 Magnitude of Landscape Effects – Operational Stage

There will some very localised physical landscape effects in the immediate context of the proposed substation compound, however, for the most part, the terrain of the site will remain largely unaltered. In fact, the proposed landscape mitigation measures, which comprises the enhancement (bolstered) existing hedgerow, will generate some localised positive landscape effects during the operation phase of the proposed development.

Whilst the wider solar farm will be decommissioned after 35 years, the proposed substation and grid connection will remain as part of the electricity transmission network, and thus, landscape effects generated by the proposed substation development are deemed Permanent in terms of duration. It is important to note that existing electricity cables and pylon structures are characteristic features of this rural landscape, and thus, the introduction of the proposed substation and interface masts represents the intensification of an established land use as opposed to the introduction of a new and unfamiliar one. Furthermore, due to the relatively contained nature of the SID substation development, there will be limited parts of the study area that will afford visibility of the proposed substation, as evidenced in the ZTV above (refer to Figure 1.7). Thus, the limited visibility of the proposed substation development and wider solar farm will heavily diminish the development's potential to alter the surrounding landscape character.

Aside from landscape impacts generated from construction of the proposed substation, the operational landscape impacts from the proposed solar farm are, for the most part 'reversible'. The native hedgerows within and around the site, which will have consolidated as part of the mitigation strategy, will remain as an enduring and positive legacy of this proposed development.

On the basis of the factors discussed above it is considered that the magnitude of operational stage landscape effect is Medium within the immediate vicinity, being those lands contained within approximately 500m of the proposed development. Thereafter, the magnitude of the operational stage landscape impact is deemed to reduce to Low and Negligible, as the proposed development becomes a progressively smaller component of the overall landscape fabric.

With reference to the significance matrix (Table 1.4) above, the **Medium-low** landscape sensitivity judgement attributed to the study area, coupled with a **Medium** magnitude of landscape effect in the immediate vicinity (<500m) of the proposed development is considered to result in an overall significance of no greater than **Moderate-slight**, with the remainder of the 5km radius study area likely to experience **Slight** or **Imperceptible** landscape impacts.

It is important to note that these effects align with the landscape effects identified in the submitted solar development LVIA (Clare planning ref: 2460485).

1.6.7 Magnitude of Visual Effects – Operational Stage

The assessment of visual impacts at each of the selected viewpoints is aided by photomontages of the proposed development. Photomontages are a 'photo-real' depiction of the scheme within the view utilising a rendered three-dimensional model of the development, which has been geo-referenced to allow accurate placement and scale. For each viewpoint, the following images have been produced (where visible):

1. Existing view;
2. Outline view (coloured outlines showing the extent of the proposed solar farm phases and the proposed substation including all associated overground works overlaid on the photograph);
3. Montage view;
4. Montage view with mitigation established.

VP NO.	EXISTING VIEW	VP SENSITIVITY	VISUAL IMPACT MAGNITUDE (PRE & POST MITIGATION)	PRE MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT	POST MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT
VP1	**R471 at Dromintobin North:** This is a highly contained view which is representative of the regional road and residences. There is a high degree of vegetation and walled road frontages of the adjacent residences between the viewer's location and the visibility of the wider landscape. However, this viewpoint is a slightly elevated snapshot through the vegetation to the wider landscape. This section of the R471 features smaller lots of private residences. Visibility is generally limited to the wider landscape along the road corridor. However, there is potential for broader views from the adjacent residences.	Medium-low	The proposed substation and grid connection will not be visible from here, due to landform and vegetation screening. The proposed solar farm is also highly screened by the raised setting of the surrounding residences and the residences themselves. However, there are glimpses of the top of panels visible to the northeast (outside of the depicted view), while the southern and western sections of the proposed solar development are fully screened. From the R471, the proposed solar farm is unlikely to be discernible to the casual observer and will have no impact on the visual amenity of this scene. However, from the perspective of surrounding residences, the visible extent of the proposed solar farm has the potential to be much wider. Additionally, the road users who are local residents will be more familiar with the landscape and surrounding land uses. Therefore, on balance, prior to mitigation, the magnitude of visual impact is deemed to be **Medium-low**. It should be noted that the proposed 110kV substation will not be visible. Following mitigation, the proposed development will be entirely screened from the road corridor, albeit, there is still some potential for views of panels to be afforded from the 1st floor rear windows of the neighbouring dwellings. Therefore, the magnitude of impact is reduced to **Low**, limited to partial visibility	Moderate-slight / Negative / Medium-term	Slight / Negative / Long-term

VP NO.	EXISTING VIEW	VP SENSITIVITY	VISUAL IMPACT MAGNITUDE (PRE & POST MITIGATION)	PRE MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT	POST MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT
			of the solar farm, while the proposed 110kV substation is not visible.		
VP2	R471 at Dromintobin: This is a relatively open view for this section of the R471, located within fields that separate the cluster of residences to the north, at VP1 and those to the south, at Dromintobin. The view is representative of the adjacent regional roads and residences. There is a high degree of vegetation across the view. However, both sides of the road corridor feature mid to long-range views across fields. To the north, views are more open, looking across a large, triangular-level field slightly uphill. In contrast, to the south, the field and open area of the view are smaller, with the surrounding trees enclosing the view.	Medium-low	The proposed substation and grid connection will not be visible from here, due to landform and vegetation screening. The proposed panels are viewed at a near distance at this location: c.10m to the south, c.50m to the north. The primary views of the southwestern cluster will occur when road users move south along the R471, with a brief view of the back of the panels, which obscures views of the wider landscape. Views of the larger parcel to the north will be longer duration, gradually revealed as users travel north. The proposed panels will be clearly visible and will occupy a considerable extent of the fore-to-middle ground context of the view. However, they are offset from the road corridor and at a slightly lower elevation than the surrounding road corridor. This results in views over and across the face of the panels, revealing the extent of the development. Consequently, the array is considered to have a dominant visual presence in this broad but brief vista. The built tone and texture will notably contrast with those of the rolling farmland and surrounding hedgerow vegetation. The proposed development will result in a marked increase in the intensity of built development in this rural view and will detract from the low-intensity pastoral quality of the scene.	Moderate / Negative / Medium-term	Slight-imperceptible / Negative - neutral / Long-term

VP NO.	EXISTING VIEW	VP SENSITIVITY	VISUAL IMPACT MAGNITUDE (PRE & POST MITIGATION)	PRE MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT	POST MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT
			Due to the difference in level between the viewer and the site, the degree to which the proposed development blocks obstruct or foreshorten the distant views towards the surrounding landscape is limited to the north. However, the wide-open views of pasture will no longer be present. Conversely, the views to the south will be foreshortened by the proposed panels. For the reasons outlined above, prior to mitigation, the magnitude of visual impact is deemed **High-medium**. The proposed substation and grid connection will not be visible from here. With the addition of the proposed mitigation, the site will be screened from the road corridor at this location and limited to temporary glimpses at other such gateways. The degree of enclosure through vegetation is consistent with much of the surrounding road corridor and will not appear out of place. While there may be partial views through the hedgerow, these will be relatively minor inclusions. Consequently, the magnitude of impact post mitigation is deemed to be **Low-negligible**, primarily owing to the increased enclosure.		
VP3	**L70382 local road at Oakfield/Dromintobin North:** This viewpoint is located at the end of paved surface along the L70382,	**Medium-low**	The proposed Ballyglass Solar Phase II development and the proposed 110kV substation and grid connection are entirely screened from this location.	**Imperceptible / Neutral / Medium-term**	**Imperceptible / Neutral / Long-term**

VP NO.	EXISTING VIEW	VP SENSITIVITY	VISUAL IMPACT MAGNITUDE (PRE & POST MITIGATION)	PRE MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT	POST MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT
	representative of the residence accessed by the gateway in the middle of the view. The walled boundary of this residence encloses much of the view. To the west, the landform dips away from the viewer, the vegetation cover increases, before increasing in elevation in a gentle rolling manner towards the west. There are a myriad of hedgerows on the far (uphill) section of landform, these define the skyline to the centre and south, while to the north, the more upland areas of the study area are visible over the trees. In the direction of the proposed development, visibility is shortened by vegetation and the forementioned boundary wall, limiting longer distance views.		Therefore, the magnitude of effect is deemed **Negligible**.		
VP4	**L70382 local road at Oakfield/Dromintobin North:** This is a typical but pleasant rural scene afforded from the L70382 local road immediately west of the southwestern parcel, adjacent to the southern extent of the northern parcel of Ballyglass Phase 1. This is a predominantly easterly view across a broad rolling pastoral field that extends throughout the middle ground	**Medium-low**	The proposed solar development is not visible as it is entirely screened by vegetation. A distant view of the top of the proposed substation has the potential to be afforded to the northeast, however, it is unlikely to draw the eye here due to the slender steel structures. Thus, the magnitude of visual impact is deemed **Negligible** both prior to and following mitigation.	**Imperceptible / Neutral / Medium-term**	**Imperceptible / Neutral / Long-term**

VP NO.	EXISTING VIEW	VP SENSITIVITY	VISUAL IMPACT MAGNITUDE (PRE & POST MITIGATION)	PRE MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT	POST MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT
	context of the view; this openness is balanced by a block of woodland to the southern side of the view, whilst a low rolling ridge cloaked in a patchwork of agricultural fields contains the background of the view. A more restricted view of a close tree-lined hedgerow is afforded to the north and northwest along the road alignment. It is representative of the small number of residences located along the local road.				

1.6.8 Monitoring

1.6.8.1 Construction Phase

Landscape tender drawings and specifications will be produced to ensure that the landscape work is implemented in accordance with best practice. A landscape management and maintenance schedule also forms part of the solar application, which includes relevant information for the substation aspect of the development. This document will include tree work procedures, soil handling, planting and maintenance. The contract works will be supervised by a suitably qualified landscape architect.

All tree protection requirements will be installed on commencement of the development and removed on a phased basis as stages of the development are completed.

1.6.8.2 Operational Phase

This will consist of weed control, replacement planting, pruning etc. All landscape works will be in an establishment phase for the initial three years from planting. All works will be monitored on an ongoing basis to ensure the quality of the development is maintained. Details of all monitoring and maintenance are outlined in the Landscape Management and Maintenance Schedule for the proposed development.

1.7 CUMULATIVE EFFECTS

The principal potential cumulative effects relate to the wider solar farm application, which is directly linked to the proposed SID project. The combined developments will increase the intensity and scale of electrical infrastructure and solar development within the surrounding landscape. As the SID development is fully contained within the bounds of the proposed wider solar farm development its potential to generate any notable additional landscape effects is limited.

However, as noted in the submitted solar development LVIA (Clare planning ref: 22591 and 2460485), there are several other permitted solar farm developments are located within the central and wider study area. The permitted developments can be divided into two groups: permitted solar development located immediately adjacent to the proposed development and permitted solar development located in the southeast quadrant of the study area. The most notable permitted solar development in relation to the proposed development is Ballyglass Solar Development Phase 1 (Planning Ref 22591).

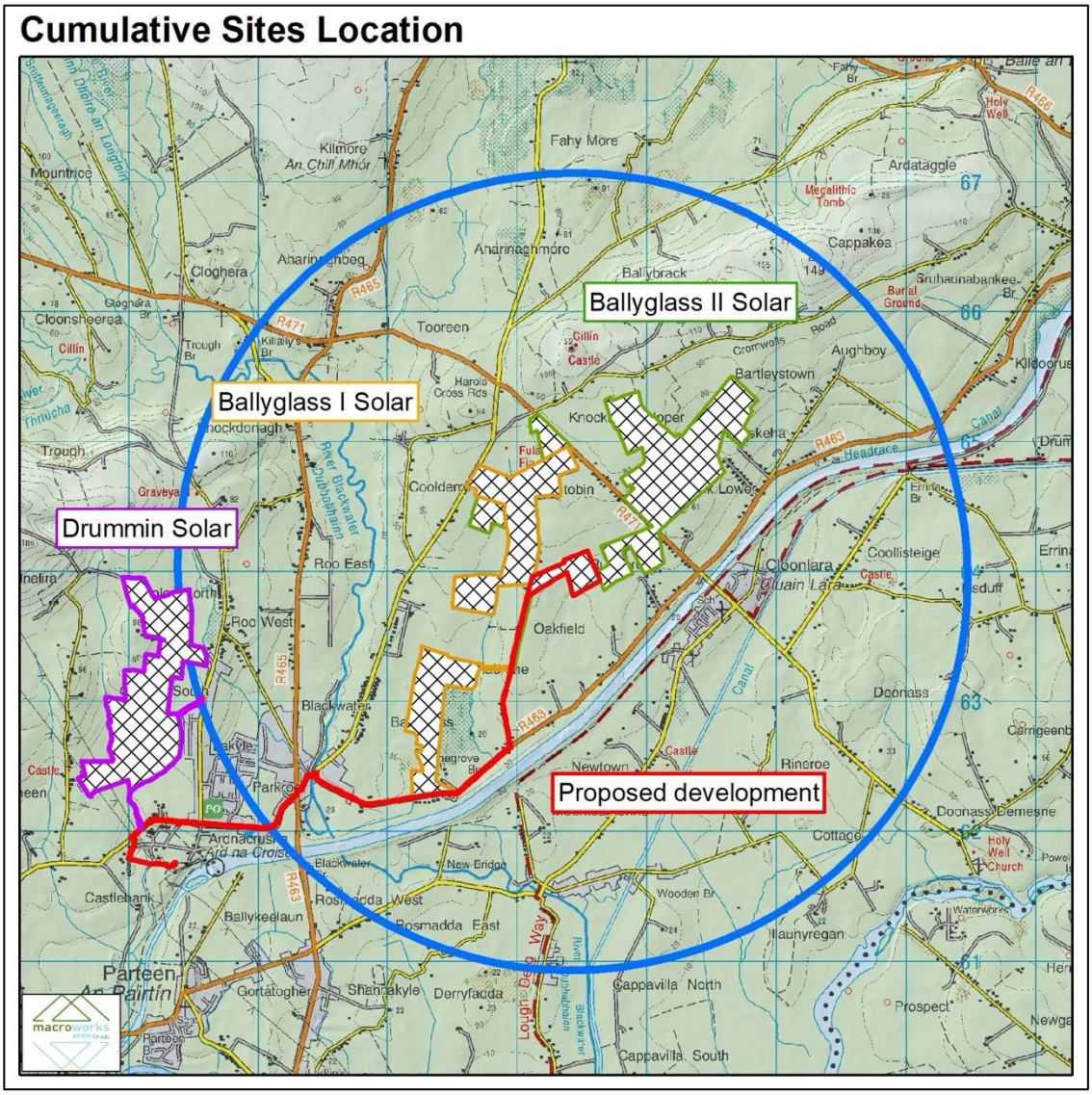

Figure 1.11 Ballyglass Solar (Permitted) and Ballyglass Solar II (Proposed) in relation to the proposed 110kV substation study area.

One other permitted solar development Drummin Solar (Planning Ref 2360249), is also located in the western extent of the study area some 2.38km west of the site. The most notable potential for cumulative landscape and visual impacts relates to the permitted Ballyglass Solar Phase I, and proposed Ballyglass Phase II due to the near distance and interlaced nature of the fields in which the proposed solar arrays are located.

It is also important to note that the proposed substation will be located within boundary of Ballyglass Phase II, and within 300m of the Ballyglass Phase I, located in a heavily screened part of the study area that will be bolstered with additional hedgerow planting as part of the mitigation strategy for the proposed Ballyglass Solar Farm Phase II. Even if partially glimpsed from the surrounding landscape, the proposed substation will only result in a marginal increase in the intensity of electrical infrastructure development within the study area. Where partially and intermittently visible in combination with the permitted Ballyglass Solar Phase I and proposed Ballyglass Solar Phase II, the substation will likely be viewed as one combined development. Notwithstanding, due to the high degree of existing surrounding screening in the form of hedgerow vegetation and surrounding woodland, combined with the proposed and consented landscape mitigation strategies, the full scale of all three proposed and permitted developments will never be fully apparent. Indeed, only partial and intermitted glimpses of the taller features in the proposed substation development will be afforded from the surrounding landscape context.

The main cumulative landscape impact associated with the Ballyglass Solar Phase I and Phase II occurs in the local setting is along the R471 corridor and across the pasture to the south at Dromintobin and Ruanard, where the road corridor is highly enclosed by existing residences and intermittently by vegetation. The parcels of the proposed Ballyglass Phase II further enclose three sections of the road, two along the south of the road corridor, which combine with Ballyglass Phase I (Planning ref. 22591), and the larger parcel of proposed Ballyglass Phase II to the north, in the triangle of pasture between Cromwells Road, the R463/L7040 and the R471. The distributed nature of parcels along the R471 to the west, between the L3046 and L70382, fragments the perimeter of pasture which surrounds Ballyglass Phase 1. This has the potential to create a broad area where the dominant land uses are higher intensity (solar energy infrastructure and standalone residences) rather than the lower intensity agricultural land uses of the wider landscape.

In terms of visual impacts, the most important point to make is that the proposed Ballyglass Phase II development will result in a residual visual impact no greater than ‘Slight’, with the majority of receptors classified with a residual visual impact of ‘Slight-imperceptible’ or ‘Imperceptible’, as the proposed solar array will be heavily screened even from the local landscape context. Thus, the potential for the proposed Ballglass II solar development to be viewed in combination with other permitted solar development is extremely limited. Owing to the relatively flat nature of the landscape between the Proposed Ballyglass Solar II Development and permitted developments, combined with the high degree of intervening vegetation within the intervening landscape, area and the relatively low-height of the solar panels there will be minimal opportunities to afford visibility of the Proposed Development and permitted developments. This, combined with the proposed mitigation measures, will result in only brief views and fleeting glimpses of the proposed solar arrays.

The most notable potential for cumulative visual impacts relating to the proposed and permitted solar developments is along the L3046 that traverses west of the proposed Ballyglass Phase II (Planning ref. 2460485) and Ballyglass Phase I (Planning ref. 22591), with views to the east over the western parcels of both. While the L70382 and the R471 both bisect the permitted and proposed Ballyglass Phase I & II, visibility is fleeting and limited to one field or gateway view, with little opportunity for the full extent of panels to be seen. However, as discussed above, the existing areas of screening and enclosure along the R471 will be extended to the north and south, where the proposed Ballyglass Phase II parcels further enclose three sections of the road corridor. Where glimpses are possible, the distributed nature of solar development has the potential to be perceived as surrounding the viewer and road context with higher intensity land use (residential and solar energy infrastructure) rather than the lower intensity pasture of the wider landscape. This is due to the dense vegetation typical of the LCA 9 'River Shannon Farmland' landscape character type, with numerous small sections of the different solar farm developments (proposed and cumulative), which are intermittently visible from different locations across the study area. While these will not notably impact transient viewers, such as tourists or those who pass through the area infrequently, for those who live in the surrounds and are likely to drive the R471, R463 and L3046 often and are familiar with the surrounding context, the repeated partial views will result in an increase intensity of built development in this local landscape context.

However, as presented in the photomontages, the proposed substation is heavily screened by vegetation, and presents with limited potential visibility, confined to the narrow, upper sections of electrical equipment and lightning poles, even at the nearest section of the L70382 and the R471. At distances of more than 1km, such as along L3046, while there is theoretical visibility, the proposed development will be absorbed into the wider network of land uses and the combination of existing and bolstered screening vegetation. Thus, it is not considered that the proposed substation will generate any notable cumulative landscape and visual effects.

1.8 CONCLUSIONS

In terms of landscape impacts, the proposed 110kV substation development is considered to have only a modest physical impact as it is consolidated within the existing hedgerow network and will not require significant excavation works. Similarly, the wider solar development will be contained within the existing hedgerow network, and will not require significant earthworks or vegetation clearance to construct either the solar panels or the access and maintenance tracks, or underground cable connections.

In terms of impacts on landscape character, the proposed 110kV substation development and wider solar farm represent the introduction of a new and relatively unfamiliar form of built development into a rural setting. Nevertheless, the proposed 110kV substation is located in a well contained part of the surrounding local landscape, which limits its potential to alter the surrounding landscape character beyond its immediate surrounding context. This is a productive rural landscape setting with associated landscape values. While the proposed development may alter the 'landscape fabric' of the area, it does not markedly affect the prevailing landscape pattern or override the rural landscape character of the area.

It is also important to note that the proposed 110kV substation and wider solar development is also well contained within the existing field boundaries and has little impact on the overall structure of the receiving landscape. In fact, as part of the proposed landscape mitigation measures, the proposed development will see the enhancement and protection of considerable areas of hedgerow vegetation, the planting of new native hedgerows and the management of grasslands for biodiversity, leaving a positive legacy on the site and surrounding landscape. Although the proposed wider solar development will present as an unfamiliar development type in this context, it represents a form of agricultural diversification and will not appear incongruous in this working landscape setting.

The site and its immediate surroundings constitute a robust and productive rural landscape with associated agrarian landscape values. Whilst the proposed development and wider solar farm will result in the intensification of built development on the receiving agricultural lands, it does not markedly affect the prevailing landscape pattern or overriding rural landscape character of the area and represents a form of agricultural diversification. Therefore, combined with the 'Medium-low' magnitude of operational stage landscape impact, the overall significance of operational stage landscape effect was deemed no greater than 'Moderate-slight' and of a Negative quality.

Visual impacts were assessed at 4 viewpoints throughout the immediate and wider landscape context, representing various viewing distances, angles and receptor types. The sensitivity of visual receptors at all 4 representative viewpoints was classified as Medium-low as they represent relatively typical rural areas and are not considered highly distinctive or rare in any sense.

The residual significance of visual effect ranged between 'Slight' and 'Imperceptible', despite the fact that all four representative viewpoints are contained within the immediate context of the site. This clearly demonstrates the well contained nature of this part of the wider solar farm site, which will be further screened and softened by the proposed landscape mitigation planting. Viewpoint VP1 was classified with a residual 'Slight' significance of visual effect as there will be some degree of visual change in comparison to the baseline context, however this exclusively relates to the proposed Ballyglass Phase II viewed in the opposite direction to the proposed 110kV substation. Indeed, whilst the SID and wider solar farm development will be largely screened from this road once the proposed mitigation screen planting has fully established, the screen planting will generate some degree of enclosure screening the views of the rolling agricultural fields visible in the baseline view. Nevertheless, roads enclosed by hedgerow vegetation are commonplace in the rural context, and thus, this element of visual change will not appear incongruous in this context.

Overall, it is considered that the proposed development and wider solar development is a suitably sited and scaled development that is well-screened by the surrounding layers of dense vegetation. Indeed, the proposed 110kV substation development will have a much more limited residual landscape and visual effect than the solar aspect of the overall development, as it is well screened with very limited residual visibility within the surrounding intervening landscape. Furthermore, in terms of the surrounding landscape and visual policy, it is not considered that the proposed solar development will conflict with landscape and visual-related policy in the Clare County Development Plan.

It should also be noted that that on receipt of further information details provided by the applicant to CCC, the approval notice stated that the proposed development would be "be in accordance with the proper planning and sustainable development of the area". In this regard, it is considered that the localised effects generated by the proposed development were deemed acceptable by the planning authority.

1.8.1 Overall Significance of Effect

Based on the landscape and visual impact judgements provided throughout this LVIA, the proposed Ballyglass SID substation and grid connection is not considered to give rise to any significant residual effects.

1.9 REFERENCES

- Landscape Institute and the Institute of Environmental Management and Assessment (IEMA) publication entitled Guidelines for Landscape and Visual Impact Assessment, 2013 (GLVIA3);
- Environmental Protection Agency (EPA) publication 'Guidelines on the Information to be contained in Environmental Impact Statements (2022); and

- 'Photography and Photomontage in Landscape and Visual Impact Assessment', Landscape Institute Technical Guidance Note 06/2019.