Brewongle Solar Farm

Landscape and Visual Impact Assessment

Edify Energy Pty Ltd.

03 December 2024

The Power of Commitment

Project name		Brewongle Solar Farm LVIA					
		Brewongle Solar Farm | Landscape and Visual Impact Assessment					
		12630552					
		12630552-REP_Brewongle SF LVIA.docx					
S4	0	V.Wheatley	L.Farrell		L.Farrell		03/12/24
[Status code]							
[Status code]							
[Status code]							

GHD Pty Ltd | ABN 39 008 488 373
180 Lonsdale Street, Level 9
Melbourne, Victoria 3000, Australia
T +61 3 8687 8000 | **F** +61 3 8732 7046 | **E** melmail@ghd.com | **ghd.com**

Acknowledgement of Country

GHD acknowledges Aboriginal and Torres Strait Islander peoples as the Traditional Custodians of the land, water and sky throughout Australia on which we do business. We recognise their strength, diversity, resilience and deep connections to Country. We pay our respects to Elders of the past, present and future, as they hold the memories, knowledges and spirit of Australia. GHD is committed to learning from Aboriginal and Torres Strait Islander peoples in the work we do.

Executive summary

This report has been prepared to assess the landscape and visual impacts of the Brewongle Solar Farm project (the Project), as part of the Environmental Impact Statement, in accordance with the Secretary's Environmental Assessment Requirements for the Project. This report is subject to, and must be read in conjunction with, the limitations set out in section 1.3 and the assumptions and qualifications contained throughout the Report.

Edify Energy Pty Ltd (Edify Energy) propose to develop the Project at Tarana Road, Bathurst NSW 2795, approximately 12 kilometres from Bathurst town centre in the Bathurst Regional local government area.

This report includes an assessment of impacts to landscape character, a visual impact assessment comprising a preliminary visual assessment and detailed viewpoint assessment (refer to Appendix B), and mitigation measures supported by a Landscape Concept Mitigation Plan (refer to Appendix C). The assessment methodology is in accordance with the *Technical Supplement – Landscape and Visual Impact Assessment, Large-Scale Solar Energy Guideline* (NSW Department of Planning and Environment, 2022). The report also includes a review of legislation and policy, an assessment of potential construction impacts, and an assessment of potential cumulative impacts from nearby proposed renewable energy development.

The study area was determined to be up to 5 km from the Project boundary. A review of relevant legislation and policy and the existing environment identified key values within the study area include heritage items of state and local significance, and remnant native vegetation. Strategies in policy aim to maintain the rural and scenic character of the land, including its features, character and identity.

Three landscape character zones were defined within the study area, LCZ1 settlement, LCZ2 undulating rural, and LCZ3 plateau. The landscape impact assessment found that the Project would have a moderate impact on LCZ2, and a negligible impact on LCZ1 and LCZ3. The Project is location in LCZ2 and would introduce new uncharacteristic built form features to the rural landscape.

A preliminary visual assessment was undertaken as part of the Project Scoping Report. This assessment found that eleven receiver locations required a detailed viewpoint assessment. A subsequent review of receivers identified an additional two receivers also requiring a detailed viewpoint assessment.

A site inspection was undertaken on 17 to 18 March 2024, and additional supplementary visit in January 2024. For assessment purposes, site photography was captured either from nearby the private dwelling, or from the closest representative public location. A combination of photomontage, wireframe viewpoint assessment and representative views were utilised for the detailed viewpoint assessment (refer to Appendix B). All private receivers resulted in a low visual impact. Public receiver location P8, representing the Main Western Railway Line, resulted in a moderate visual impact due to the proximity to the Project and subsequent very high magnitude.

Seven lots with dwelling entitlements were identified and assessed using the preliminary assessment tools and approach outlined in the Technical Supplement. Three lots were determined to require a detailed visual assessment. A combination of wireframe assessment and assessment based on a nearby assessed viewpoint has been used. All three dwelling entitlements resulted in a very low visual impact.

A description of potential construction impacts has been provided in section 7.4. Although the landscape and visual impacts associated with the construction activities are expected to be of greater magnitude than those associated with operation, as these impacts have a short duration and are temporary in nature, their significance of impact is limited.

Three nearby renewable energy projects were included in the assessment of cumulative impacts, including Glanmire Solar Farm, Central West Pumped Hydro, and Panorama Battery Energy Storage System. The greatest potential for cumulative impacts were found to be from the Project and Glanmire Solar Farm due to the proximity to the Project.

Mitigation measures and a Landscape Concept Mitigation Plan have been provided in section 9 and Appendix C. Although not technically required with reference to the Technical Supplement, proactive perimeter screen planting is proposed to the southern Project boundary to mitigate views from receivers on Tarana Road, and the north-western boundary in response to community engagement with nearby residents. All proposed planting would include appropriate species to complement the existing landscape character and conditions. Mitigation for P8 representing the Main Western Railway Line was determined not to be appropriate and difficult to achieve due to the proximity to the Project, elevation, and speed at which viewers would be passing through the study area. The proposed agri-solar approach would assist in integrating the Project into the existing rural setting.

Contents

Table index

Figure index

Photo index

Appendices

Terminology

Terminology	Definition
EIS study area	The area included in assessments by Edify to determine impacts.
Impact	The effect of a proposal, which can be adverse or beneficial, when measured against an existing condition.
Impact Area	An indicative area defining the development footprint for the Project.
Landscape	A holistic area comprised of its various parts including landform, vegetation, buildings, villages, towns, cities and infrastructure.
Landscape character	The combined quality of built, natural and cultural aspects which make up an area and provide its unique sense of place.
Landscape character zone	An area of landscape with similar properties or strongly defined spatial qualities, distinct from areas immediately nearby.
Landscape value	The relative value that is attached to different landscape by society. A landscape may be valued by different stakeholders for a whole variety of reasons.
Magnitude	The apparent size of a solar energy project in the landscape or when viewed from a given viewpoint.
Project	The Brewongle Solar Farm Project
Project Area	The area proposed to be directly impacted by the development as shown in Preliminary design.
Scenic quality	The relative scenic, cultural or aesthetic value of the landscape.
Sensitivity	The capacity of a landscape or viewpoint to absorb the impacts from a proposed land use change and/or built form.
Study Area	Consists of land in the vicinity of, and including, the project site. The study area is a wider area surrounding the Impact Area as defined in this assessment, including land that has the potential to be indirectly impacted by the Project.
Technical Supplement	*Technical Supplement – Landscape and Visual Impact Assessment, Large-Scale Solar Energy Guideline* (NSW Department of Planning and Environment, 2022)
View	The sight of a landscape or scene.
Viewpoint	A location within the public or private domain with a potential view of a large-scale solar energy project.
Viewshed	The area within which a project can be seen at eye level above ground. Its extent will usually be defined by a combination of landform, vegetation and built elements.
Visibility	The state or fact of being visible or seen.
Visual impact	The impact on views from private and public places. It is determined by considering the visual magnitude and sensitivity.
XPT	Express passenger train
Zone of theoretical visibility	A map, usually digitally produced, showing areas of land within which a development is theoretically visible.

[1] Partially adapted from: *Environmental impact assessment practice note EIA-N04 - Guideline for landscape character and visual impact assessment, Version 2.2* (Transport for New South Wales, 2023); *Technical Supplement – Landscape and Visual Impact Assessment, Large-Scale Solar Energy Guideline* (NSW Department of Planning and Environment, 2022), and *Guidelines for Landscape and Visual Impact Assessment (Third edition.)* (Landscape Institute and Institute of Environmental Management & Assessment, 2013).

Abbreviations

Abbreviations	Definition
3D	Three dimensional
AHD	Australian Height Datum
APZ	Asset Protection Zone
BESS	Battery energy storage system
DEM	Digital Elevation Model
Edify Energy	Edify Energy Pty Ltd
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
GHD	GHD Pty Ltd
GIS	Geographic Information System
ha	Hectares
km	Kilometre
kV	Kilovolts
LCZ	Landscape Character Zone
LEP	Local Environmental Plan
LGA	Local Government Area
LVIA	Landscape and visual impact assessment
m	Metre
MW	Megawatt
MW AC	Megawatts of alternating current
MWh	Megawatt hours
NSW	New South Wales
SEARs	Secretary's Environmental Assessment Requirements
SSD	State Significant Development
ZTV	Zone of theoretical visibility

1. Introduction

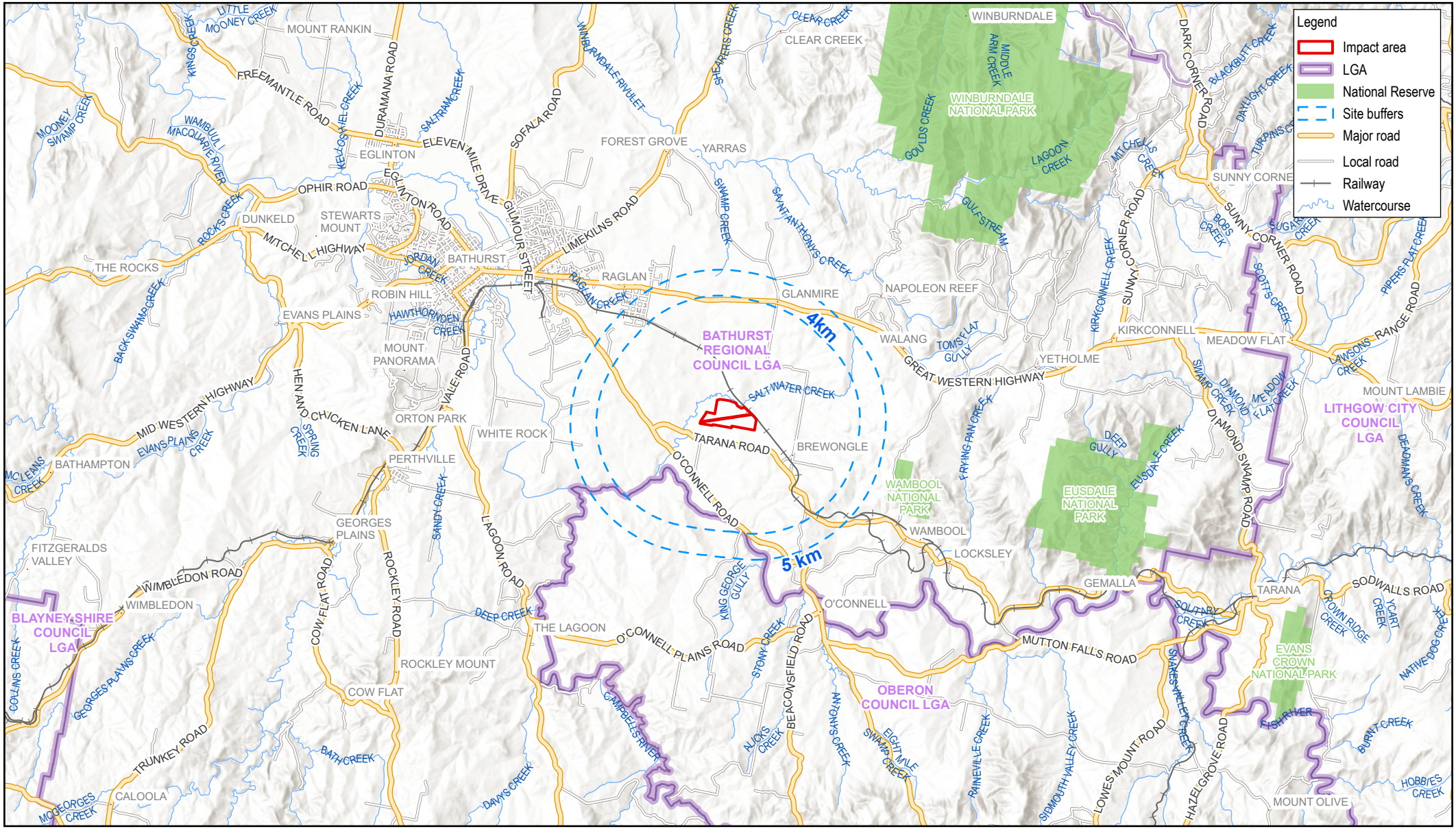
1.1 Overview

GHD Pty Ltd (GHD) has been engaged by Edify Energy Pty Ltd (Edify Energy) to conduct a landscape and visual impact assessment (LVIA) for the Brewongle Solar Farm Project (The Project). Landscape and visual impacts assessed for the construction, operation and decommissioning phases of the Project have been addressed in this report in accordance with relevant regulatory requirements and guidelines.

This report has been prepared to support a State Significant Development (SSD) application for development consent approval under Part 4, Division 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This report forms part of the Environmental Impact Statement (EIS) prepared for the Project.

The Project is located at Tarana Road, Bathurst NSW 2795, approximately 12 kilometres (km) from Bathurst town centre in the Bathurst Regional local government area (LGA) (refer to Figure 1.1). The EIS study area covers up to 299 hectares (ha) on land that is predominantly used for agricultural activities. The Project area is comprised of three (3) separate lot parcels. The Project area covers approximately 170 ha.

The Project includes the construction, operation and maintenance of a solar facility and battery energy storage system (BESS), and associated infrastructure. This will include operation and maintenance buildings, internal access tracks, civil works, and electrical infrastructure. The solar facility is anticipated to have a generating capacity of up to 90 Megawatts of alternating current (MW AC) and the BESS is anticipated to have a capacity of up to 90 Megawatt (MW)/180 Megawatt hours (MWh). The Project area refers to the area of land corresponding to the property boundaries on which the Project is located. This includes all Project elements and ancillary infrastructure.



Edify Energy Pty Ltd
Brewongle Solar Farm
LVIA

Project No. **12630552**
Revision No. **0**
Date **03/09/2024**

Project location

FIGURE 1.1

\\ghdnet\ghd\AU\Melbourne\Projects\31\12630552\GIS\Maps\Deliverables\12630552_LVIA.aprx
Print date: 03 Sep 2024 - 16:22

Data source: Base data, NSW 2023; World Hillshade: Esri, CGIARBase Imagery Extracted 03/09/2024. Created by: dbbanatin

1.2 Purpose of this report

1.2.1 Background

A Preliminary LVIA report was finalised in September 2023 as part of the Project Scoping Report. This included a preliminary baseline analysis, preliminary landscape character zones, zone of theoretical visibility (ZTV) mapping, and a preliminary visual assessment of the Project in accordance with the *Landscape and Visual Impact Assessment, Large-Scale Solar Energy Guideline* (NSW Department of Planning and Environment, 2022) (hereafter referred to as the Technical Supplement). The preliminary LVIA has been integrated within this report.

The Secretary's Environmental Assessment Requirements (SEARs) for the Project were issued in December 2023 after completion of the Preliminary LVIA.

1.2.2 This report

The purpose of this report is to assess the landscape and visual impacts of the Project as part of the EIS, in accordance with the SEARs for the Project. Table 1.1 outlines the SEARs requirements relevant to landscape and visual impact, and the sections of the report where these have been addressed.

Table 1.1 SEARs requirements

Landscape and Visual SEARs	Section of report addressed
– a landscape and visual impact assessment, prepared in accordance with the *Solar Guideline* and the *Technical Supplement – Landscape and Visual Impact Assessment;*	All
– a detailed assessment of the likely visual impacts of all components of the project on surrounding residences (including approved developments, lodged development applications and dwelling entitlements), and key locations, scenic or significant vistas and road corridors in the public domain; and	Section 7 and Appendix B
– details of measures to mitigate and/or manage potential impacts (including a draft landscaping plan for on-site perimeter planting, with evidence it has been developed in consultation with affected landowners).	Section 9, Appendix B and Appendix C

1.3 Scope and limitations

This report: has been prepared by GHD for Edify Energy Pty Ltd. and may only be used and relied on by Edify Energy Pty Ltd. for the purpose agreed between GHD and Edify Energy Pty Ltd. as set out in section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Edify Energy Pty Ltd. arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 1.4 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

Accessibility of documents

If this report is required to be accessible in any other format, this can be provided by GHD upon request and at an additional cost if necessary.

1.4 Assumptions

This report and methodology includes the following assumptions and limitations:

– This assessment aims to be objective and describe any changes factually. While potential changes resulting from the Project are defined, the significance of these changes may require qualitative (subjective) judgements. This assessment's conclusion therefore combines objective measurement and professional interpretation.
– This assessment is based on the information provided to GHD at the time of writing
– This assessment is based on the Project concept design. Some aspects of the design are indicative at this stage, to be finalised during Detailed Design.

2. Methodology

2.1 Standards and guidance

This landscape and visual impact assessment (LVIA) has been prepared in accordance with the assessment process outlined in:

– *Technical Supplement – Landscape and Visual Impact Assessment, Large-Scale Solar Energy Guideline* (NSW Department of Planning and Environment, 2022)

The following supporting documents were also referred to:

– *Guidelines for Landscape and Visual Impact Assessment, 3rd Edition* (Landscape Institute and Institute of Environmental Management & Assessment, 2013)
– *Environmental impact assessment practice note EIA-N04 - Guideline for landscape character and visual impact assessment, Version 2.2* (Transport for New South Wales, 2023)

2.2 Study area

As recommended in the Technical Supplement, a study area of approximately 5 km from proposed development was used for the legislation and policy review and landscape character assessment, and 4 km from proposed development for assessment of visual impacts.

2.3 Review of legislation and policy

A review of key planning designations, policies and guidance was undertaken in relation to landscape and visual amenity within the study area. The emphasis was to identify values and objectives relevant to the landscape and visual character and identity of the study area.

2.4 Desktop analysis

Existing data was gathered and reviewed, including:

– The Project design information
– topography, land use, vegetation maps and Mitchell Landscapes (Department of Environment and Climate Change NSW, 2002)
– Google Earth and Google Street View imagery
– Feedback from community engagement identifying landscape values
– Existing or approved renewable energy developments within a regional and local context

Using this information, an initial assessment of the landscape and visual environment was undertaken to inform the site inspection.

2.5 Site inspection

A site inspection was undertaken by two landscape architects on the 17 to 18 March 2024. The purpose of the inspection was to:

– Assess the landscape character of the study area and identify landscape and visual sensitivities
– Inspect views from public and private sensitive receiver locations identified in the preliminary visual assessment requiring a detailed visual assessment
– Inspect views from private residential receivers identified in the preliminary visual assessment requiring a detailed visual assessment
– Undertake site photography suitable for detailed visual assessment and photomontage preparation

The coordinates of each viewpoint were recorded during the site inspection.

An additional site visit was also conducted by the author in January 2024 to capture some supplementary photos using an Apple iPhone SE.

2.6 Landscape character assessment

2.6.1 Landscape character zones

Landscape character considers common landscape zones defined by typical features and characteristics identified during the desktop assessment and site inspection. Defining landscape character zones (LCZs) identifies areas sharing the same homogenous environmental or cultural qualities or pattern such as topography, vegetation, hydrology, land use and settlement, built form scale and character, cultural and recreational characteristics.

This approach has been used to establish the existing landscape character within the study area and to provide a framework for measuring the impact of the Project. This assists in defining landscape elements that contribute to defining character, defining landscape character attributes, and identifying landscape value.

The assessment of the existing environment also considers factors which have influenced landscape change in the past and those that are likely to do so in the future.

2.6.2 Landscape character impacts

Assessment of landscape character impacts deals with the effect of change and development on landscape as a resource. The concern is with how the Project would affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character. The consideration of potential impacts on landscape character is determined based on the sensitivity of the existing landscape and the magnitude of change that is likely to occur.

Sensitivity

The sensitivity of a landscape character type to the type of development proposed is a combination of the landscape value, the landscape susceptibility to change, and the frame of reference for scenic quality values (refer to Table 2.7).

Landscape value looks legislated planning protections associated with landscapes, and holistically at all the elements such as the environmental, cultural, historical and visual/sensory elements that form the landscape. The value of the landscape from an international, national, local and community level is considered when applying a landscape value. Factors are taken into consideration include landscape quality, scenic quality, rarity, representativeness, conservation value, recreation value, perceptual aspects/qualities, and associations (Natural England, Scottish Natural Heritage and Countryside Council, 2011).

The landscape susceptibility to change considers the ability of the landscape to accommodate the proposed development without having a detrimental effect on the existing landscape character, condition or value.

The Technical Supplement includes the frame of reference for scenic quality values as a criteria for the visual impact assessment, however, this is also relevant to the assessment of landscape character.

Magnitude

The magnitude of change to landscape character is based on the size or scale of change, the geographical extent of effects, and the duration and reversibility of effects (refer to Table 2.1). It also depends on the loss, change or addition of any feature to the existing landscape.

Table 2.1 Magnitude of change criteria (landscape)

Rating	Criteria
High	A substantial/obvious change to the landscape character due to total loss of, or change to, elements, features or characteristics of the landscape. Would cause a landscape to be permanently changed and its quality diminished.

Rating	Criteria
Moderate	Discernible changes in the landscape character due to partial loss of, or change to elements, features or characteristics of the landscape, however, has potential to be partly mitigated. The change would be out of scale with the landscape character, and at odds with the local pattern and landform and would leave an adverse impact on the landscape character.
Low	Minor loss or alteration to one or more key landscape character elements, features or characteristics, or the introduction of components that may be new but may not be uncharacteristic within the existing landscape character.
Negligible	Almost imperceptible or no change in the landscape character as there is little or no loss of/or change to the elements, features or characteristics of the landscape.

Significance of impact

The combination of sensitivity and magnitude determines the significance of landscape character impacts. Refer to Table 2.2 for the matrix used to determine the significance of impact.

Table 2.2 Significance of impact matrix

		Magnitude of impact			
		High	Moderate	Low	Negligible
Sensitivity	High	High	High moderate	Moderate	Negligible
	Moderate	High moderate	Moderate	Moderate-low	Negligible
	Low	Moderate	Moderate-low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

2.7 Preliminary visual assessment

The preliminary assessment stage is used to identify viewpoints that require a detailed assessment in stage 2. Preliminary Assessment Tools provided in the Technical Supplement have been used to undertake this assessment. The tools are designed to identify where community and landholder consultation should be focused, and to eliminate the need to assess viewpoints that are likely to experience very low impacts. The tools rely on quantitative data collected during the desktop assessment, including:

– *The vertical and horizontal field of view that a development is likely to occupy when viewed from each viewpoint*
– *Which is influenced by distance, height elevation changes, and width of a project*'

The methodology for the preliminary assessment, as outlined in the Technical Supplement, is as follows:

– *Identify all viewpoints from public roads and rail lines within 2.5 km of the proposed development*
– *Identify other public and private viewpoints within 4 km of the proposed development*
– *Calculate the distance of each of these viewpoints from the nearest point of the proposed development*
– *Determine the 'relative height difference' between the proposed development and each viewpoint*
– *Plot each viewpoint on the Preliminary Assessment Tool – Vertical Field of View (Figure 2)* (within Technical Supplement) *to determine the indicative vertical field of view (as either 1,2,3 or 4+ degrees)*
– *Measure the worst-case horizontal field of view of the project from each viewpoint (not considering topography or vegetation)*
– *Compare the vertical and horizontal fields of view using the matrix in Table 1* (within Technical Supplement) *to determine whether detailed visual assessment of each viewpoint is required*

The Preliminary Assessment Tools focus on viewpoints with views to the solar array. Additional viewpoints have been considered for any other infrastructure that have potential to cause impacts beyond the solar arrays.

Refer to the Technical Supplement for a detailed description of the Preliminary Assessment Tools. Refer to Figure 2.1 for preliminary assessment requirements.

Horizontal field of view of project	1° vertical field of view	2° vertical field of view	3° vertical field of view	4°+ vertical field of view
1-10°	No assessment required	No assessment required	No assessment required	No assessment required
11-20°	No assessment required	No assessment required	No assessment required	Assessment required
21-30°	No assessment required	No assessment required	Assessment required for all viewpoints except road/rail	Assessment required
31-40°	No assessment required	Assessment required for all viewpoints except road/rail	Assessment required for all viewpoints except road/rail	Assessment required
41-50°	No assessment required	Assessment required for all viewpoints except road/rail	Assessment required	Assessment required
51-60°	No assessment required	Assessment required for all viewpoints except road/rail	Assessment required	Assessment required
61-70°	No assessment required	Assessment required	Assessment required	Assessment required
71-130°	Assessment required for all viewpoints except road/rail	Assessment required	Assessment required	Assessment required
130°+	Assessment required	Assessment required	Assessment required	Assessment required

(Source: Technical Supplement)

Figure 2.1 Preliminary visual assessment tool – assessment requirements

2.7.1 Parameters used

Refer to Table 2.3 below for the parameters used for preliminary assessment tool criteria.

Table 2.3 Preliminary assessment tool parameters

Criteria	Source / parameters used
Private receivers	Provided by Edify Energy.
Public receivers	Locations selected within viewshed based on Google street view analysis.
Distance from receiver to nearest point of proposed development (distance to development)	Distance calculated from receiver location to Impact Area boundary.
Elevation at receiver	Digital Elevation Model (DEM) (created using one and two meter contour intervals at a resolution of 1 metre (m)), were sourced from ELVIS and best resolution was used where available.
Highest point of design	Highest point of digital terrain with addition of 4.2 m for solar array.
Lowest point of design	Lowest elevation of digital terrain (not including existing farm dam).
Relative height difference	Height of receiver is compared to the low and high points of the array and the respective formula is used from the Technical Supplement.
Horizontal field of view	Angles calculated using Impact Area boundary.
Sector	Distance and relative height formulas provided from the Technical Supplement Preliminary Visual Assessment Tool XLSX.

2.7.2 Zone of theoretical visibility

Zone of theoretical visibility (ZTV) mapping is a computer-generated analysis which identifies land from which it is theoretically possible to view the components of the Project. ESRI ArcGIS software was used to model the ZTV of the Project. The DEM parameters were as per Table 2.3.

The ZTV was mapped using the following parameters:

– A viewing height of 1.7 m
– Multiple points aligned in a grid across Impact Area (offset 10 m from boundary), referencing an indicative array layout, using a height of 4.2 m
– Multiple points within the BESS area, using a height of 3 m

The GIS software then digitally determines the likely extent over which the feature would be visible or not visible.

The reverse ZTV was mapped, using the same parameters, however displaying:

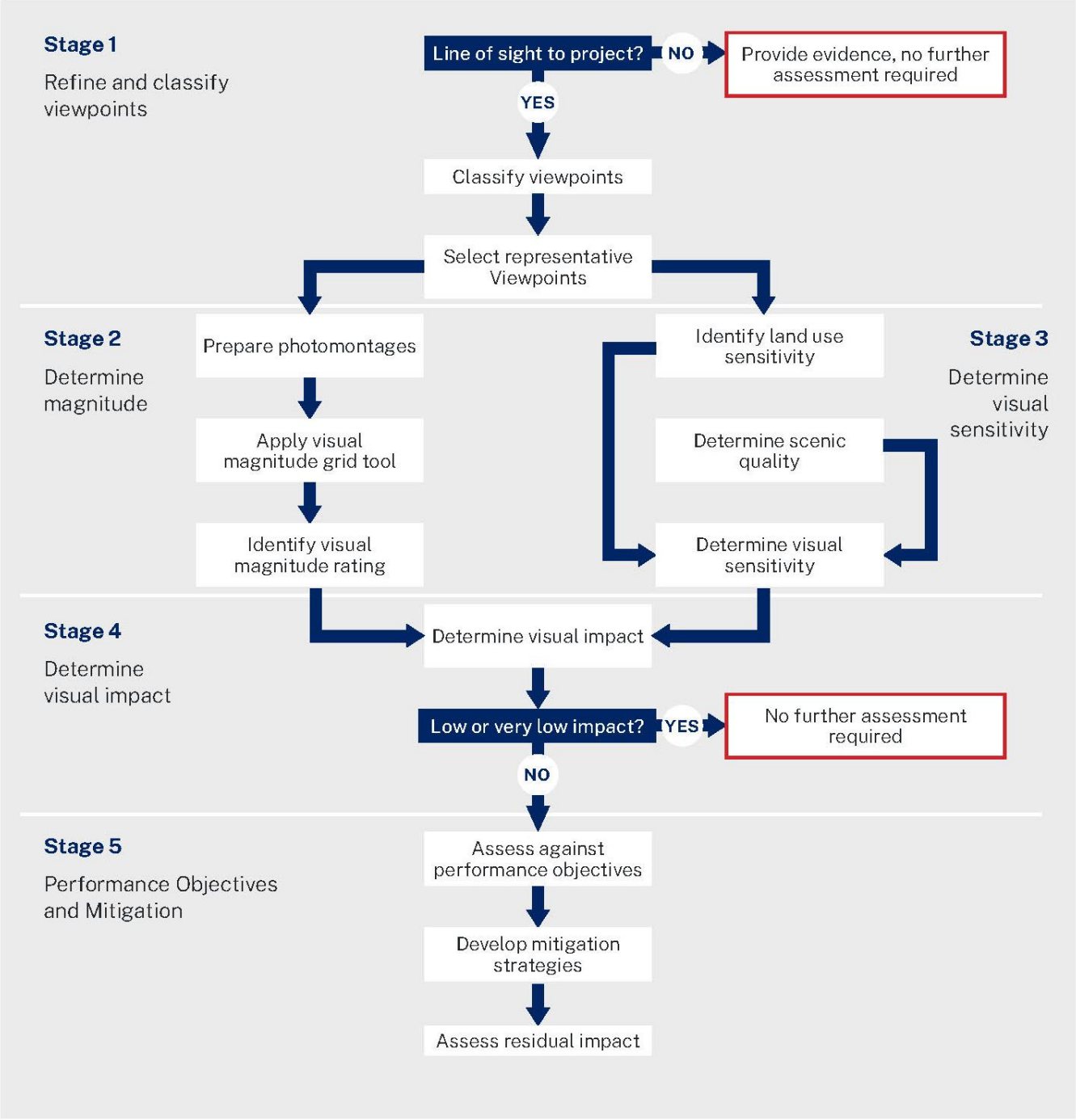
– The extent of theoretical visibility of land within the Impact Area, from identified surrounding sensitive receivers within 4 km of the Project

In interpreting the ZTV, the following issues must be considered:

– It only takes into account the landform and does not include land cover factors such as the presence of buildings and trees, therefore it represents the worst-case scenario of potential visual impact
– It does not take into account the effect of distance. The greater the distance from the Project, the lower the impact, as the development will take up a smaller portion of the view, and atmospheric conditions may reduce the visual prominence of the Project.
– The ZTV is only accurate to the resolution of the elevation model

2.8 Detailed viewpoint assessment

The detailed assessment stage is used to undertake a comprehensive assessment of the visual impacts on viewpoints identified in the preliminary assessment. In accordance with the Technical Supplement, the detailed visual assessment must be prepared in accordance with the process outlined in Figure 2.2.



(Source: Technical Supplement)

Figure 2.2 Detailed visual impact assessment process

2.8.1 Stage 1 - Refining and classifying viewpoints

After the site inspection, viewpoints identified in the preliminary assessment were refined and classified. Where no views of the Project could be seen from a viewpoint location, a detailed assessment has not be provided. Evidence showing why no views can be seen from these locations has been included in the assessment.

In residential dwelling locations where there are views of the Project, the assessment focuses on the potential worst-case views from the dwelling.

Views from a rural dwelling will be categorised according to their importance, as outlined in Table 2.4. Primary views are considered more important than secondary views.

Table 2.4 Primary and secondary viewpoints from rural dwellings

Primary viewpoint	Secondary viewpoint
Principal / frequented living spaces (e.g., living rooms, kitchens, dining areas).	Less frequent living and service areas (e.g., bedrooms, laundries, bathrooms, garages, studies).
Front and rear views from a dwelling, particularly from any porch, balcony, veranda, deck or patio.	Side views from a dwelling.

(Source: Technical Supplement)

2.8.2 Stage 2 - Visual magnitude

The visual magnitude of a project is its apparent size determined by the volume of the horizontal and vertical fields of view occupied. To determine the visual magnitude for each viewpoint, the following process has been undertaken, in accordance with the Technical Supplement.

1. capture a panoramic photograph that comprises 180 degrees of horizontal field of view
2. produce a photomontage by overlaying a three dimensional (3D) model of the proposed development on the panoramic photo
3. overlay the Visual Magnitude Grid Tool on the photomontage
4. identify and count the number of grid cells that the project would occupy
5. determine the magnitude rating based on the number of cells and the thresholds in Table 2.5

Baseline panoramic photography and photomontage

As outlined in the Technical Supplement, all photographic images were captured using a 50 millimetre fixed focal length lens on a 35 millimetre full frame format camera at a camera height of 1.5 m. A tripod with levelling was used with a panoramic head, and photographs were taken in portrait orientation.

To illustrate the existing views from viewpoint locations, a panorama technique was used to merge together a series of adjoining photographic images using the Adobe Photoshop to form a single image with 180 degrees of horizontal field of view.

A 3D model was created for the Project, using maximum height parameters outlined in section 3. As the substation design is in preliminary stages, an indicative substation has been modelled in the proposed location. The software used to model and render was Autodesk 3D Studio Max. In order to achieve an accurate photomontage of the Project and surrounding terrain a DEM was created using the data set out in Table 2.3.

Once the 3D model incorporating both the landscape and new Project elements were created, a virtual camera was placed in the software at the same location the photographs were taken. The film, focal lens and height of the virtual camera matches the real camera utilised to take the photographs. The photographs of the site were used in 3D Studio Max as a background to accurately match the 3D model with the Project elements to the perspective of the photographs. From the camera view, rendered images of the Project were produced to match the daylight exposure of the photographs. The rendered images were imported into Adobe Photoshop for post-production editing and collation of the photomontages.

The final result is the 3D model of the Project shown in the correct 3D location in the photographs. The final images were produced to a high resolution, suitable for printing. To best represent the view of the Project from the human eye, a full-size 50 mm image of the area of the photomontage with the highest magnitude has been included for each viewpoint, in accordance with the Technical Supplement.

Wireframe views were initially generated and assessed for all viewpoint locations requiring a detailed viewpoint assessment, in order to give an early indication of likely impact rating. Wireframe views were created at 180 degree horizontal field of view using the 3D model and settings for the Canon 6D. The initial wireframes were completed looking at the centre of the Project. Cameras were geolocated based on the viewpoint photo locations. Wireframe views illustrate views of the Project on the DEM, without intervening built form and vegetation.

Visual magnitude grid tool and identifying occupied cells

The Visual Management Grid Tool provided as part of the Technical Supplement has been used to assess the visual magnitude of each viewpoint. The transparent grid was overlayed on the photomontages and all cells occupied by the Project were identified and quantified. Unoccupied cells are those where elements of the Project do not occupy more than approximately 25% of a cell.

Visual magnitude rating

Once the occupied cells have been identified, the total number of cells were counted and then compared to the visual magnitude thresholds in Table 2.5 to determine the visual magnitude rating.

Table 2.5 Visual magnitude thresholds

Number of occupied cells	Visual magnitude rating
1-6	Very low
7-12	Low
13-21	Moderate
22-30	High
31+	Very high

(Source: Technical Supplement)

2.8.3 Stage 3 - Visual sensitivity

Visual sensitivity refers to the quality of the existing view and how sensitive the view is to the proposed change. The visual sensitivity is determined by identifying the sensitivity of each viewpoint and categorising the scenic quality of the area in the view.

Viewpoint sensitivity

Viewpoint sensitivity relates to the relative importance of viewpoints and the value that the community or visitors may place on landscapes viewed from publicly accessible areas and private viewpoints such as dwellings.

Each viewpoint has been given a sensitivity classification based on the criteria in Table 2.6.

Table 2.6 Viewpoint sensitivity levels and examples

Viewpoint type	Very low viewpoint sensitivity	Low viewpoint sensitivity	Moderate viewpoint sensitivity	High viewpoint sensitivity
Residential	No place of residence present	Secondary view from dwellings in rural areas (zoned RU1, RU2, RU3, RU4 and RU6), large lot residential areas (zoned R5) and in environmental or conservation areas (zoned C2, C3 and C4)	Primary view from dwellings in rural areas (zoned RU1, RU2, RU3, RU4 and RU6), large lot residential areas (zoned R5) and in environmental or conservation areas (zoned C2, C3 and C4)	Dwellings in residential areas and rural villages (land zoned R1, R2, R3, R4 and RU5) Historic rural homesteads/residences on the national, state or local heritage list
Transport / infrastructure	Local sealed and unsealed roads Passenger rail lines with daily daylight services State highways, freeways and classified main roads Walking tracks and navigable waterways	Tourist roads and scenic drives Walking tracks and navigable waterways	N/A	N/A
Social / cultural	Private recreation areas and sporting fields (defined as land zoned RE2)	Cemeteries, memorial parks	Tourist and visitor accommodation and places of worship (such as bed and breakfasts, motels, hotels) Tourist uses in tourist areas (zoned SP3) Publicly accessible green and open spaces including picnic areas, parks, public recreation areas Town centres and central business districts	N/A

(Source: Technical Supplement)

Scenic quality

Scenic quality refers to the relative scenic, cultural or aesthetic value of the landscape within the viewshed. The existing environment analysis and landscape character assessment has been used to inform the classification of scenic quality values, together with guidance provided in the Technical Supplement. Refer to Table 2.7 for the scenic classification criteria, noting that this is intended to be a guide only.

Table 2.7 Frame of reference for scenic quality values

Viewpoint type	Low scenic quality	Moderate scenic quality	High scenic quality
Landform	Large expanses of flat or gently undulating terrain. Indistinct, dissected or unbroken landforms that provide little illusion of spatial definition or landmarks with which to orient	Steep, hilly and undulating ranges that are not visually dominant Broad shallow valleys Moderately deep gorges or moderately steep valley walls Minor rock outcrops	Isolated peaks, steep rocky ridges, cones or escarpments with distinctive form and/or colour contrast that become focal points Large areas of distinctive rock outcrops or boulders Well defined, steep sided valley gorges
			
Vegetation	Extensively cleared and cropped areas with very limited variation in colour and texture Pastoral areas, human created paddocks, pastures or grasslands and associated buildings typical of grazing lands	Predominantly open forest or woodland combined with some natural openings in patterns that offer some visual relief Vegetative stands that exhibit a range of size, form, colour, texture and spacing including human influenced vegetation such as vineyards, and orchards	Strongly defined patterns with combinations of native forest, naturally appearing openings, streamside vegetation and/or scattered exotics Distinctive stands of vegetation that may create unusual forms, colours or textures in comparison to surrounding vegetation
			
Waterbodies	Absence of natural waterbody Farm dams, irrigation canals or stormwater infrastructure	Intermittent streams, lakes, rivers, swamps and reservoirs	Visually prominent lakes, reservoirs, rivers, streams, wetlands and swamps Presence of harbour, inlet, bay or open ocean
			

Viewpoint type	Low scenic quality	Moderate scenic quality	High scenic quality
Social / cultural	Places of worship, cemeteries/memorial parks, private open spaces	Local heritage sites Distinguishable entry ways to a regional city identified in the Transport and Infrastructure SEPP	Culturally important sites, world heritage areas, national parks/reserves, Commonwealth and state heritage sites
			
Human presence	Dominating presence of infrastructure, human settlements, highly modified landscapes and higher density populations such as regional cities, industrial areas, agricultural transport or electricity infrastructure	Dispersed yet evident presence of human settlement such as villages, small towns, isolated pockets of production and industry, lower scale and trafficked transport infrastructure	Natural/undisturbed landscape Minimal evidence of human presence and production
			

(Adapted from: Technical Supplement)

Determining visual sensitivity

Once the viewpoint sensitivity and scenic quality are determined, these can be combined using the visual sensitivity matrix to determine the overall visual sensitivity of each assessable viewpoint (refer to Table 2.8).

Table 2.8 Viewpoint sensitivity matrix

	High scenic quality	Moderate scenic quality	Low scenic quality
High viewpoint sensitivity	High	High	Moderate
Moderate viewpoint sensitivity	High	Moderate	Moderate
Low viewpoint sensitivity	Moderate	Low	Low
Very low viewpoint sensitivity	Low	Very low	Very low

(Source: Technical Supplement)

2.8.4 Stage 4 - Visual impact

The overall visual impact rating of each viewpoint has been determined for each assessable viewpoint by combining the visual magnitude and visual sensitivity using the matrix in Table 2.9.

Table 2.9 Visual impact matrix

	High visual sensitivity	Moderate visual sensitivity	Low visual sensitivity	Very low visual sensitivity
Very high magnitude	High	High	Moderate	Moderate
High magnitude	High	Moderate	Moderate	Low
Moderate magnitude	Moderate	Moderate	Low	Low
Low magnitude	Moderate	Low	Low	Very low
Very low magnitude	Low	Low	Very low	Very low

(Source: Technical Supplement)

Use of wireframe viewpoint assessments and photomontage

In instances where a dwelling could not be accessed for viewpoint assessment, a detailed viewpoint assessment has been undertaken using a wireframe view from the dwelling location. A supporting image, and in some cases photomontage, has been provided from a representative viewpoint location, typically the nearest publicly accessible location. The scenic quality rating has been given for the wireframe viewpoint assessment, based on the representative view. The classification of the wireframe is assumed to be a primary viewing location for assessment purposes.

Photomontages have been provided for selected viewpoint or representative viewpoint locations based on higher magnitude ratings for wireframe viewpoint assessments.

2.9 Assessment of dwelling entitlements

Dwelling entitlements have been assessed using the following approach:

– Identification of lots
– Preliminary assessment of lots, using the Preliminary Assessment Tools provided in the Technical Supplement
– Detailed assessment of required dwelling entitlements, providing a discussion of potential impacts only, with reference to nearby assessed receiver locations

2.10 Cumulative impacts

An assessment of cumulative impacts has been provided, identifying the location of any existing operational or approved large-scale energy developments within a regional and local context, including projects which may have the potential to create direct or indirect cumulative impacts with the Project. For each project, the distance from the Project, status and timing has been identified, and a discussion has been provided on potential cumulative impacts.

2.11 Performance objectives and mitigation

Performance objectives and mitigation forms Stage 5 of the detailed viewpoint assessment.

2.11.1 Performance objectives

As outlined in the Technical Supplement, for each viewpoint assessed, the visual mitigation response responds to the performance objectives associated with the impact rating, as shown in Table 2.10.

Table 2.10 Visual performance objective

	High visual impact	This level of impact should be avoided unless the applicant can justify that: – All reasonable efforts have been made to avoid the impact and alternative project designs are not feasible or would be unlikely to materially reduce the impact – All reasonable mitigation options have been considered – The proposed mitigation measures would effectively mitigate the impact and would not result in a significant obstruction of views – The project site is strategically important because of its location – The project is in the public interest
	Moderate visual impact	Visual impact mitigation is required in consultation with the affected landowner and should be proportionate to the scale of impact. There is no expectation this mitigation should eliminate the view of the development entirely but must reduce the impact to an acceptable level. Appropriate mitigation options include vegetation screening or project landscaping to reduce impacts. If available mitigation options would not be effective in reducing impacts or are unsuitable due to the nature of the impact (e.g., screening would result in the obstruction of views), then project redesign and/or impact agreements should be considered.
	Low and very low visual impact	No mitigation is required.

(Source: Technical Supplement)

2.11.2 Mitigation

Mitigation measures were developed in response to impacts identified in the landscape character assessment and detailed viewpoint assessment, and community engagement activities. Mitigation measures include vegetation screening.

In accordance with the SEARs and Technical Supplement, a landscape plan has been provided to illustrate proposed mitigation for the Project.

As outlined in the Technical Supplement, *on-site screening such as perimeter planting, should be considered in the first instance. If this is unlikely to be effective, screening can be considered at affected viewpoints*.

An update to one relevant photomontage has been provided to illustrate the proposed mitigation at an indicative timeframe of ten years.

3. Project description

This section describes the key components of the Project that are relevant to this LVIA. Refer to Figure 3.1 for the Project concept design.

3.1 Operation

The solar facility is anticipated to have a generating capacity of up to 90 MW AC and the BESS is anticipated to have a capacity of up to 90 MW/180 MWh.

Edify Energy refer to their fully-integrated solar farm and BESS developments, such as the proposed Brewongle Solar Farm, as ‘solar power stations’. The projects use grid forming inverters with the batteries and solar photovoltaic integrated as a single, fully-integrated hybrid project, capable of controlling and dispatching the solar electricity via a control system. The key point of difference from traditional, weather-dependent 'solar farms' is that Edify's hybrid projects support the solar generation via this integrated battery system. The hybrid design provides the power system with critical services such as flexible control, congestion relief and various network support services that are integral to help maintain energy supply. To distinguish these advanced features from traditional 'solar farms', it is increasingly common to refer to fully-integrated hybrid projects as 'solar power stations'

3.1.1 Key infrastructure

The Project is expected to comprise of the following:

– Approximately 192,000 solar photovoltaic panel modules (solar panels) placed in solar arrays across and area of up 170 ha:
  - Each solar array is expected to be 70-90 m long and 7 m apart, with a maximum height of 4.2 m depending on the terrain
– Lithium-ion BESS with a capacity of up to 90 MW/180 MWh
  - The location of the BESS is expected to be adjacent to the substation in the Project area or dispersed in modular enclosures throughout the site
– Electricity infrastructure including:
  - Main substation including 132 kilovolts (kV) switchyard and transformer, BESS substation and associated structures,
  - Approximately 245 m of overheard transmission lines from the substation to existing 132 kV transmission lines, and
  - Operation and maintenance facilities including car parking and perimeter fencing

It is assumed that an existing planted shelter belt within the Project site would be removed.

3.1.2 Mitigation strategy

Edify Energy is advancing the Project design with a focus on the 'avoid, minimise, offset' mitigation strategy to reduce environmental impacts. This approach includes:

– Avoiding the farm dams on site to preserve them as a water source.
– Reducing the Project area to minimise the impact on Tarana Road and nearby residences
– Implementing setbacks from surrounding agricultural land to reduce potential impacts
– Edify Energy utilise Agri-solar practices on their other operating solar farms, and propose to continue this practice on the Project

These measures demonstrate the commitment to protecting the local environment while progressing with the Project.

Photo 3.1 Indicative solar farm example

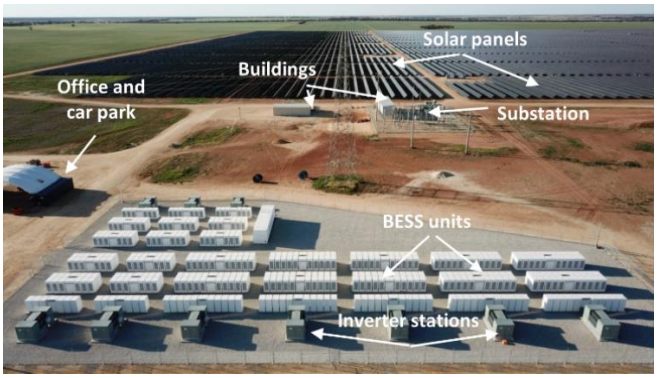


Photo 3.2 Indicative solar farm and BESS example

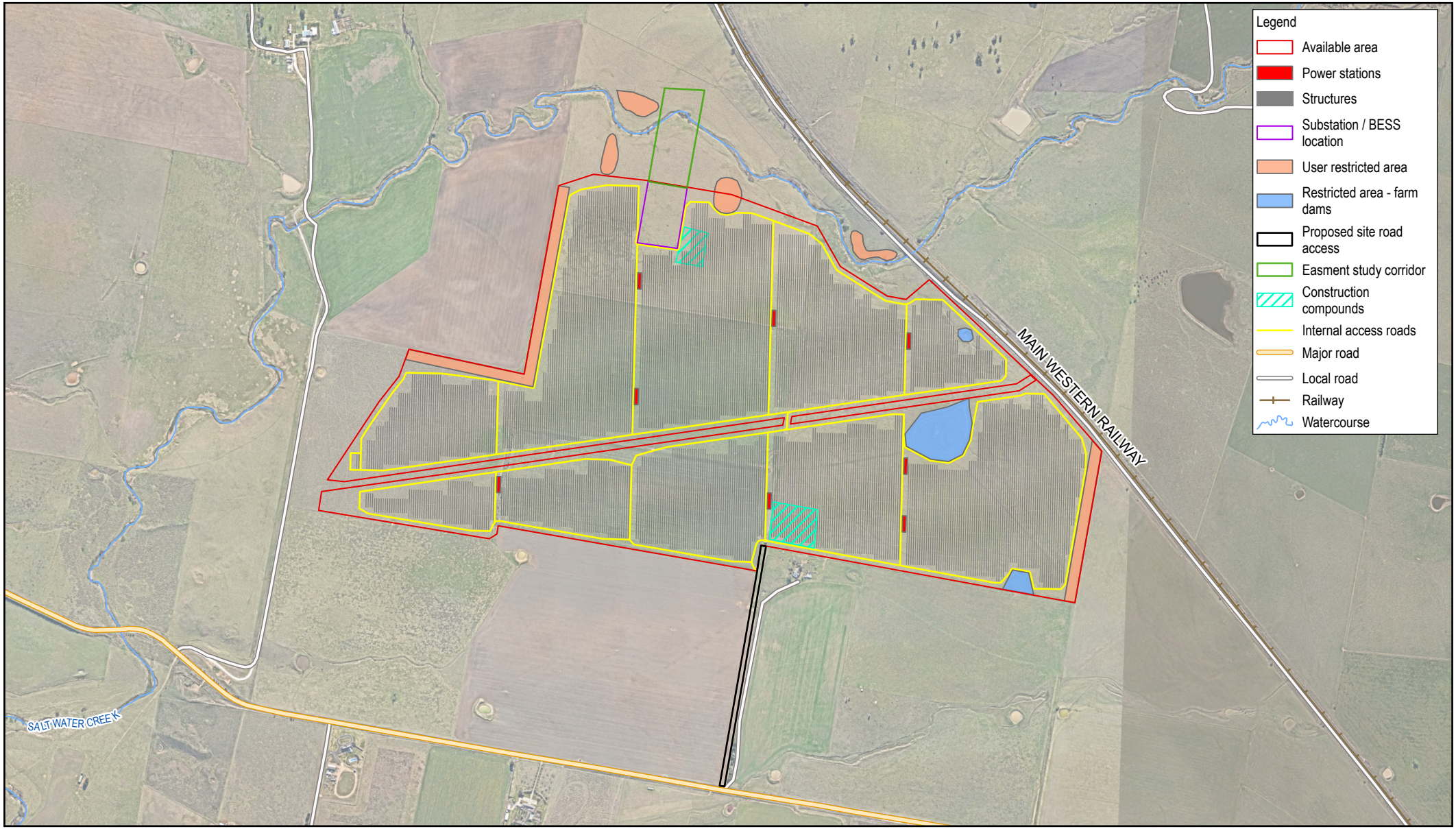
(Image source: Edify Energy)

3.2 Construction and decommissioning

The construction phase is expected to take 12-18 months and aims to commence in the second half of 2026. After construction, the Project will operate for approximately 50 years. Following this operational phase, the Project will be decommissioned, and the land will be restored to its current agricultural state.

Two construction compounds are proposed within the Impact Area, as shown in Figure 3.1.

Standard NSW Construction hours will apply for the Project.



Paper Size ISO A4

0 100 200 300 400

Metres

N

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

GHD

Edify Energy Pty Ltd
Brewongle Solar Farm
LVIA

Project No. **12630552**
Revision No. **0**
Date **12/08/2024**

Project layout

FIGURE 3.1

\\ghdnet\ghd\AU\Melbourne\Projects\31\12630552\GIS\Maps\Deliverables\12630552_LVIA.aprx
Print date: 12 Aug 2024 - 23:23

Data source: Base data, NSW 2023; Nearmap WMS Server: Base Imagery Extracted 12/08/2024. Created by: dbbanatin

4. Legislation and policy

The 5 km study area is primarily located within the Bathurst Regional Council area. The Fish River forms the LGA boundary with Oberon Council, and a portion of this land is located to the south-west of the study area. Land uses within the study area include RU1 Primary Production, SP2 Railway, SP2 Classified Road, R1 General Residential, and RE1 Public Recreation. Items of state significance within the study area include The Grange and Macquarie Plains Cemetery, located on O'Connell Road, and the Raglan Railway Station in the village of Raglan. A number of items of local heritage significance are present within the study area, including rural homesteads associated with the early settlement of the area. Refer to Figure 4.1 for land use zones and heritage.

The following section provides an overview of legislation and policy objectives relevant to landscape and visual considerations within the study area.

4.1 State legislation framework

4.1.1 Environmental Planning and Assessment Act 1979

The Project is a SSD by operation of Division 4.7 of the EP&A Act. As a SSD, the Project needs development consent from the Minister for Planning (or delegate), and the application for approval must be supported by an EIS. The EIS should be prepared having regard to the SEARs, which have been issued for that purpose by the Secretary of the Department of Planning, Industry and Environment.

Land use planning, including zoning and development control, is governed primarily by local environmental plans (LEPs) made under the EP&A Act. LEPs include lists of local heritage items and local heritage precincts, and provide controls on development which may affect those items or be located in those precincts. Although LEP controls do not apply to SSD, relevant LEPs were reviewed for the purpose of preparing this report.

4.1.2 State Environmental Planning Policy (Transport and Infrastructure) 2021

The State Environmental Planning Policy (Transport and Infrastructure) 2021 (SEPP) aims to streamline infrastructure delivery in NSW, establish consistent planning guidelines, and categorise environmental assessments for different developments. It addresses land use conflicts associated with large-scale renewable energy projects like solar farms, and includes specific considerations for developments near regional cities such as Bathurst. These considerations aim to safeguard land slated for future growth, preserve the visual landscape, and promote renewable energy.

Under Division 4 2.36 of the SEPP, electricity-generating works or solar energy systems development is permitted on any land with consent, subject to Clause 2.38 exceptions. The solar farm located in a Primary Production (RU1) zone is allowable with consent under the SEPP.

Consent authorities must assess utility-scale development proposals within 5 km of Bathurst, considering their potential impact on scenic quality, landscape character, and proposed mitigation measures. These considerations also extend to areas within 10 km of B3 - Commercial Core zoned land and within 5 km of residential zones (R1 – General Residential, R2 – Low-Density Residential, R3 – Medium Density Residential), aiming to protect land for residential expansion and prevent conflicts with commercial centres.

The Project site is approximately 5 km south-east of the residential zoned land (R1) in Raglan.

4.1.3 Heritage Act 1977 and State Heritage Register

The aim of the Heritage Act 1977 is to conserve the environmental heritage of the State of NSW. There are two items within the study area listed on the State Heritage Register (NSW Environment and Heritage, 2024).

The Grange and Macquarie Plains Cemetery on O'Connell Road is of state significance for its history and rarity as one of the earliest surviving colonial farmhouses built in inland Australia, and as an early example of a colonial Georgian house. It was thought to be built around 1830.

The Raglan Railway Station group, located in Raglan, is state significant as an example of a non-standard building on an island platform, which is historically rare and illustrates a change of design and policy.

4.2 Regional strategies

4.2.1 Central West and Orana Regional Plan 2041

This plan outlines the region's land use priorities for the next 20 years, emphasising its diverse landscape and acknowledging the role of the region's scenic and cultural landscapes in providing a unique setting for urban areas and a strong link to its natural and historic landscapes.

Part 2: Objective 9 of the plan *ensures that site selection and design embraces and respects the region's landscape, character, and cultural heritage*

4.2.2 Vision Bathurst 2040 - Bathurst Region Local Strategic Planning Statement

The Bathurst Region Local Strategic Planning Statement emphasizes the importance of conducting detailed investigations of areas earmarked for urban development to ensure infrastructure availability and preserve/enhance scenic quality. It prioritises protecting and enhancing the scenic quality of city gateway entrances along O'Connell Road, Sydney Road, Sofala Road, Mitchell Highway, and Mid-Western Highway.

Planning Priority 12 underscores the significance of enhancing environmentally sensitive land and biodiversity by maintaining key landscapes and vistas, controlling urban and rural lifestyle development in biodiverse areas, and safeguarding rural lands from inappropriate development and urban encroachment.

4.2.3 Bathurst Region Vegetation Management Plan 2019 - Update to the Vegetation Management Plan 2003

The Bathurst Vegetation Management Plan 2019 aims to protect and promote the scenic value, views, and vistas within the rural landscapes, emphasising the significance of the city's landscapes in providing a sense of containment and serving as a backdrop to city views.

The plan highlights the need to protect prominent ridges and hillsides for scenic amenity while also preserving and enhancing remnant native vegetation on the ridges and hillsides to contribute to the rural identity of the Bathurst Region. It recognises that the character of the existing natural and built environment, including vegetation type, style of buildings, road layout, and land use, plays a crucial role in maintaining the scenic landscapes and village character throughout the Bathurst Regional LGA.

Guiding principles focus on protecting and managing the region's Significant Natural Landscapes, including maintaining vistas and containing urban development while enhancing gateways to Bathurst and surrounding villages to create a significant eastern gateway that enhances rural vistas and reflects the city's heritage values.

4.3 Local planning framework

4.3.1 Bathurst Region Rural Strategy 2010

Bathurst Region Rural Strategy emphasizes the importance of safeguarding and improving the area's rural landscapes and features, which are integral to its identity and character. This involves protecting and enhancing areas of high scenic quality and important landscape features.

The strategy highlights the scenic value of all roadways throughout rural areas, including drives between villages and settlement locations.

The plan recommends actions such as setbacks to minimise visibility and allow for revegetation to screen new developments and avoid locating new developments on prominent ridges and hilltops.

4.3.2 Bathurst Regional Development Control Plan 2014

The Development Control Plan acknowledges the visual significance of the rural landscape, and aims to protect highly valued agricultural lands and minimise conflicts with other land uses.

Adequate buffer areas and setbacks are recommended to mitigate negative visual impacts on rural dwellings from adjacent land uses, with specific distances outlined for different types of developments.

Consideration of the location, design, and materials of fences, driveways, and property access roads to ensure compatibility with the rural landscape and minimise visual impact, particularly near main highways and gateway approaches to the City.

It recognises the importance of the region's rural vistas. It highlights the necessity of landscaping to enhance visual amenity, prevent developments from dominating their surroundings, and provide landscaped buffers to reduce potential conflicts between land uses.

4.3.3 Bathurst Regional Local Environmental Plan 2014

The Project falls within the Bathurst Regional LGA, therefore the Bathurst Regional LEP 2014 applies. Within this framework, the Project is zoned as RU1 Primary Production. A number of items of local heritage significance are present, including rural homesteads associated with the early settlement of the area.

Table 4.1 Bathurst Regional LEP relevant objectives

Topic	Relevant value or objective
Land use	**Zone RU1 Primary Production** '*To maintain the rural and scenic character of the land.'* *'To provide for a range of compatible land uses that are in keeping with the rural character of the locality, do not unnecessarily convert rural land resources to non-agricultural land uses, minimise impacts on the environmental qualities of the land and avoid land use conflicts.'* **R1 General Residential** *'To protect and conserve the historic significance and scenic quality of the urban villages of Eglington, Raglan, Perthville.'* **RE1 Public Recreation** *'To protect and enhance the natural environment for recreational purposes.'* *'To protect and conserve the historical and scenic quality of Bathurst's open space areas.'*
Heritage conservation	*'To conserve the environmental heritage of Bathurst Regional local government area.'* *'To conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views.'* *'To conserve Aboriginal objects and Aboriginal places of heritage significance.'*

4.3.4 Oberon Local Environmental Plan 2013

Relevant values and objectives identified in the Oberon LEP 2013 have been identified in Table 4.2.

Table 4.2 Oberon LEP relevant objectives

Topic	Relevant value or objective
Aims of Plan	*'To encourage the retention of productive rural land in agriculture.'* *'To identify, protect, conserve and enhance Oberon's natural assets.'* *'To identify and protect Oberon's built and cultural heritage assets for future generations.'*
Heritage conservation	*'To conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views.'* *'To conserve Aboriginal objects and Aboriginal places of heritage significance.'*

4.3.5 Oberon Council Local Strategic Planning Statement 2040

The Oberon Council Local Strategic Planning Statement 2040 aims to develop a vision for land use over the next twenty years by considering current and potential LGA trends. It recognises the importance of agriculture, forestry, lifestyle, and tourism and includes planning actions to ensure their continued viability. The statement also acknowledges the distinctive character of smaller localities around Oberon, blending individual history with scenic landscapes, and emphasises the importance of understanding potential impacts on areas with landscape values.

4.3.6 Oberon Council 2019 -2040 Community Strategic Plan

The Oberon Community Strategic Plan is a long-term vision that 'captures the community's priorities, expectations, and ideas, aiming to create a bright and dynamic future'. Leveraging the region's stunning landscape and favourable climate, the Oberon area is praised for its 'spectacular', 'beautiful,' and 'pristine' characteristics. Efforts to preserve the visual amenity and character of the area include mitigation actions aimed at caring for natural waterways, rivers, and streams. Additionally, waste and weed management practices are carefully balanced to ensure the long-term sustainability of the beautiful natural environment.

4.4 Other strategies and guidelines

4.4.1 Large-Scale Solar Energy Guideline 2022

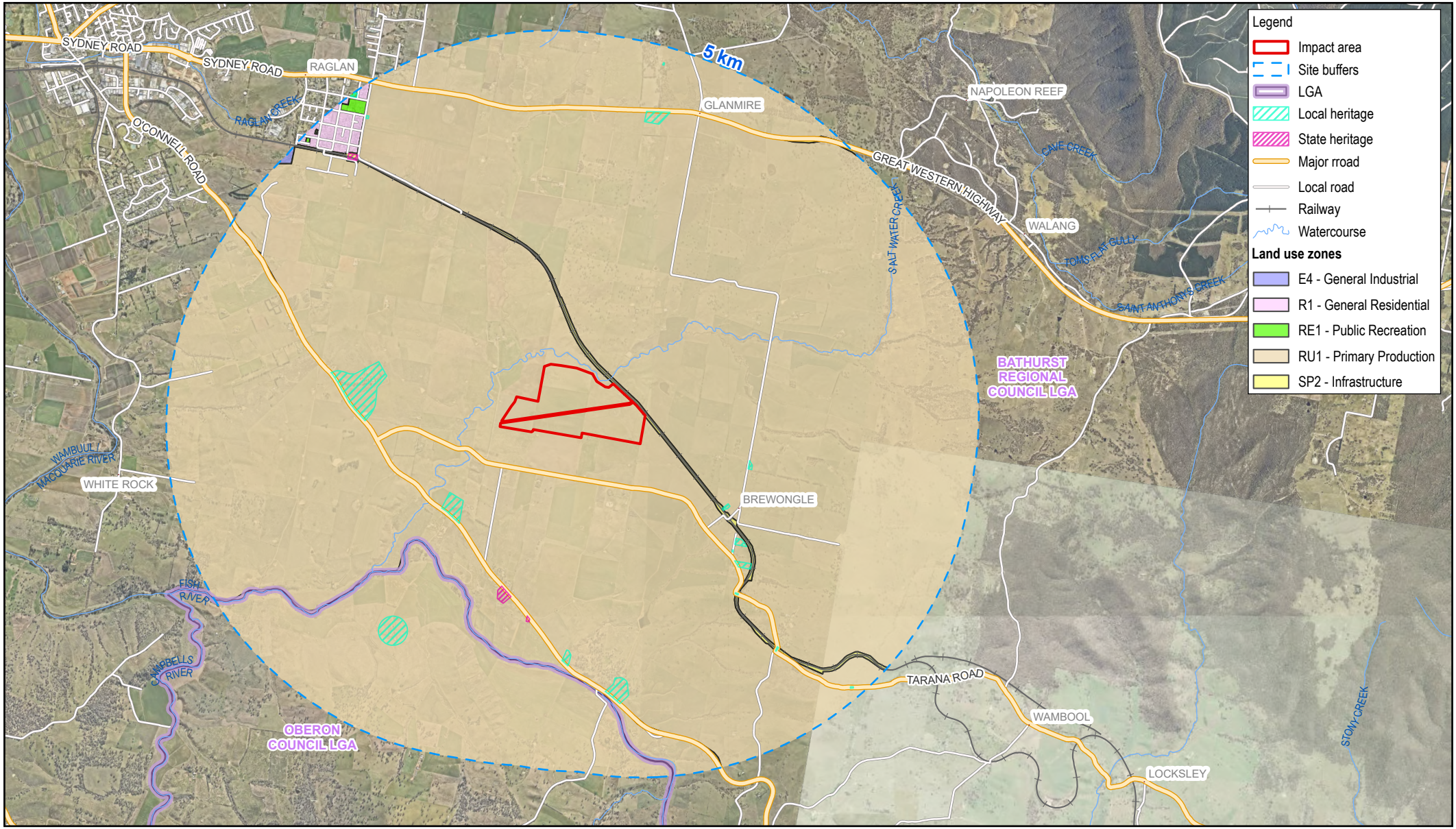
The *Large-Scale Solar Energy Guideline* (NSW Department of Planning and Environment, 2022) provides guidance on the planning framework for the assessment of large-scale solar energy projects; encourages the section of suitable sites for projects to avoid or reduce conflicts and impacts; provides guidance on how to measure and assess environmental impacts; and promotes meaningful, respectful and effective community and stakeholder engagement.

The guideline is supported by the Technical Supplement, which provides a detailed description of the landscape character and visual impact assessment process, including tools and requirements for assessing, evaluating and mitigating impacts. The Technical Supplement has been used as the basis for this assessment methodology, as required in the Project SEARs.

4.4.2 Local Character and Place Guideline 2019

The *Local Character and Place Guideline* (NSW Department of Planning and Environment, 2019) seeks to ensure local character is considered in decision making, and the identity and place attributes that make an area distinctive are maintained, enhanced and cultivated. The guideline recognises that places are multi-layered and diverse, and that there are a number of influences that contribute to, and impact local character.

The guideline stipulates that a local character statement should be prepared for different areas, to provide a reference for development proposals and decision making. This assessment outlines the landscape and visual elements that contribute to local character, potential impact of a proposal and mitigation measures to manage these impacts.



Paper Size ISO A4

0 1 2 3

Kilometres

N

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

GHD

Edify Energy Pty Ltd
Brewongle Solar Farm
LVIA

Project No. **12630552**
Revision No. **0**
Date **27/08/2024**

Land use zones and heritage

FIGURE 4.1

\\ghdnet\ghd\AU\Melbourne\Projects\31\12630552\GIS\Maps\Deliverables\12630552_LVIA.aprx
Print date: 27 Aug 2024 - 10:38

5. Landscape character assessment

This section provides an overview of the existing landscape and visual environment, and an assessment of impacts to landscape character.

5.1 Existing environment

The following provides a summary of the existing landscape and visual environment of the study area.

5.1.1 Land use and built form

The Project site is in the Bathurst Regional Council area, on land zoned as RU1 Primary Production. Land within the study area comprises largely of agricultural land currently used for crop production or livestock grazing, with single-storey residences and farm structures dispersed throughout.

The small village of Raglan is located on the north-western edge of the study area along the Great Western Highway. It comprises a grid network of residential streets, community facilities and an unused railway station. The Bathurst airport is located at Raglan, just beyond the study area. The small informal settlement of Brewongle is located approximately 1.3 km southeast of the Project. It comprises a scattering of informally arranged rural residences in the vicinity of the unused railway station.

The Great Western Highway, an historical connector between Bathurst and Sydney, traverses the northern part of the study area. The Main Western Railway Line crosses through the study area and forms a border to the Project on the north-eastern side. The XPT uses this line approximately once to twice daily in either direction, between Sydney and Bathurst and destinations further west. O'Connell Road to the west of the study area connects Bathurst to Oberon, and Tarana Road to the south of the Project forms a secondary connection to Lithgow. Existing overhead transmission lines are along roadsides, and a 132 kV line is present to the north of the Project through rural land.

5.1.2 Topography and hydrology

The study area is characterised by gently undulating open plains, rising in elevation and slope along the edges of the study area, particularly to the east, influenced by terrain associated with the foothills of the Great Dividing Range. High points include an elevation of up to approximately 880 m Australian height datum (AHD) to the east of the study area. Raglan is situated on the western side of a small ridgeline on the north-western side of the study area.

The Fish River is present to the south, flowing into the Macquarie River just beyond the study area. Salt Water Creek meanders close to the northern and western edges of the Project before flowing into the Fish River. These watercourses are fed by numerous minor water lines. Scattered farm dams are present within the Project site and surrounding rural landscape.

Refer to Figure 5.1 for topography and hydrology within the study area.

5.1.3 Vegetation

The study area is located within the Southeast highlands Bioregion in the Bathurst sub-region classification. Topographically, the dominant features of the Bioregion are plateau remnants and granite basins with prominent ridges. The Bioregion is dominated by a temperate climate characterised by warm summers and no dry season. Both soils and vegetation vary in relation to altitude, temperature and rainfall.

The study area has been historically cleared for settlement, grazing and agriculture. Rural land use primarily influences vegetation within the study area, comprising large paddocks of pastures and crops with few scattered trees. Native and exotic tree rows along fences and roads are present, with clusters of vegetation associated with residences. Higher elevations to the east appear treed, along with parts of the Fish River corridor. Some remnants of NSW Plant Community Types are present within the study area, including predominantly Southern Tableland Grassy Box Woodland, as well as Central and Southern Tableland River Oak Forest, Central West Stony Hills Stringybark-Box Forest, Southern Tableland Red Grass-Spear Grass Grassland, and Central West Creekflat Grassy Woodland (Department of Planning and Environment, 2022). Refer to Figure 5.2 for Plant Type Communities within the study area.

Vegetation surveys undertaken for the Project indicate the majority of the Project site is non-native (Plant Type Community 0), comprising of pasture improved paddocks.

5.1.4 NSW (Mitchell) Landscapes

The study area falls within three identified Mitchell landscapes. Bathurst Granites is present to the majority of the study area, Upper Macquarie Channels and Floodplain to either side of Fish River, and Mount Horrible Plateau on elevations to the east of the study area. Descriptions are provided below, sourced from *Descriptions for NSW (Mitchell) Landscapes Version 2* (Department of Environment and Climate Change NSW, 2002).

Bathurst Granites - Bgr

Undulating steep hills surrounded by a distinctive contact ridge with steep slopes, general elevation 650 to 1000 m, local relief 250 m. Shallow red earth or siliceous sands occur on ridges and gritty texture-contrast soils with yellow clay subsoils on the slopes with deep coarse sands along streamlines and dense black clays in small swamps. Woodland to open forest of yellow box (*Eucalyptus melliodora*) and white box (*Eucalyptus albens*) on ridges and slopes, manna gum (*Eucalyptus viminalis*) and river oak (*Casuarina cunninghamiana*) in valleys. Patches of black cypress pine (*Callitris endlicheri*) in rocky outcrops, grasslands with patchy snow gum (*Eucalyptus pauciflora*), and woodlands in cold air drainage hollows.

Upper Macquarie Channels and Floodplain - **Umc**

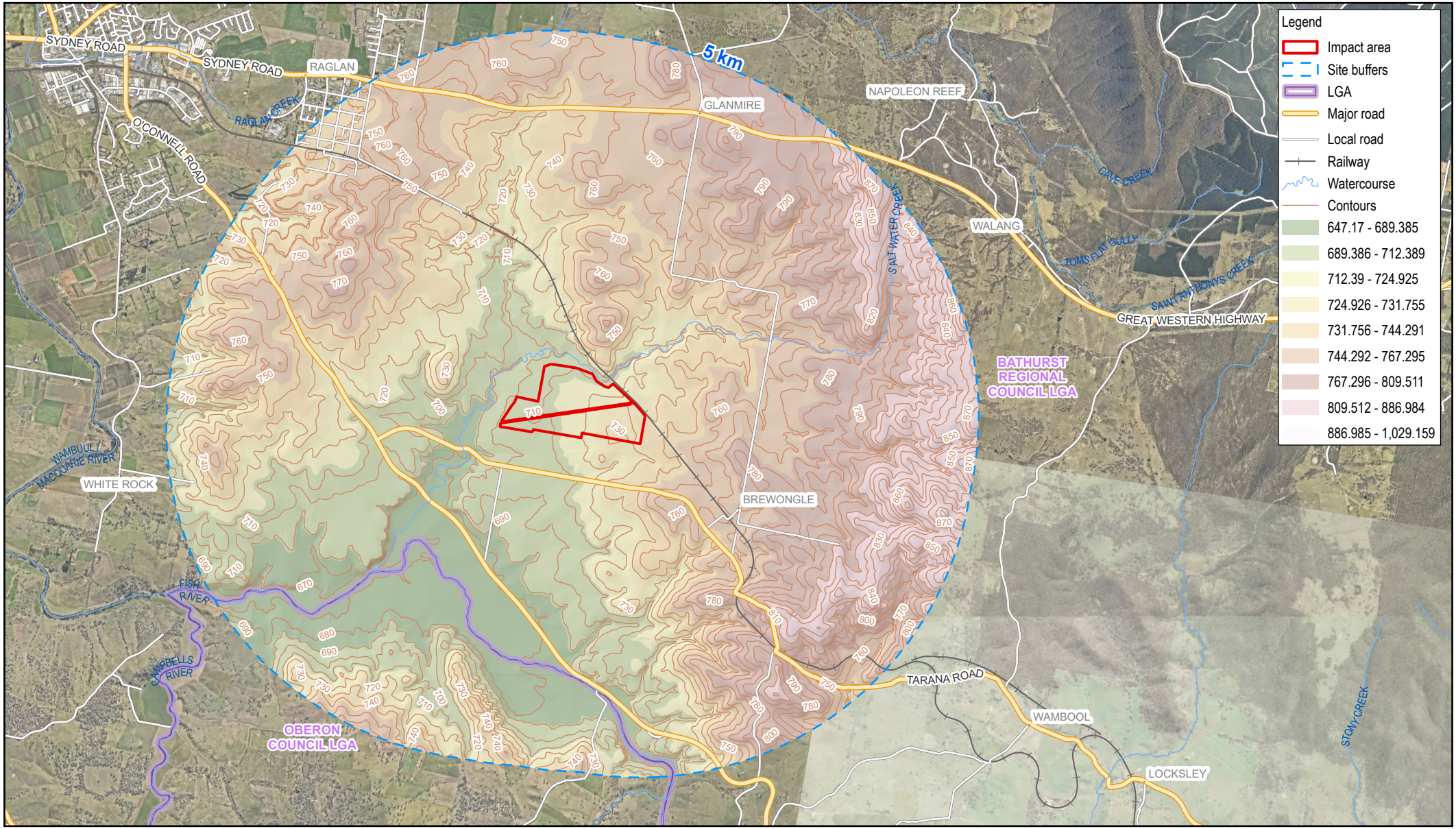
Macquarie Valley opens wider through the Bathurst granite, with a general elevation of 260 to 420 m and a local relief of 5 to 25 m. Buried river gravels along the ridges are generally parallel to the mainstream. Narrow floodplain benches with alluvial sands and gravels with minimal soil development. Red gradational earths and texture-contrast soils on terraces. River oak (*Casuarina cunninghamiana*) dominates the channel, open grassland with sparse yellow box (*Eucalyptus melliodora*) and Blakely's red gum (*Eucalyptus blakelyi*) on the hills.

Mount Horrible Plateau - **Mhp**

Dissected plateau undulating hills and steep wooded ridges. Robust structural control of topography, steep slopes, general elevation 750 to 1300 m, local relief 250 m. Red gradational well-structured and red texture-contrast soils on crests. Yellow earths on some sandstone, yellow texture contrast soils on lower slopes, dark clay loams and clays in broader creek lines. Various Eucalyptus species on slopes and ridges. Yellow box (*Eucalyptus melliodora*), Blakely's red gum (*Eucalyptus blakelyi*), and manna gum (*Eucalyptus viminalis*) along streams.

5.1.5 Local community values / community engagement

Edify Energy is currently undertaking engagement with nearby residents and the indigenous community. Initial engagement with the community resulted in the Project being set back from Tarana Road to mitigate visual impact to nearby residence. During the Aboriginal Cultural Heritage Assessment, four potential archaeological deposits (PADs) were identified within the Project area, and the design was subsequently modified to avoid these potential cultural significant areas. Community engagement in relation to the Landscape Concept Mitigation Plan resulted in additional screen planting added to the north-western perimeter of the Project (refer to section 9 and Appendix C).



Paper Size ISO A4

0 1 2 3

Kilometres

N

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

GHD

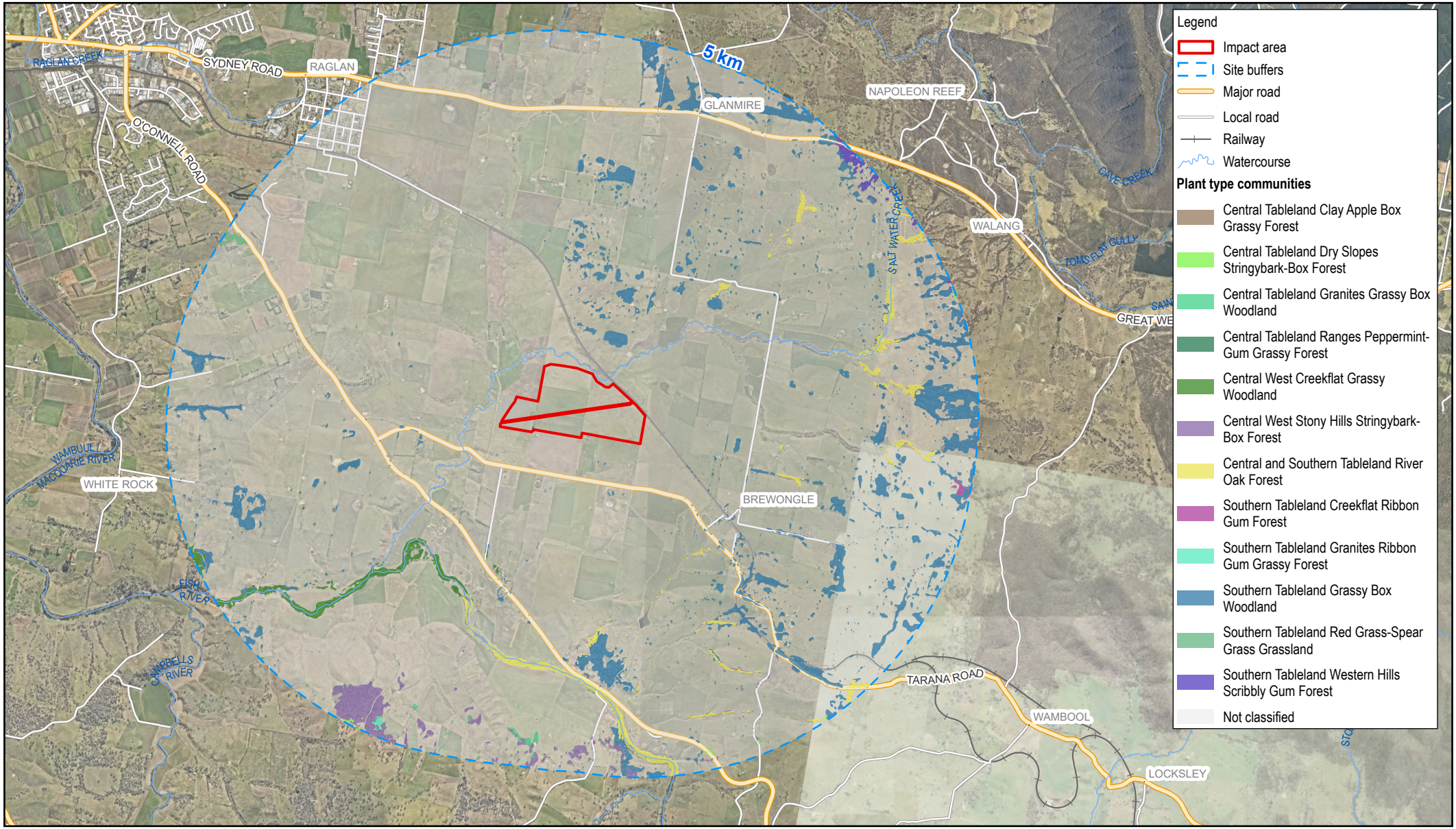
Edify Energy Pty Ltd
Brewongle Solar Farm
LVIA

Project No. **12630552**
Revision No. **0**
Date **24/07/2024**

Topography and hydrology

FIGURE 5.1

\\ghdnet\ghd\AU\Melbourne\Projects\31\12630552\GIS\Maps\Deliverables\12630552_LVIA.aprx
Print date: 24 Jul 2024 - 23:45



Paper Size ISO A4

0 1 2 3

Kilometres

N

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

GHD

Edify Energy Pty Ltd
Brewongle Solar Farm
LVIA

Project No. **12630552**
Revision No. **0**
Date **24/07/2024**

Vegetation

FIGURE 5.2

\\ghdnet\ghd\AU\Melbourne\Projects\31\12630552\GIS\Maps\Deliverables\12630552_LVIA.aprx
Print date: 24 Jul 2024 - 23:46

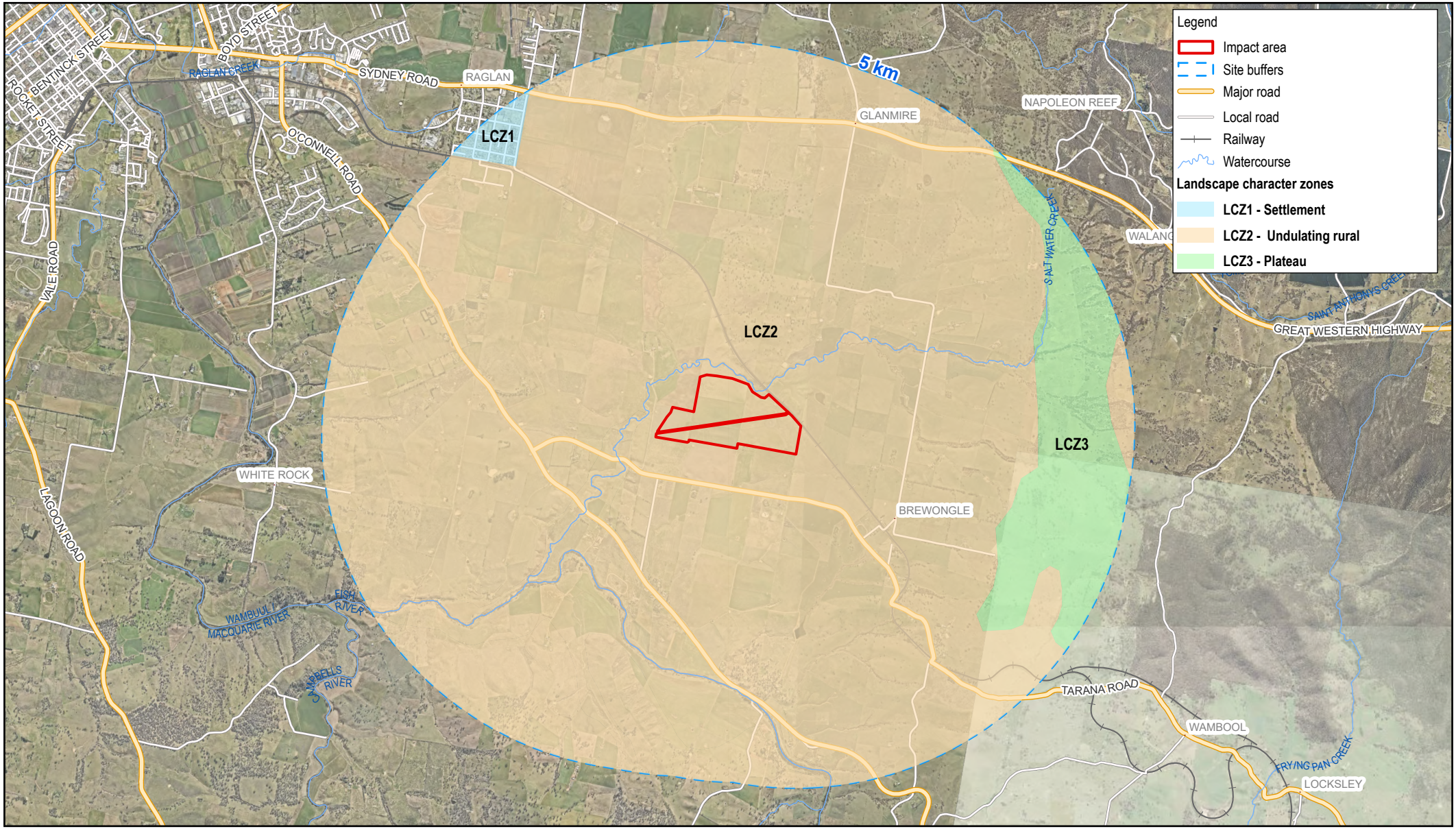
5.2 Landscape character zones

Landscape character zones have been defined within the study area based on the existing environment assessment. The LCZs represent broadly homogenous landscape characteristics and patterns.

The following LCZs have been defined:

– LCZ1 Settlement
– LCZ2 Undulating rural
– LCZ3 Plateau

Refer to Figure 5.3 for the location of the LCZs.



Paper Size ISO A4

0 1 2 3

Kilometres

N

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

Edify Energy Pty Ltd
Brewongle Solar Farm
LVIA

Project No. **12630552**
Revision No. **0**
Date **13/08/2024**

Landscape character zones

FIGURE 5.3

\\ghdnet\ghd\AU\Melbourne\Projects\31\12630552\GIS\Maps\Deliverables\12630552_LVIA.aprx
Print date: 13 Aug 2024 - 11:41

5.2.1 Landscape character zone 1: Settlement

LCZ1 is located to the north-western part of the study area and includes the village of Raglan. The key features of LCZ1 are described below and illustrated in Photo 5.1 and Photo 5.2. The LCZ1 impact assessment is outlined in Table 5.1.

Photo 5.1 ***Residential buildings of Raglan on the Great Western Highway***

Photo 5.2 ***View south along a local street in Raglan, from the Great Western Highway***

Key characteristics of LCZ1 include the following:

– Land uses are predominantly residential, with community facilities including a public park and public school. An historical railway station is present, however, no longer in use
– Built form typically comprises single-story residences
– Infrastructure include a grid pattern of sealed local roads, bordered by the Great Westen Highway to the north, and the Main Western Railway to the south. Footpaths are generally not present, aside from along the highway. Some cul-de-sacs are present. Overhead power lines are typical to one side of the street. An historical windmill is present on the eastern edge of the village.
– Topography is relatively flat, sloping gently to the north-east towards Raglan Creek, with an average elevation of approximately 740 m
– Vegetation comprises of garden planting to private property, some informal irregular street trees which are a combination of native and exotic, and mature pine trees to the perimeter of the public school
– Spatially, the LCZ is somewhat defined by built form and vegetation, however, as the settlement is border by open farmland on the eastern and southern edges, open distant views can be achieved from perimeter streets and across Ralph Cameron Park to the rural landscape and surrounding hills

Table 5.1 LCZ1 landscape character assessment

Landscape character zone	Sensitivity	Magnitude	Landscape character impact
LCZ1: Settlement	**Moderate** – Features within LCZ1 are in reasonably good condition and include heritage features of state and local value including Raglan Railway Station group (state level significance), Raglan Well and Windmill on Eugenie Street, and Raglan Hall and Former School on Christie Street. Local policy objectives aim to preserve the unique identity and distinct attributes that define the area. These focus on maintaining, enhancing, and cultivating the features that contribute to its character, including the preservation of locally important historical landmarks. Therefore, LCZ1 has a Medium landscape value. – LCZ1 has a Low landscape susceptibility to change – LCZ1 is considered to have a Low scenic quality with reference to the Technical Supplement criteria in Table 2.7	**Negligible** – The proposed alteration will not take place within LCZ1 – There would be no change to the landscape character as there is no loss of or change to the elements, features or characteristics of the landscape – Raglan is not within the Project ZTV due to intervening topography, therefore there is not expected to be any views of the Project from LCZ1	**Negligible**

5.2.2 Landscape character zone 2: Undulating rural

The majority of the study area was classified as LCZ2. The LCZ comprises undulating rural land and includes the small settlement of Brewongle, and the Fish River. The key features of LCZ2 are described below and the characteristics can be seen in Photo 5.3 to Photo 5.6. Refer to Table 5.2 for LCZ2 character assessment.

Photo 5.3 ***Typical roadside fencing, gently sloping topography, and windrow tree planting***

Photo 5.4 ***Scattered remnant vegetation on hills***

Photo 5.5 ***Tarana Road road bridge over railway, of local heritage significance***

Photo 5.6 ***Long open views across the LCZ, framed by distant tree covered ridges, and featuring windrow tree planting to property boundaries***

Photo 5.7 ***'Lockleigh residence in Brewongle, of local heritage significance***

Photo 5.8 ***Brewongle Lane***

Key characteristics of LCZ2 include the following:

– Built form includes a limited number of single storey rural dwellings dispersed throughout the LCZ, together with farm structures. A cluster of buildings are present forming the small settlement of Brewongle.
– Infrastructure includes standard post and wire fencing around paddocks and property boundaries. Roads are predominantly sealed, with a grass verge. Overhead transmission lines are present on major roads, and overhead transmission lines traverse the rural landscape. The Main Western Railway line crosses through the LCZ.
– Topography is gently undulating, with elevations of approximately 670 m to 820 m. Low points are associated with the Fish River
– Key waterways include the Fish River to the south, and Salt Water Creek, feeding into the Fish River from the north. Farm dams are present throughout the LCZ, often linked by ephemeral creeks.
– LCZ2 is largely cleared of native vegetation, however, some scattered / isolated vegetation is present, typically associated with topographical elevations and the Fish River. Vast swathes of cleared pasture grass creating a patchwork across the landscape. Perimeter exotic windrow planting is common, typically along the property boundaries of paddocks, or surrounding dwellings. There is typically an absence of tree planting to road corridors, however, some native trees are present.
– Spatially, this LCZ is expansive and open, framed by undulating topographical rises, distant tree covered ridges surrounding the low-lying valley, punctuated by exotic windrows

Table 5.2 LCZ2 landscape character assessment

Landscape character zone	Sensitivity	Magnitude	Landscape character impact
LCZ2: Undulating rural	**Moderate** – The landscape character elements are in reasonably good condition and contribute to the local character. Some remnant vegetation is present within the LCZ, however, its extent is limited. State and locally important features of heritage value area present, including the state significant The Grange residence on O'Connell Road, local heritage residences including Mayfield, Leeholme, Lockleigh, Cheriton, Carlton and others, and road bridges over the railway line. LCZ2 is therefore considered to have a Medium landscape value. – LCZ2 is considered to have a Moderate landscape susceptibility to change, as the type of development would be unlikely to have a significant adverse effect on the landscape character, condition or value, that could not be mitigated. This is due to the relatively low infrastructure, its relatively small scale, the gently undulating landscape, and its proposed location on lower elevations. – LCZ2 is considered to have a Low scenic quality with reference to the Technical Supplement criteria in Table 2.7	**Moderate** – The Project would introduce new built form infrastructure-type features to the rural landscape. This would be at odds with existing characteristic features and may have an adverse impact on the landscape character. However, the change has potential to be partly mitigated.	**Moderate**

5.2.3 Landscape character zone 3: Plateau

LCZ4 is located to the east of the study area and associated with higher treed elevations to the foothills of the Great Dividing Range. NSW (Mitchell) Landscapes defines this area as the Mount Horrible Plateau, described as dissected plateau undulating hills and steep wooded ridges (Department of Planning and Environment, 2016). Key features of LCZ3 are described below, and the characteristics are shown in Photo 6.9 to Photo 6.12. Refer to Table 5.3 for LCZ character assessment.

Photo 5.9 ***A view from elevation across the landscape characterised by undulating hills, and steep wooded ridges***

Photo 5.10 ***Forested areas interspersed with cleared plains***

Photo 5.11 ***Presence of small dams for agricultural purpose***

Photo 5.12 ***Open woodland vegetation within rural land uses***

Key characteristics of LCZ3 include the following:

– Agricultural land use, with built form including a limited number of rural dwellings and farm structures
– Infrastructure includes standard post and wire fencing around paddocks and property boundaries. Roads are unsealed private tracks within private property. Overhead transmission lines traverse through the LCZ.
– The landscape is characterised by undulating hills and steep wooded ridges. Elevations range from approximately 770 m to 880 m, with low points associated with Salt Water Creek.
– Salt Water Creek passes through LCZ3. Many farm dams are present within the character zone.
– Remnant native woodland vegetation is present along watercourses, ridges and slopes, forming an open woodland interspersed with cleared grassed areas for farmland. This includes NSW Plant Type Communities Southern Tablelands Grassy Box Woodland and Central and Southern Tableland River Oak Forest.
– Spatially, woodland vegetation frames distant scenic views from higher elevations or prevents open views of the landscape

Table 5.3 LCZ3 landscape character assessment

Landscape character zone	Sensitivity	Magnitude	Landscape character impact
LCZ3: Plateau	**Low** – The landscape character elements are in good condition and contribute to the local character. Some remnant vegetation is present within the LCZ, however, its extent is limited by areas that have been cleared for farmland. There are no features of heritage value present. LCZ3 is therefore considered to have a Medium landscape value. – LCZ3 is considered to have a Low landscape susceptibility to change, as the type of development would be unlikely to have a significant adverse effect on the landscape character, condition or value, that could not be mitigated – LCZ3 is considered to have a Moderate scenic quality with reference to the Technical Supplement criteria in Table 2.7	**Negligible** – The proposed alteration will not take place within LCZ3 – There would be no change to the landscape character as there is little or no loss of or change to the elements, features or characteristics of the landscape	**Negligible**

6. Preliminary visual assessment

The following section is work undertaken in 2023 as part of the Preliminary LVIA report submitting as part of the Project Scoping Report.

6.1 Sensitive receivers

As outlined in section 2.7.1, private receiver data was provided by Edify Energy for 4 km from the Project. In addition, a number of public receiver locations were identified by GHD based on a desktop assessment. Refer to Figure 6.1 for receiver locations. The reference numbers for receivers is based on the following:

– ‘R’ receivers: private (residential) receivers named and provided by Edify Energy
– ‘P’ receivers: public receiver locations identified by GHD
– Associated residence: the primary residence of the landholder associated with the Project

A total of 77 receivers were included in the preliminary analysis, including 68 private receivers, eight public receivers, and one associated residence.

6.2 Zone of theoretical visibility

A ZTV analysis (refer to Figure 6.1) and reverse ZTV analysis (refer to Figure 6.2) were undertaken for the solar farm, using parameters outlined in section 2.7.1. The ZTV reveals a patchwork of visibility spanning across the extent of study area, in response to the gently undulating terrain. Some key receivers not located within the viewshed include much of the Brewongle settlement, clusters of residences along O’Connell Road, and much of the Great Western Highway. The ZTV analysis results were used as criteria for the preliminary visual assessment.

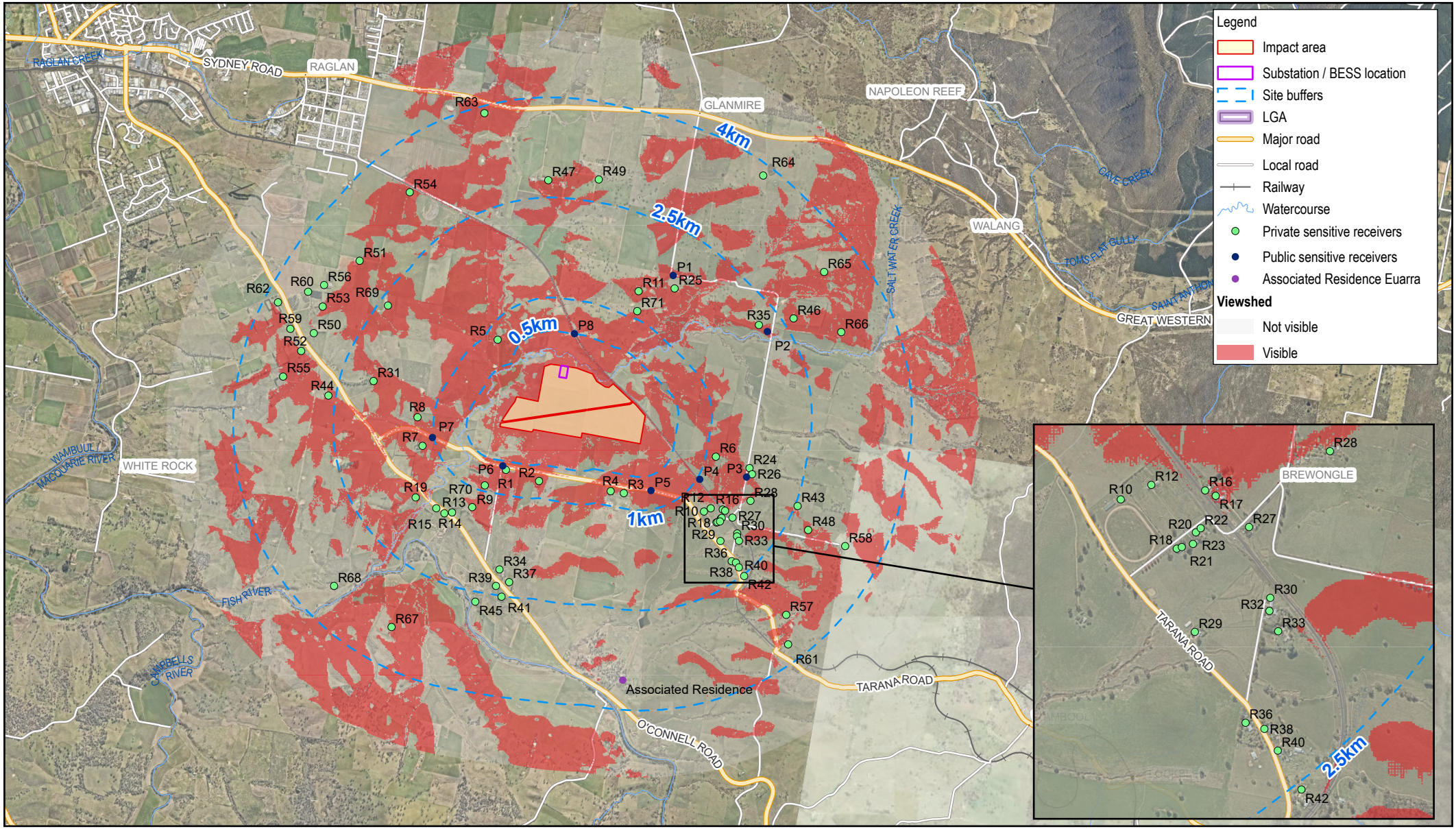
The reverse ZTV analysis reveals that the southern and central portion of the Project is theoretically visible to a larger number of receivers when compared to the northern part of the Project. Due to this finding, it is understood that Edify Energy has sought to refine the Impact Area by establishing a setback distance from the southern extent of the Project along Tarana Road to minimise this potential impact, which would provide a setback distance of over 625 m to the nearest southern receivers.

6.3 Preliminary visual assessment findings

The preliminary visual assessment was undertaken in accordance with the approach and parameters outlined in section 2.7. Refer to Appendix A for the preliminary visual assessment results. Of the 77 receivers included in the analysis, eleven (11 no.) have been identified as requiring a detailed visual assessment as part of the EIS. Of the eleven receivers, ten are private residences and one a public location. Refer to Table 6.1 for receivers requiring a detailed viewpoint assessment.

Table 6.1 Receivers identified as requiring a detailed viewpoint assessment

Receiver	Location
R1	142 Wests Lane, Brewongle, NSW 2795
R2	264 Tarana Road, Brewongle, NSW 2795
R3	390 Tarana Road, Brewongle, NSW 2795
R4	380 Tarana Road, Brewongle, NSW 2795
R5	155 Tarana Road, Brewongle, NSW 2795
R8	47 Tarana Road, Brewongle, NSW 2795
R9	3306 O’Connell Road, Brewongle, NSW 2795
R11	244 Brewongle Lane, Glanmire, NSW 2795
R17	758 Brewongle Lane, Brewongle, NSW 2795
R19	3443 O’Connell Road, Brewongle, NSW 2795
P8	Main Western Railway Line, north of the Project.



Paper Size ISO A4

0 1 2 3

Kilometres

N

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

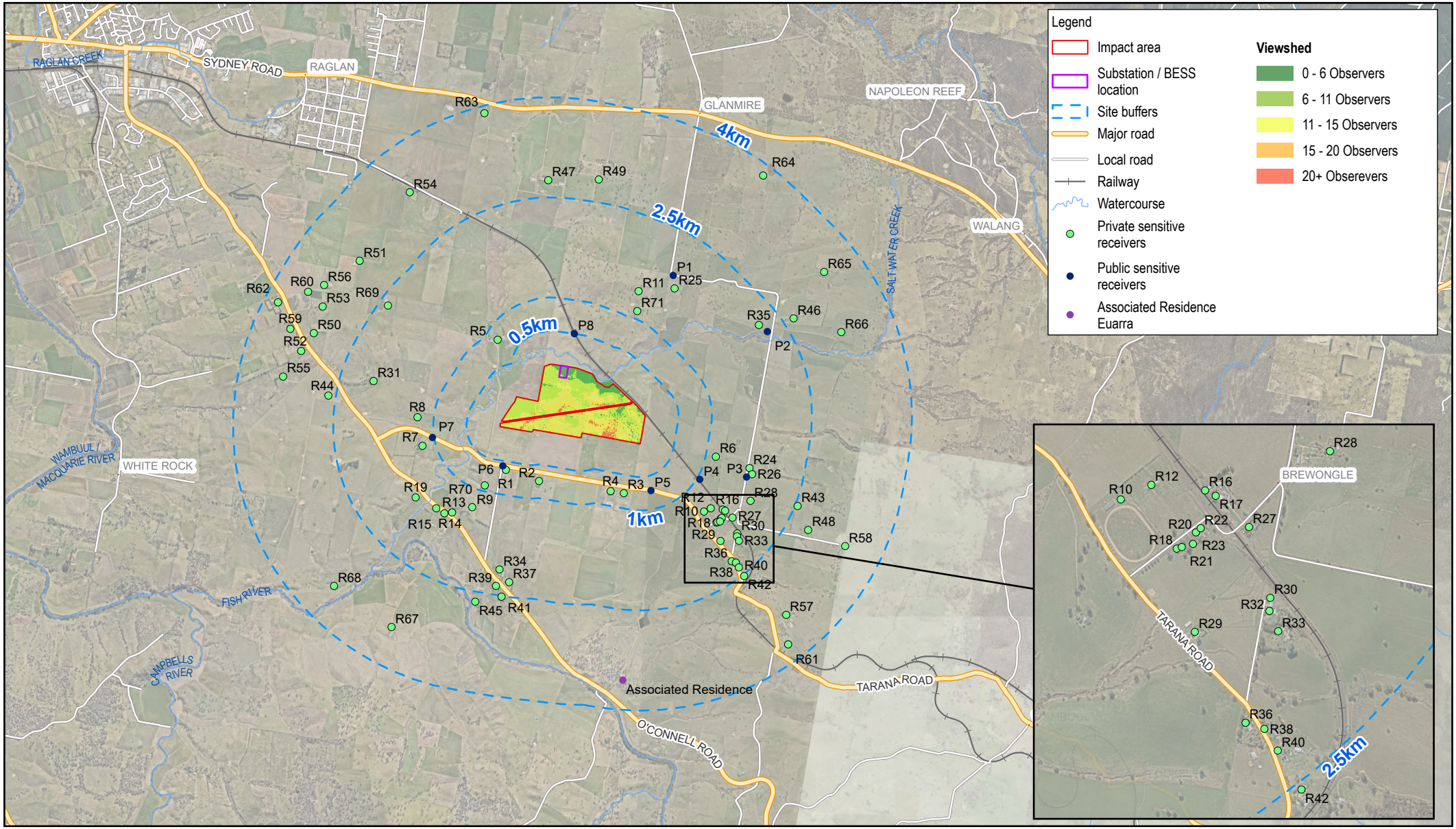
Edify Energy Pty Ltd
Brewongle Solar Farm
LVIA

Project No. **12630552**
Revision No. **0**
Date **12/08/2024**

Zone of theoretical visibility

FIGURE 6.1

\\ghdnet\ghd\AU\Melbourne\Projects\31\12630552\GIS\Maps\Deliverables\12630552_LVIA.aprx
Print date: 12 Aug 2024 - 23:22



Paper Size ISO A4

0 1 2 3

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

Edify Energy Pty Ltd
Brewongle Solar Farm
LVIA

Project No. **12630552**
Revision No. **0**
Date **12/08/2024**

Reverse zone of theoretical visibility

FIGURE 6.2

\\ghdnet\ghd\AU\Melbourne\Projects\31\12630552\GIS\Maps\Deliverables\12630552_LVIA.aprx
Print date: 12 Aug 2024 - 23:23

6.4 Additional receiver locations

After the preliminary visual assessment was undertaken, three additional private residential receiver locations were identified within the study area, as outlined below:

– R69: a recently built dwelling located on O'Connell Road, north-west of the Project
– R70: a potential dwelling on Wests Lane
– R71: a potential dwelling on Brewongle Lane

Refer to Table 6.2 for the preliminary assessment results for R69, R70, and R71, and Figure 6.1 for their location.

Table 6.2 Additional receiver locations preliminary visual assessment results

Receiver (within 4 km)	Distance to development (m)	Elevation of receiver (mAHD)	Relative height difference	Lowest point of design (mAHD)	Highest point of design (mAHD)	Horizontal field of view (degrees)	Horizontal field of view category	Sector (Technical Supplement)	Assessment	Within ZTV?	Detailed visual assessment required?
R69	2,378	746.81	44	703.01	741.58	29	21 - 30	1	No assessment required	Yes	No
R70	911	701.16	40	703.01	741.58	61	61-70	2	Assessment required	Yes	Yes
R71	1,150	733.93	39	703.01	741.58	63	61-70	2	Assessment required	Yes	Yes

The preliminary assessment results determined that a detailed assessment is required for R70 and R71. No assessment is required for R69.

7. Detailed viewpoint assessment

This section outlines the detailed viewpoint assessment process, including refining and classifying viewpoints, provision of evidence for locations where there was no line of sight to the Project, and a summary of visual impacts.

7.1 Refining and classifying viewpoints

A site inspection was undertaken on the 17 to 18 March 2024. Of the ten private dwelling locations identified in the preliminary visual assessment as requiring a detailed assessment, two locations (R3 and R5) provided access for visual assessment purposes, however, consent for photography from the dwelling was only provided for receiver R5. Therefore, for the remaining private receiver locations, including R3, a combination of wireframe viewpoint assessments and representative views have used for detailed assessment purposes.

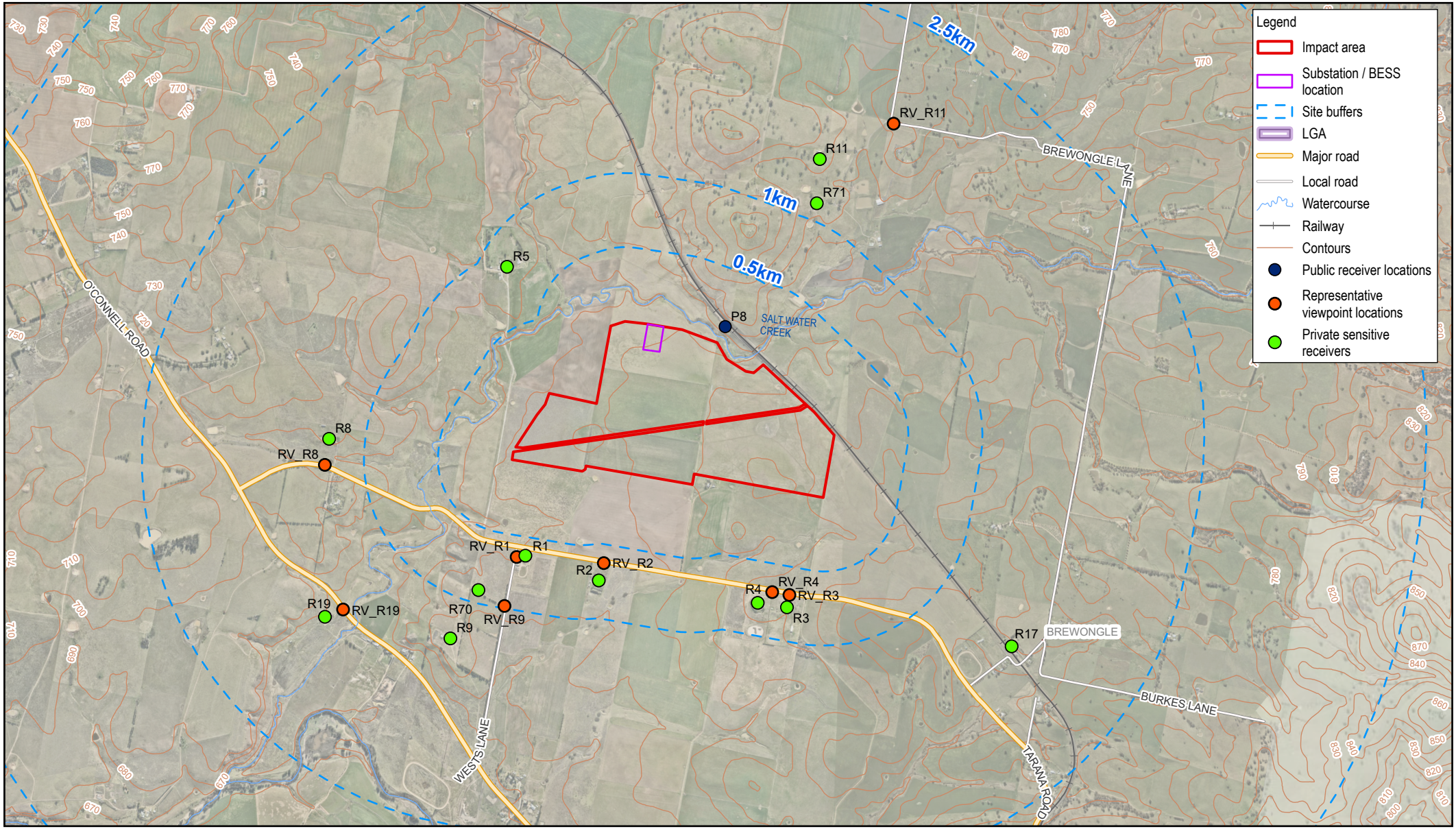
Regarding public receiver location P8 on the Main Western Railway Line, an alternative location closer to the Project site was accessed for assessment purposes.

Of the 11 locations requiring detailed assessment, based on an appraisal of the local area and review of representative views captured nearby, the site visit revealed that views of the Project are unlikely to be achieved from receiver location R17 and R19.

Refer to Figure 7.1 for viewpoint locations, and Appendix B for detailed viewpoint assessments.

Table 7.1 Viewpoint locations for detailed assessment

Viewpoint / receiver number	Viewpoint type	Location	Primary / secondary view	Line of sight to Project?	Detailed assessment provided?	Assessment type
R1	Rural dwelling	Tarana Road	Assumed primary view	Possible	Yes, refer to Appendix B	Wireframe, supported by representative view
R2	Rural dwelling	Tarana Road	Assumed primary view	Possible	Yes, refer to Appendix B	Wireframe, supported by representative photomontage view
R3	Rural dwelling	Tarana Road	Primary view	Yes	Yes, refer to Appendix B	Wireframe, supported by representative view
R4	Rural dwelling	Tarana Road	Assumed primary view	Possible	Yes, refer to Appendix B	Wireframe, supported by representative photomontage view
R5	Rural dwelling	Tarana Road	Primary view	Yes	Yes, refer to Appendix B	Photomontage
R8	Rural dwelling	Tarana Road	Assumed primary view	Possible	Yes, refer to Appendix B	Wireframe, supported by representative view
R9	Rural dwelling	Wests Lane	Assumed primary view	Possible	Yes, refer to Appendix B	Wireframe, supported by representative view
R11	Rural dwelling	Brewongle Lane	Assumed primary view	Possible	Yes, refer to Appendix B	Wireframe, supported by representative view
R17	Rural dwelling	Brewongle Lane, Brewongle	Assumed primary view	Unlikely	Yes, refer to Appendix B	Wireframe, supported by individual photos
R19	Rural dwelling	O'Connell Road	Assumed primary view	Unlikely	Yes, refer to Appendix B	Wireframe, supported by representative view
R70	Rural dwelling	Wests Lane	Assumed primary view	Possible	Yes, refer to Appendix B	Wireframe, supported by representative view
R71	Rural dwelling	Brewongle Lane	Assumed primary view	Possible	Yes, refer to Appendix B	Wireframe, supported by representative view
P8	Transport, passenger rail	Main Western Railway Line	N/A	Yes	Yes, refer to Appendix B	Photomontage



Paper Size ISO A4

0 500 1,000

Metres

N

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

GHD

Edify Energy Pty Ltd
Brewongle Solar Farm
LVIA

Project No. **12630552**
Revision No. **0**
Date **12/08/2024**

Receiver and viewpoint locations

FIGURE 7.1

\\ghdnet\ghd\AU\Melbourne\Projects\31\12630552\GIS\Maps\Deliverables\12630552_LVIA.aprx
Print date: 12 Aug 2024 - 23:23

7.2 Dwelling entitlements

In addition to existing dwellings, dwelling entitlements were considered for assessment of potential visual impacts, as outlined in the SEARs.

A dwelling permissibility search was undertaken by Bathurst Regional Council for 21 lots in an area approximately 2.5 km from the Project. Of these results, only those lots were considered for inclusion that had the following criteria:

– Lots greater than 100 hectares, as this is the minimum lot size for a dwelling in this location
– Vacant lots with no existing dwelling

Of the 21 lots considered, seven met the criteria of being vacant and greater than 100 hectares. The exception is lot 2 / DP 839259 which has two existing dwellings, however, has approval for a four lot subdivision.

The location of the seven lots for consideration is shown on Figure 7.2.

7.2.1 Preliminary assessment of lots

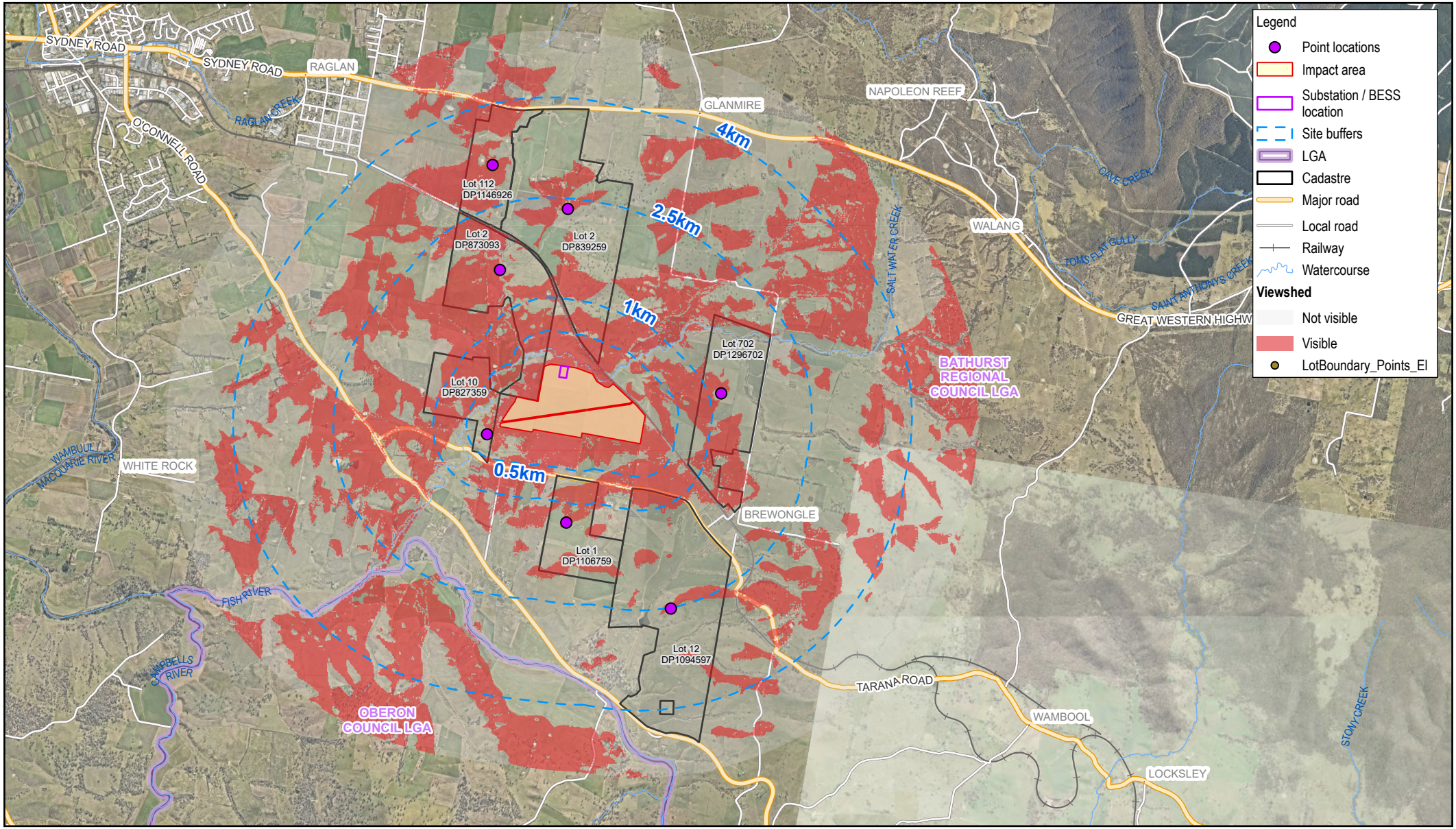
The seven lots identified were assessed using the Preliminary Assessment Tools provided in the Technical Supplement. For each lot, a point was generated in the centre of the lot. If this point location was not in the ZTV, it was moved to the nearest location within the Project ZTV. These point locations were used for the preliminary visual analysis criteria (refer to Figure 7.2 for point locations).

For Lot 10 / DP827359, as the owner had directed the LVIA practitioners to a specific location during the site inspection, an alternative point location was used for the analysis at the directed location. This location was closer to the Project than the centre of the lot..

Of the seven lots included in the analysis, the following three resulted in requiring a detailed viewpoint assessment:

– Lot 10 / DP827359
– Lot 702 / DP1296702
– Lot 1 / DP1106759

Refer to Table 7.2 for the preliminary assessment results for dwelling entitlements.



Paper Size ISO A4

0 1 2

Kilometres

N

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

Edify Energy Pty Ltd
Brewongle Solar Farm
LVIA

Project No. **12630552**
Revision No. **0**
Date **24/07/2024**

Location of dwelling entitlements

FIGURE 7.2

\\ghdnet\ghd\AU\Melbourne\Projects\31\12630552\GIS\Maps\Deliverables\12630552_LVIA.aprx
Print date: 24 Jul 2024 - 23:47

Table 7.2 Preliminary assessment results for dwelling entitlements

Lot / DP number	Distance to development (m)	Elevation of receiver (mAHD)	Relative height difference	Lowest point of design (mAHD)	Highest point of design (mAHD)	Horizontal field of view (degrees)	Horizontal field of view category	Sector (Technical Supplement)	Assessment	Detailed visual assessment required?
Lot 112 / DP1146926	3,106	732.01	39	703.01	741.58	30	21-30	1	No assessment required	No
Lot 2 / DP 839259	2,280	733.59	39	703.01	741.58	38	31-40	1	No assessment required	No
Lot 2 / DP 873093	1,594	704.91	39	703.01	741.58	45	41-50	1	No assessment required	No
Lot 10 / DP827359	235	696.51	45	703.01	741.58	56	51-60	4	Assessment required	Yes
Lot 702 / DP1296702	1,368	754.45	51	703.01	741.58	40	31-40	2	Assessment required for all viewpoints except road/rail	Yes
Lot 1 / DP1106759	1,259	705.89	39	703.01	741.58	77	71-130	2	Assessment required	Yes
Lot 12 / DP1094597	2,508	746.00	43	703.01	741.58	35	31-40	1	No assessment required	No

7.2.2 Detailed viewpoint assessment of dwelling entitlements

A wireframe assessment has been provided for Lot 10 / DP827359 due to its proximity to the Project, and for lot 702 / DP1296702 and Lot 1 / DP1106759, a discussion of possible impacts has been provided with reference to nearby receiver locations that have been assessed in this report.

Lot 10 / DP827359

Lot 10 / DP827359 is located to the west of the Project and adjacent to Tarana Road. This point location is approximately 230 m from the Project and up to a possible 56 degree horizontal field of view. The viewpoint sensitivity is very low due to there being no place of residence present. The scenic quality rating is low, as assessed during the site inspection. A wireframe assessment has been undertaken, with a magnitude rating of very low (5 cells) (refer to Appendix B), therefore the overall visual impact rating is determined to be very low.

Lot 702 / DP1296702

Lot 702 / DP1296702 is located to the east of the Project and adjacent to Brewongle Lane. The point location is approximately 1.4 km from the Project, with a possible horizontal field of view of 40 degrees.

To determine a likely visual impact, two assessed receivers locations were referred to with a similar distance to development and horizontal field of view, R5 and R11. R11 is a slightly further distance from the Project at 1.4 km, however, with a greater possible horizontal field of view of 56 degrees.

A scenic quality rating of moderate / low was given based on a balance of scenic quality for R5 and R11. Similarly, a magnitude rating of low / very low was assumed, based on the R5 and R11 magnitude ratings.

Refer to Table 7.3 for a comparison of criteria for nearby assessed receivers with Lot 702 / DP1296702.

Table 7.3 Comparison of criteria for nearby assessed receivers with Lot 702 / DP1296702

Viewpoint / receiver number	Distance to development (m)	Elevation (m AHD)	Horizontal field of view (degrees)	Scenic quality	Magnitude
Lot 702 / DP1296702	1,368	754.450	40	Moderate / Low (based on R5 and R11 scenic quality ratings)	Low / Very low (based on R5 and R11 magnitude ratings)
R5	0.8	746.5	70	Moderate	Low (8 cells)
R11	1,406	746.532	56	Low	Very low* (3 cells)

* Magnitude rating based on wireframe viewpoint assessment.

A viewpoint sensitivity rating of very low was given due to there being no place of residence present. Therefore an overall visual sensitivity rating of very low was determined. Based on the very low visual sensitivity and low / very low magnitude, the visual impact for Lot 702 / DP1296702 was determined to be very low (refer to Table 7.4).

Table 7.4 Visual impact assessment for Lot 702 / DP1296702

Viewpoint / receiver number	Viewpoint type	Location	Viewpoint sensitivity	Scenic quality	Visual sensitivity	Magnitude	Visual impact
Lot 702 / DP1296702	Residential, no place of residence present	Brewongle Lane	Very low	Low	Very low	Low / Very low^	**Very low^**

^Possible ratings based on nearby assessed receiver locations.

Lot 1 / DP1106759

Lot 1 / DP1106759 is located adjacent to Tarana Road, on the western side of the assessed receiver R4. To determine a likely visual impact, the nearby assessed receiver R4 criteria has been referred to (refer to Table 7.5).

A scenic quality rating of low was given based on the scenic quality for R4. Similarly, a magnitude rating of low was assumed, based on the R4 magnitude rating, noting that the magnitude for Lot 1 / DP1106759 is likely to be less than R4 due to a greater distance to development and lower horizontal field of view.

Table 7.5 Comparison of criteria for nearby assessed receiver with Lot 1 / DP1106759

Viewpoint / receiver number	Distance to development (m)	Elevation (mAHD)	Horizontal field of view (degrees)	Scenic quality	Magnitude
Lot 1 / DP1106759	1,259	705.89	77	Low (based on R4 scenic quality rating)	Low (based on R4 magnitude rating)
R4	778	740.48	93	Low	Low* (11 cells)

* Magnitude rating based on wireframe viewpoint assessment.

A viewpoint sensitivity rating of very low was given due to there being no place of residence present. Therefore an overall visual sensitivity rating of very low was determined. Based on the very low visual sensitivity and low magnitude, the visual impact for Lot 1 / DP1106759 was determined to be very low (refer to Table 7.6).

Table 7.6 Visual impact assessment for Lot 1 / DP1106759

Viewpoint / receiver number	Viewpoint type	Location	Viewpoint sensitivity	Scenic quality	Visual sensitivity	Magnitude	Visual impact
Lot 1 / DP1106759	Residential, no place of residence present	Tarana Road	Very low	Low	Very low	Low^	**Very low**

^Possible ratings based on nearby assessed receiver location, and if a dwelling were present.

7.3 Summary of visual impacts

A detailed viewpoint assessment was undertaken for 13 public and private locations (refer to Appendix B), and three dwelling entitlements. A combination of wireframe viewpoint assessments and photomontage assessments have been provided. Photomontages were provided for R5, P8, and representative views for R2 and R4.

All visual impact ratings for private receivers were low or very low, therefore no mitigation is required in accordance with the Technical Supplement. The visual impact rating for public receiver location P8 was found to be Moderate. The dwelling entitlements Lot 10 / DP827359, Lot 702 / DP1296702, and Lot 1 / DP1106759 were assessed as having impact ratings of very low.

Refer to Table 7.7 for a summary of visual impacts.

Table 7.7 Summary of visual impacts

Viewpoint / receiver number	Viewpoint type	Location	Viewpoint sensitivity	Scenic quality	Visual sensitivity	Magnitude	Visual impact
R1	Rural dwelling	Tarana Road	Moderate	Low	Moderate	Low* (7 cells)	**Low**
R2	Rural dwelling	Tarana Road	Moderate	Low	Moderate	Low* (10 cells)	**Low**
R3	Rural dwelling	Tarana Road	Moderate	Low	Moderate	Very low* (5 cells)	**Low**
R4	Rural dwelling	Tarana Road	Moderate	Low	Moderate	Low* (11 cells)	**Low**
R5	Rural dwelling	Tarana Road	Moderate	Moderate-low	Moderate	Low (8 cells)	**Low**
R8	Rural dwelling	Tarana Road	Moderate	Low	Moderate	Very low* (2 cells)	**Low**
R9	Rural dwelling	Wests Lane	Moderate	Low	Moderate	Very low* (4 cells)	**Low**
R11	Rural dwelling	Brewongle Lane	Moderate	Low	Moderate	Very low* (3 cells)	**Low**
R17	Rural dwelling	Brewongle Lane, Brewongle	Moderate	Low	Moderate	Very low* (2 cells)	**Low**
R19	Rural dwelling	O'Connell Road	Moderate	Low	Moderate	Very low* (2 cells)	**Low**
R70	Rural dwelling	Wests Lane	Moderate	Low	Moderate	Very low* (5 cells)	**Low**
R71	Rural dwelling	Brewongle Lane	Moderate	Low	Moderate	Very low* (6 cells)	**Low**
P8	Transport, passenger rail	Main Western Railway Line	Very low	Low	Very low	Very high (59 cells)	**Moderate**
Lot 10 / DP827359	Residential, no place of residence present	Tarana Road	Very low	Low	Very low	Very low* (5 cells)	**Very low**
Lot 702 / DP1296702	Residential, no place of residence present	Brewongle Lane	Very low	Low	Very low	Low / Very low^	**Very low**
Lot 1 / DP1106759	Residential, no place of residence present	Tarana Road	Very low	Low	Very low	Low^	**Very low**

* Magnitude rating based on wireframe viewpoint assessment.

^Possible ratings based on nearby assessed receiver locations.

7.4 Construction impacts

Construction works would result in temporary landscape and visual impacts which may extend beyond the Project site. Impacts associated with construction activities are generally of greater magnitude than those associated with operation, however, are temporary in nature.

Landscape and visual impacts during construction resulting from activities outlined in section 3 may include:

Installation of solar farm

– The presence of earth-moving equipment, and construction vehicles and machinery
– The presence of incomplete structures

The presence of activities associated with:

– Vegetation removal within the Project site
– Installation of solar arrays, substation, BESS, and internal reticulation network
– Installation of overhead transmission line connection to existing transmission lines
– Construction of operation and maintenance buildings, and car parking area
– Installation of internal road network
– Installation of perimeter fencing

Traffic

– The presence of construction traffic and workers

Daily vehicular movements during the construction period expected within the study area along Tarana Road.

Compound areas

The presence of:

– Activities associated with the importation and storage of construction equipment
– Materials stockpiling
– Carparking
– Site office and amenities

The solar farm is proposed on the south-eastern side of a shallow valley associated with Salt Water Creek. The substation location is proposed on a lower elevation on the northern side of the Project site. Two compound areas are proposed, one to the north adjacent to the substation and BESS area, and the other located to the south of the Project site, adjacent to the site access point.

Installation of the solar farm may be visible from all assessed locations with likely visibility of the Project (refer to Appendix B). The greatest visibility is likely to be from receiver R5 and residences along Tarana Road. Users of the Main Western Railway Line would also have close-range open views of construction activities. Residents along Tarana Road are likely to see an increase in traffic during the construction phase. The southern construction compound is likely to be somewhat shielded by landform and intervening built form and vegetation from residences on the eastern side of Tarana Road (R3 and R4).

8. Cumulative impacts

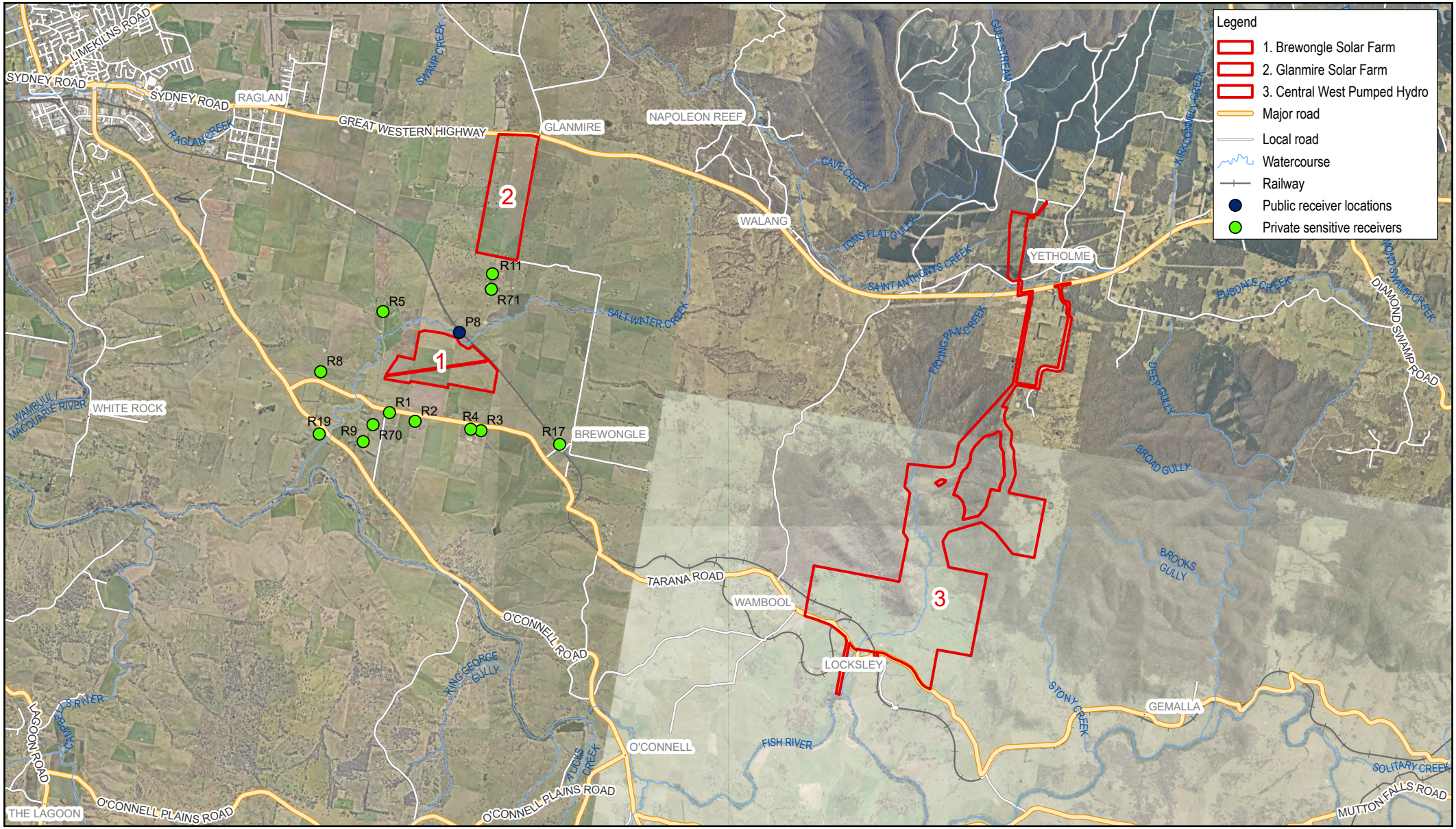
Cumulative impacts can be defined as the successive, incremental, and combined effect of multiple impact, which may in themselves by minor, but could become significant when considered together. The study area for the cumulative visual assessment included proposed renewable energy developments potentially within the same view or landscape.

Three projects have been identified for consideration of cumulative landscape and visual impact. These include Glanmire Solar Farm, Central West Pumped Hydro, and Panorama Battery Energy Storage System. Due to the distance from the Project of the Panorama Battery Energy Storage System (approximately 15 km), an assessment has not been provided for this project.

Refer to Figure 8.1 for the location of the proposed Glanmire Solar Farm and Central West Pumped Hydro, and Table 8.1 for a discussion of potential cumulative impacts. The greatest potential for cumulative impacts are likely to be from the Project and Glanmire Solar Farm due to the proximity to the Project.

As part of the cumulative assessment, the following available reports were referred to:

– *Glanmire Solar Farm Landscape and Visual Impact Assessment* (Iris, 2022)
– *Central West Pumped Hydro Project Scoping Report* (Atco, 2022)
– *Scoping Report, Panorama Battery Energy Storage System* (BESS) (SLR Consulting, 2022)



Paper Size ISO A4

0 1 2

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

Edify Energy Pty Ltd
Brewongle Solar Farm
LVIA

Proposed nearby renewable energy developments

Project No. **12630552**
Revision No. **0**
Date **15/08/2024**

FIGURE 8.1

\\ghdnet\ghd\AU\Melbourne\Projects\31\12630552\GIS\Maps\Deliverables\12630552_LVIA.aprx
Print date: 15 Aug 2024 - 14:33

Data source: Base data, NSW 2023; public_NSW_Imagery: © Department of Customer Service 2020
Nearmap WMS Server: Base Imagery Extracted 15/08/2024. Created by: dbbanatin

Table 8.1 Discussion of potential cumulative impacts from the Project and nearby renewable energy developments

Glanmire Solar Farm	Approximately 600 MW solar farm.	Approximately 1.7 km.	Planning – Approved.	Unknown.	Both the Project and Glanmire Solar Farm are similar in form, with the Project being larger in scale. Although not immediately adjacent, both projects may read as one development. Although the construction timeframe for Glanmire Solar Farm is unknown, as it is already approved, it is likely to commence within the next two years. Therefore there is a reasonable possibility that the projects may have overlapping timescales. When considering receivers assessed at a detailed level in this report, there is a reasonable possibility of being able to see both developments from Brewongle Lane, adjacent to the proposed Glanmire Solar Farm, while looking in the same direction. There is reasonable possibility of being able to see both developments from R11, by turning to look in different directions, but not while looking in the same direction. For other private receivers, it is unlikely that both developments would be visible from the same viewing location. The two developments would likely be frequently sequential from the Main Western Railway Line, and occasionally sequential from local roads including Brewongle Lane and Tarana Road.
Central West Pumped Hydro	325 MW pumped hydro storage development, including construction of an upper and lower reservoir with connecting pipeline.	Approximately 7.5 km.	Planning.	Construction expected to commence in 2023, and operation in 2026.	Both the Project and the Central West Pumped Hydro are very different in terms of scale and form. The Central West Pumped Hydro Scoping Report indicates that construction is likely to commence in 2023, and operation in 2026, however, as an EIS is not yet on Exhibition, construction is likely to be at a later date. Therefore, there is reasonable possibility that both projects may be implemented within a similar or overlapping timescale. It is unlikely that both developments would be visible from many of the viewing locations assessed in this report from the same viewing location, when looking in one direction. However, there is a reasonable possibility of being able to see both developments from R5, however, any view of the Central West Pumped Hydro project is likely to be low to negligible. Views of both developments would be rarely sequential, due to the distance between the proposed projects.
Panorama Battery Energy Storage System	A BESS with a capacity of 100 MW 200 MW Hours.	Approximately 15 km.	Planning.	Unknown.	Cumulative impacts unlikely due to distance from Project.

9. Mitigation measures

The following section recommends mitigation measures that respond to issues arising within the assessment that have the potential to adversely impact:

– The character of the landscape
– Views to the Project from affected visual receivers

The following mitigation measures address the most visual elements of the Project, as well as referencing any relevant considerations drawn from the legislation and policy review.

9.1 Landscape mitigation

Landscape mitigation is proposed as outlined on the Landscape Concept Mitigation Plan (refer to Appendix C).

With reference to Table 2.10 from the Technical Supplement, mitigation is required for receivers with a Moderate visual impact rating. No mitigation is required for receivers with a visual impact rating of low or very low.

9.1.1 Main Western Railway

Public receiver P8 was the only assessed receiver with a Moderate visual impact rating. Mitigation in the form of on-site perimeter planting was explored for this viewpoint location. However, due to the following factors, it was determined that mitigation would not be appropriate and would be difficult to achieve for P8:

– The proximity of P8 to the Project (117 m) and therefore large magnitude rating
– The rail line is higher in elevation than the P8 viewpoint location, therefore the magnitude of views from the actual rail line is likely to be greater than what has been assessed, proving difficult to mitigate in the short to medium term with on-site perimeter planting
– Viewers from passing trains would be moving through the study area at speed (up to a possible 160 km/hr), and at a frequency on one to two times per day in either direction. Views would therefore be short-term in nature and achieved while passing through the study area.

9.1.2 Tarana Road

Although all assessed private receivers on Tarana Road (R1, R2, R3, and R4) resulted in a visual impact rating of low, proactive mitigation has been proposed to screen views of the Project from private receiver locations on Tarana Road. This proposed landscape mitigation includes the following:

– Approximately 2.17 linear km of on-site perimeter planting to southern boundary of the Project, as outlined on the Landscape Concept Mitigation Plan (refer to Appendix C). This would be 10 m wide, and comprise of a native species mix that responds to the existing landscape character setting, and a composition designed for adequate screening.
– The planting would be proposed within the Impact Area, allowing sufficient space for Asset Protection Zones (APZ) and internal road requirements

As part of the project design focus on the ‘avoid, minimise, offset’ mitigation strategy to reduce environmental impacts, this approach includes reducing the Project area to minimise impact on Tarana Road and nearby residents.

9.1.3 Receiver R5

Although receiver R5 resulted in a visual impact rating of low, in response to landholder engagement, proactive mitigation has been proposed to screen views of the Project. The proposed landscape mitigation would include the following:

– Approximately 1.1 linear km of on-site perimeter planting to a section of the north-western boundary, as outlined on the Landscape Concept Mitigation Plan (refer to Appendix C). This would be 10 m wide, and comprise of a native species mix that responds to the existing landscape character setting, and a composition designed for adequate screening.
– The perimeter planting would be proposed within a 'user restricted area' which has been restricted from infrastructure to allow for a buffer to neighbouring properties. The proposed planting would be in a location allowing suitable distance for APZ and internal road requirements, and would be within the Impact Area of the Project.

9.2 Site design

Proposed mitigation for site design components includes the following:

– The colours, materials and finishes should be compatible with surrounding visual environment of LCZ2, where possible. The use of a natural colour palette to help visually conceal or blend some of the Project's main visual features including the BESS, office and maintenance buildings and substation into the landscape is recommended. Bright colours that would draw the eye and unnecessary reflective surfaces should be avoided.
– Minimise earthworks to retain existing drainage patterns, where possible
– As proposed for the Project, utilising the solar farm for grazing as part of an agri-solar approach would assist in retaining the existing rural character
– Planting plans to be designed in accordance with (NSW Rural Fire Service, 2018)

9.3 Construction phase

Proposed mitigation for construction phase activities includes the following:

– Ensure construction equipment, stockpiles, and other visible elements are located away from the key sensitive receiver views. Should any equipment or stockpiles be located in a visually prominent location for any reasonable period of time, incorporate screening measures, such as hoarding and buffer planting, and practices to ensure the site is kept tidy and visibility reduced.
– Implement no-go-zones and tree protection fencing to areas of existing vegetation which is proposed to be retained for the duration of the construction period
– Remediate any earthworks undertaken during construction
– Implement early tree planting, including use of established specimens, by undertaking buffer planting in advance of construction works, particularly in locations where short-term visual mitigation would be beneficial, such as along site boundaries

10. Conclusion

This LVIA has been undertaken to determine the landscape and visual impacts of the Project, in accordance with the SEARs.

The Project is located approximately 12 km from Bathurst town centre in the Bathurst Regional LGA, and approximately 4 km from the settlement of Raglan. The landscape context is a rural setting comprising of land used for livestock grazing, with scattered rural residences interspersed. The Project is proposed to lower elevations within a shallow valley, framed by undulating rises. Salt Water Creek is adjacent to the Project, flowing south into the nearby Fish River.

Three landscape character zones were defined within the study area, LCZ1 settlement, LCZ2 undulating rural, and LCZ3 plateau (refer to section 5.2). A summary of landscape character impacts are shown in Table 10.1. The Project is located within LCZ2 and would introduce new built form features to the scenic rural landscape that would have a moderate impact to the landscape character.

Table 10.1 Summary of landscape character impacts

Landscape character zone	Sensitivity	Magnitude	Landscape character impact
LCZ1: Settlement	Moderate	Negligible	**Negligible**
LCZ2: Undulating rural	Moderate	Moderate	**Moderate**
LCZ3: Plateau	Low	Negligible	**Negligible**

A preliminary visual assessment was undertaken as part of the Project Scoping Report, using the tools and approached provided in the Technical Supplement (refer to section 6). Seventy seven (77 no.) sensitive receivers were identified within a 4 km study area, comprising of both public and private receiver types. The results determined that ten (10 no.) private receivers and one (1 no.) public receiver location would require a detailed viewpoint assessment. Subsequent findings after the preliminary visual assessment was undertaken revealed that an additional two (2 no.) private receiver locations also required a detailed viewpoint assessment.

A site inspection was undertaken on 17 to 18 March 2024, and additional supplementary visit in January 2024. Of the ten private dwelling locations identified in the preliminary visual assessment as requiring a detailed assessment, two locations (R3 and R5) provided access for visual assessment purposes, however, consent for photography from the dwelling was only provided for receiver R5. Public location P8 was visited for site photography, and a location closer to the Project was used for detailed viewpoint assessment.

A detailed viewpoint assessment was provided for all required locations, using either a photomontage, or a combination of wireframe viewpoint assessments and representative views (refer to Appendix B). The findings of the assessment were that all private receivers resulted in a low visual impact, and P8, representing the Main Western Railway Line, resulted in a moderate visual impact due to the proximity to the Project and subsequent very high magnitude.

Seven lots with dwelling entitlements were identified and assessed using the preliminary assessment tools and approach outlined in the Technical Supplement, resulting in three lots determined to require a detailed visual assessment. A wireframe assessment has been provided for Lot 10 / DP827359 due to its proximity to the Project, and for lot 702 / DP1296702 and Lot 1 / DP1106759, a discussion of possible impacts has been provided with reference nearby receiver locations that have been assessed in this report (refer to section 7.2). All three dwelling entitlements resulted in a very low visual impact.

Refer to Table 7.7 for a summary of visual impacts.

A description of potential construction impacts has been provided in section 7.4. Although the landscape and visual impacts associated with the construction activities are expected to be of greater magnitude than those associated with operation, as these impacts have a short duration and are temporary in nature, their significance of impact is limited.

Three nearby renewable energy projects were included in the assessment of cumulative impacts, including Glanmire Solar Farm, Central West Pumped Hydro, and Panorama Battery Energy Storage System. The greatest potential for cumulative impacts are likely to be from the Project and Glanmire Solar Farm due to the proximity to the Project.

Mitigation measures and a Landscape Concept Mitigation Plan have been provided in section 9 and Appendix C. Although not technically required with reference to the Technical Supplement, proactive perimeter screen planting is proposed to the southern Project boundary to mitigate views from Tarana Road, and the north-western boundary to mitigate views from receiver R5. All proposed planting would include appropriate species that would complement the existing landscape character and conditions. Mitigation for P8 representing the Main Western Railway Line was determined not to be appropriate and difficult to achieve due to the proximity to the Project, elevation, and speed at which viewers would be passing through the study area. The proposed agri-solar approach would assist in integrating the Project into the existing rural setting.

11. References

Atco. (2022). *Central West Pumped Hydro Project Scoping Report.*

Department of Environment and Climate Change NSW. (2002). *Descriptions for NSW (Mitchell) Landscapes Version 2.*

Department of Planning and Environment. (2016). *NSW (Mitchell) Landscapes - version 3.1.*

Department of Planning and Environment. (2022). *NSW State Vegetation Types Map.*

Iris. (2022). *Glanmire Solar Farm Landscape and Visual Impact Assessment.*

Landscape Institute and Institute of Environmental Management & Assessment. (2013). *Guidelines for Landscape and Visual Impact Assessment (Third edition.).* Routledge.

Molino Stewart Pty Ltd. (2019). *Bathurst Region Vegetation Management Plan 2019.*

Natural England, Scottish Natural Heritage and Countryside Council. (2011). *Landscape Character Assessment Guidance.*

NSW Department of Planning and Environment. (2019). *Local Character and Place Guideline.*

NSW Department of Planning and Environment. (2022). *Central West and Orana Regional Plan 2041.*

NSW Department of Planning and Environment. (2022). *Large-Scale Solar Energy Guideline.*

NSW Department of Planning and Environment. (2022, August). *Technical Supplement - Landscape and Visual Impact Assessment, Large-Scale Solar Energy Guideline.*

NSW Environment and Heritage. (2024, August 6th). *State Heritage Inventory*. Retrieved from https://www2.environment.nsw.gov.au/topics/heritage/search-heritage-databases/state-heritage-inventory

NSW Government. (2013). *Oberon Local Environmental Plan 2013.*

NSW Government. (2014). *Bathurst Regional Local Environmental Plan 2014.*

NSW Rural Fire Service. (2018). *Standards for asset protection zones.* NSW Rural Fire Service,.

SLR Consulting. (2022). *Scoping Report, Panorama Battery Energy Storage System (BESS).*

Transport for New South Wales. (2023). *Environmental impact assessment practice note EIA-N04 - Guideline for landscape character and visual impact assessment, Version 2.2.*

Appendices

Appendix A

Preliminary visual assessment results

Receiver (within 4 km)	Distance to development (m)	Elevation of receiver (mAHD)	Relative height difference	Lowest point of design (mAHD)	Highest point of design (mAHD)	Horizontal field of view (degrees)	Horizontal field of view category	Sector (Technical Supplement)	Assessment	Within ZTV?	Detailed visual assessment required?
P8	502	722.42	39	703.01	741.58	85	71 - 130	4	Assessment required	Yes	Yes
R5	811	708.30	39	703.01	741.58	70	61 - 70	2	Assessment required	Yes	Yes
R3	772	734.17	39	703.01	741.58	82	71 - 130	2	Assessment required	Yes	Yes
R4	778	740.48	39	703.01	741.58	93	71 - 130	2	Assessment required	Yes	Yes
R1	625	702.69	39	703.01	741.58	89	71 - 130	3	Assessment required for all viewpoints except road/rail	Yes	Yes
R17	1621	759.11	56	703.01	741.58	31	31 - 40	2	Assessment required for all viewpoints except road/rail	Yes	Yes
R11	1406	746.53	44	703.01	741.58	56	51 - 60	2	Assessment required for all viewpoints except road/rail	Yes	Yes
R8	1242	704.12	39	703.01	741.58	31	31 - 40	2	Assessment required for all viewpoints except road/rail	Yes	Yes
R2	745	708.42	39	703.01	741.58	107	71 - 130	3	Assessment required for all viewpoints except road/rail	Yes	Yes
R19	1649	683.10	58	703.01	741.58	34	31 - 40	2	Assessment required for all viewpoints except road/rail	Yes	Yes
R9	1276	705.20	39	703.01	741.58	52	51 - 60	2	Assessment required for all viewpoints except road/rail	Yes	Yes

Receiver (within 4 km)	Distance to development (m)	Elevation of receiver (mAHD)	Relative height difference	Lowest point of design (mAHD)	Highest point of design (mAHD)	Horizontal field of view (degrees)	Horizontal field of view category	Sector (Technical Supplement)	Assessment	Within ZTV?	Detailed visual assessment required?
P4	1040	745.62	43	703.01	741.58	36	31 - 40	2	Assessment required for all viewpoints except road/rail	No	No
R14	1543	676.64	65	703.01	741.58	40	31 - 40	2	Assessment required for all viewpoints except road/rail	No	No
R13	1472	678.64	63	703.01	741.58	43	41 - 50	2	Assessment required for all viewpoints except road/rail	No	No
R15	1551	677.70	64	703.01	741.58	38	31 - 40	2	Assessment required for all viewpoints except road/rail	No	No
R7	1195	706.60	39	703.01	741.58	34	31 - 40	2	Assessment required for all viewpoints except road/rail	No	No
P7	1023	698.27	43	703.01	741.58	36	31 - 40	2	Assessment required for all viewpoints except road/rail	Yes	No
P6	574	702.13	39	703.01	741.58	87	71 - 130	3	Assessment required for all viewpoints except road/rail	Yes	No
R16	1582	758.01	55	703.01	741.58	32	31 - 40	2	Assessment required for all viewpoints except road/rail	No	No
P5	720	746.50	43	703.01	741.58	64	61 - 70	3	Assessment required for all viewpoints except road/rail	Yes	No

Receiver (within 4 km)	Distance to development (m)	Elevation of receiver (mAHD)	Relative height difference	Lowest point of design (mAHD)	Highest point of design (mAHD)	Horizontal field of view (degrees)	Horizontal field of view category	Sector (Technical Supplement)	Assessment	Within ZTV?	Detailed visual assessment required?
R10	1395	749.70	47	703.01	741.58	38	31 - 40	2	Assessment required for all viewpoints except road/rail	No	No
R12	1434	752.54	50	703.01	741.58	35	31 - 40	2	Assessment required for all viewpoints except road/rail	No	No
R31	2003	733.46	39	703.01	741.58	27	21 - 30	1	No assessment required	No	No
R62	3793	753.32	50	703.01	741.58	18	11 - 20	1	No assessment required	No	No
R68	3445	675.98	66	703.01	741.58	23	21 - 30	1	No assessment required	No	No
R26	1739	779.37	76	703.01	741.58	24	21 - 30	2	No assessment required	No	No
R21	1650	749.45	46	703.01	741.58	34	31 - 40	1	No assessment required	No	No
R64	3836	789.56	87	703.01	741.58	26	21 - 30	1	No assessment required	No	No
R54	3301	753.95	51	703.01	741.58	27	21 - 30	1	No assessment required	No	No
R57	3371	824.21	121	703.01	741.58	23	21 - 30	1	No assessment required	No	No
R27	1773	756.54	54	703.01	741.58	30	21 - 30	1	No assessment required	No	No
R43	2538	782.17	79	703.01	741.58	20	11 - 20	1	No assessment required	No	No
R55	3330	749.71	47	703.01	741.58	17	11 - 20	1	No assessment required	No	No
P2	2223	756.05	53	703.01	741.58	34	31 - 40	1	No assessment required	Yes	No

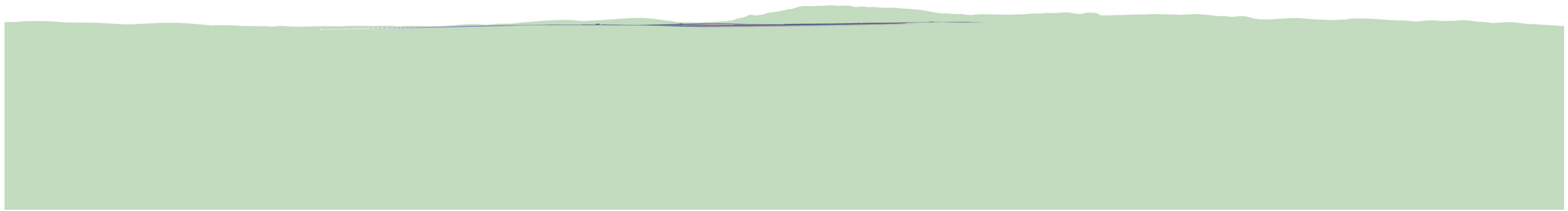
Receiver (within 4 km)	Distance to development (m)	Elevation of receiver (mAHD)	Relative height difference	Lowest point of design (mAHD)	Highest point of design (mAHD)	Horizontal field of view (degrees)	Horizontal field of view category	Sector (Technical Supplement)	Assessment	Within ZTV?	Detailed visual assessment required?
R23	1670	750.41	47	703.01	741.58	33	31 - 40	1	No assessment required	No	No
R60	3486	757.63	55	703.01	741.58	21	21 - 30	1	No assessment required	No	No
R40	2371	754.06	51	703.01	741.58	29	21 - 30	1	No assessment required	No	No
R58	3434	798.88	96	703.01	741.58	18	11 - 20	1	No assessment required	No	No
R32	2008	752.90	50	703.01	741.58	30	21 - 30	1	No assessment required	No	No
R33	2076	757.44	54	703.01	741.58	29	21 - 30	1	No assessment required	No	No
R61	3736	810.14	107	703.01	741.58	23	21 - 30	1	No assessment required	No	No
R63	3891	743.44	40	703.01	741.58	27	21 - 30	1	No assessment required	Yes	No
R37	2275	685.95	56	703.01	741.58	49	41 - 50	1	No assessment required	No	No
R51	3113	770.43	67	703.01	741.58	26	21 - 30	1	No assessment required	No	No
R52	3176	738.98	39	703.01	741.58	19	11 - 20	1	No assessment required	Yes	No
P1	1839	747.76	45	703.01	741.58	45	41 - 50	1	No assessment required	Yes	No
R47	2758	748.74	46	703.01	741.58	35	31 - 40	1	No assessment required	Yes	No
R56	3336	770.68	68	703.01	741.58	22	21 - 30	1	No assessment required	No	No
R45	2648	676.70	65	703.01	741.58	40	31 - 40	1	No assessment required	No	No
R18	1642	748.63	46	703.01	741.58	34	31 - 40	1	No assessment required	No	No

Receiver (within 4 km)	Distance to development (m)	Elevation of receiver (mAHD)	Relative height difference	Lowest point of design (mAHD)	Highest point of design (mAHD)	Horizontal field of view (degrees)	Horizontal field of view category	Sector (Technical Supplement)	Assessment	Within ZTV?	Detailed visual assessment required?
R49	2841	761.33	58	703.01	741.58	35	31 - 40	1	No assessment required	No	No
R22	1652	752.70	50	703.01	741.58	32	31 - 40	1	No assessment required	No	No
R30	1980	751.63	49	703.01	741.58	29	21 - 30	1	No assessment required	No	No
R38	2286	753.44	50	703.01	741.58	30	21 - 30	1	No assessment required	No	No
R53	3182	764.51	61	703.01	741.58	22	21 - 30	1	No assessment required	Yes	No
R34	2112	685.80	56	703.01	741.58	50	41 - 50	1	No assessment required	No	No
R6	1151	765.39	62	703.01	741.58	30	21 - 30	2	No assessment required	Yes	No
P3	1671	775.85	73	703.01	741.58	25	21 - 30	2	No assessment required	Yes	No
R36	2232	752.68	50	703.01	741.58	31	31 - 40	1	No assessment required	No	No
R59	3450	739.48	39	703.01	741.58	19	11 - 20	1	No assessment required	No	No
R67	3413	696.95	45	703.01	741.58	27	21 - 30	1	No assessment required	Yes	No
R20	1650	751.90	49	703.01	741.58	33	31 - 40	1	No assessment required	No	No
R28	1862	769.90	67	703.01	741.58	26	21 - 30	2	No assessment required	No	No
R24	1679	779.25	76	703.01	741.58	24	21 - 30	2	No assessment required	No	No
R25	1687	747.77	45	703.01	741.58	48	41 - 50	1	No assessment required	Yes	No
R48	2830	791.03	88	703.01	741.58	20	11 - 20	1	No assessment required	Yes	No

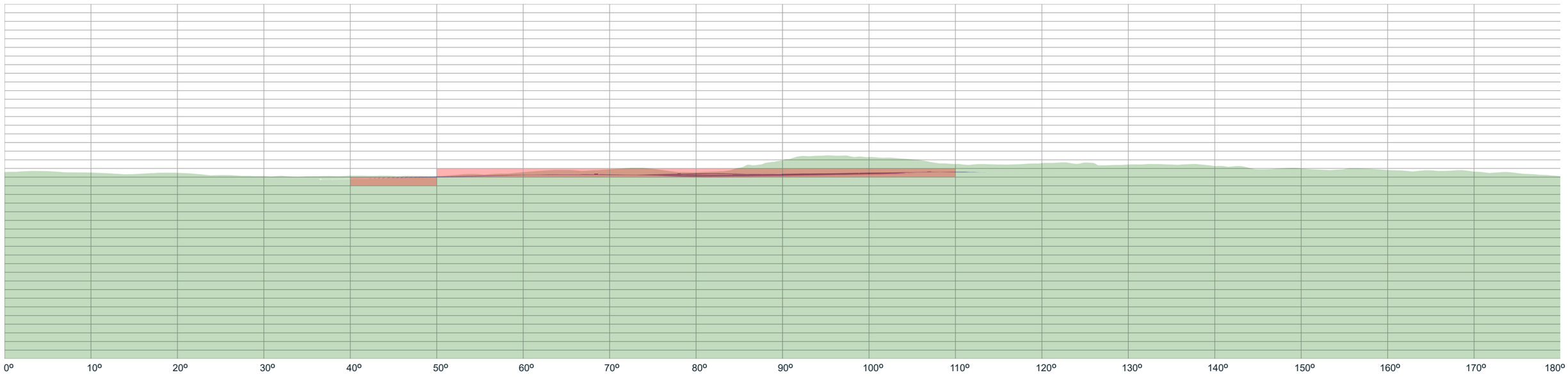
Receiver (within 4 km)	Distance to development (m)	Elevation of receiver (mAHD)	Relative height difference	Lowest point of design (mAHD)	Highest point of design (mAHD)	Horizontal field of view (degrees)	Horizontal field of view category	Sector (Technical Supplement)	Assessment	Within ZTV?	Detailed visual assessment required?
R39	2364	682.08	59	703.01	741.58	46	41 - 50	1	No assessment required	No	No
R50	3105	740.82	39	703.01	741.58	21	21 - 30	1	No assessment required	No	No
R42	2521	754.62	52	703.01	741.58	29	21 - 30	1	No assessment required	No	No
Associated residence	3549	703.92	39	703.01	741.58	32	31 - 40	1	No assessment required	No	No
R35	2179	756.50	53	703.01	741.58	36	31 - 40	1	No assessment required	No	No
R29	1890	744.87	42	703.01	741.58	33	31 - 40	1	No assessment required	No	No
R46	2659	770.27	67	703.01	741.58	30	21 - 30	1	No assessment required	Yes	No
R44	2610	732.24	39	703.01	741.58	20	11 - 20	1	No assessment required	Yes	No
R41	2509	681.04	61	703.01	741.58	44	41 - 50	1	No assessment required	No	No
R65	3439	798.11	95	703.01	741.58	26	21 - 30	1	No assessment required	Yes	No
R66	3194	776.47	73	703.01	741.58	24	21 - 30	1	No assessment required	Yes	No

Appendix B

Detailed viewpoint assessment



Proposed wireframe view from dwelling



Proposed wireframe view with magnitude grid tool

This wireframe viewpoint assessment is assessing potential worse-case views from the residential dwelling.

Viewpoint type	Rural dwelling (primary view)
Coordinates	748837, 6292845
Distance to development	623 m
Viewpoint elevation	703 m
View direction	321˚ - 141˚
Photograph time & date	N/A
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Viewpoint sensitivity	**Moderate**
Scenic quality	**Low**
Visual sensitivity	**Moderate**
Occupied cells	**7**
Magnitude rating	**Low**
Impact rating	**Low**

Viewpoint R1

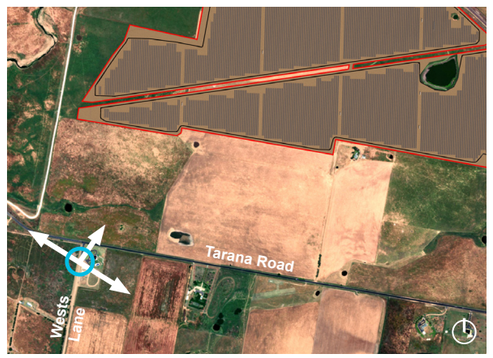
Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

Existing representative view - Wests Lane

This representative view is located on Wests Lane, near the driveway entrance and at the same setback from Tarana Road as the residence.
As shown in the view, there is currently no screening vegetation between the residence and Tarana Road.
The residence is oriented north northwest, towards the western side of the Project.

* Indicative project extents does not consider intervening topography, built form and vegetation.

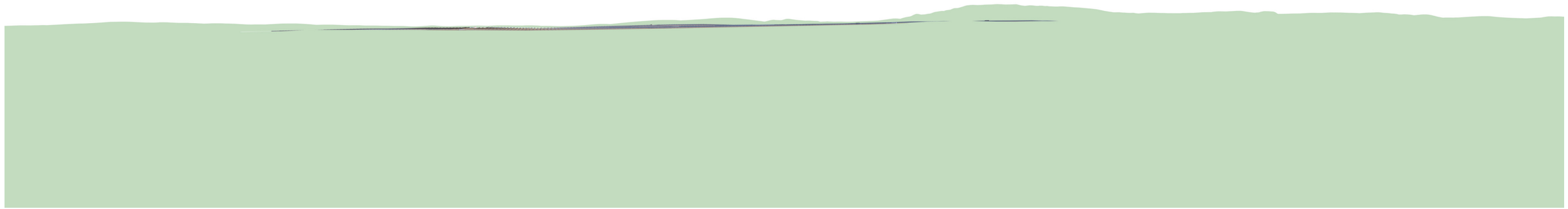


Viewpoint type	Representative viewpoint
Coordinates	748781, 629834
Distance to development	642 m
Viewpoint elevation	702 m
View direction	N/A
Photograph time & date	19th March, 2024, 10:31
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

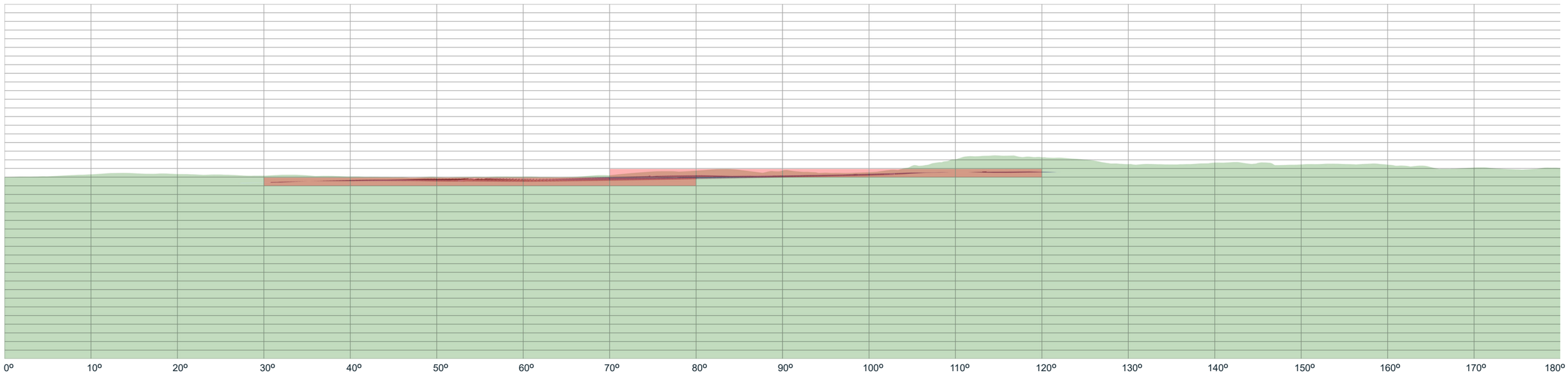
Representative Viewpoint R1

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy



Proposed wireframe view from dwelling



Proposed wireframe view with magnitude grid tool

This wireframe viewpoint assessment is assessing potential worse-case views from the residential dwelling.

Viewpoint type	Rural dwelling (primary view)
Coordinates	749338, 6292683
Distance to development	738 m
Viewpoint elevation	709 m
View direction	300˚ - 120˚
Photograph time & date	N/A
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Viewpoint sensitivity	**Moderate**
Scenic quality	**Low**
Visual sensitivity	**Moderate**
Occupied cells	**10**
Magnitude rating	**Low**
Impact rating	**Low**

Viewpoint R2

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

Proposed representative view from Tarana Road

Proposed representative view

This representative view is located on Tarana Road, at the driveway entry to the R2 residence. This representative view is an open view towards to Project, however intervening garden vegetation is present within the property between the dwelling and Tarana Road, which would likely filter or partially block views to the Project.

Viewpoint type	Representative viewpoint
Coordinates	749370, 6292794
Distance to development	623 m
Viewpoint elevation	709 m
View direction	279˚ - 99˚
Photograph time & date	19th March, 2024, 10:15
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Representative Viewpoint R2

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

Proposed representative view

Inset A

Viewpoint type	Representative viewpoint
Coordinates	749370, 6292794
Distance to development	623 m
Viewpoint elevation	709 m
View direction	279˚ - 99˚
Photograph time & date	19th March, 2024, 10:15
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Representative Viewpoint R2

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

0º 10º 20º 30º 40º 50º 60º 70º 80º 90º 100º 110º 120º 130º 140º 150º 160º 170º 180º

Proposed representative view, with mitigation at approximately 10 years

70º 80º 90º 100º

Inset A

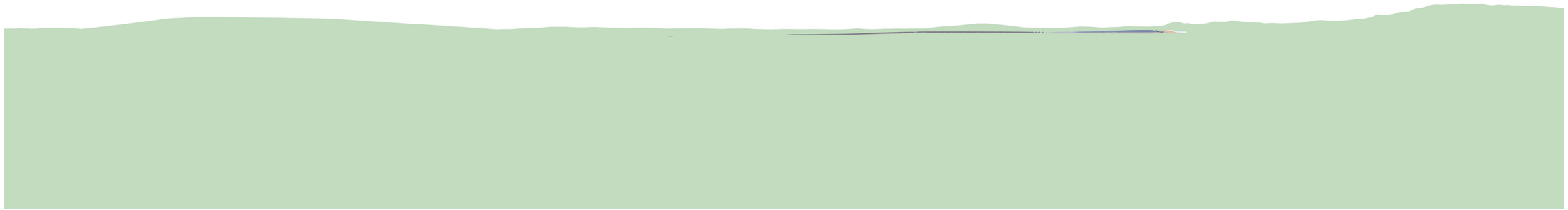
NOTE: Mitigation shown is indicative only. Plant growth is subject to environmental conditions and maintenance.

Viewpoint type	Representative viewpoint
Coordinates	749370, 6292794
Distance to development	623 m
Viewpoint elevation	709 m
View direction	279˚ - 99˚
Photograph time & date	19th March, 2024, 10:15
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

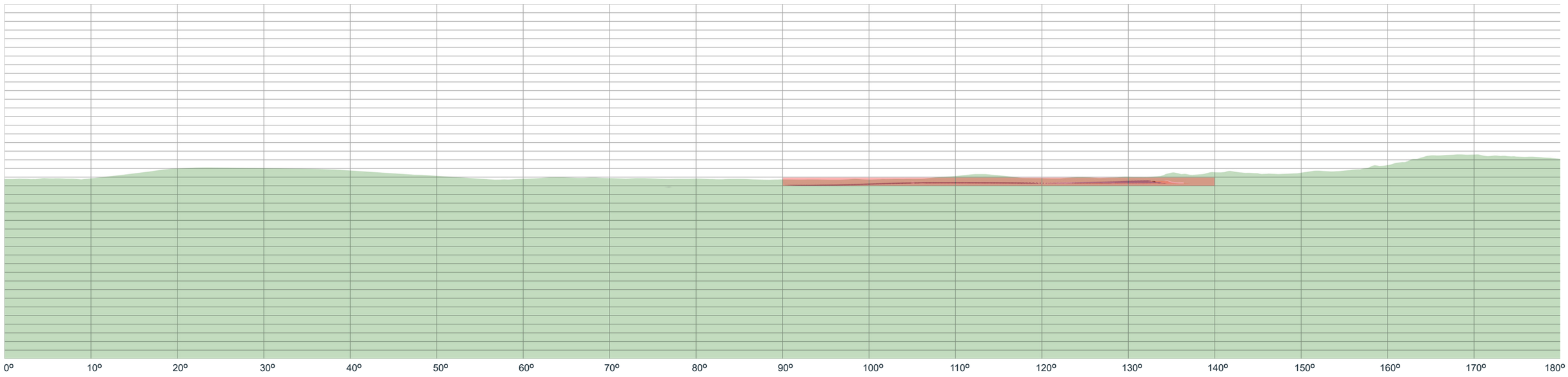
Representative Viewpoint R2

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy



Proposed wireframe view from dwelling



Proposed wireframe view with magnitude grid tool

This wireframe viewpoint assessment is assessing potential worse-case views from the residential dwelling.

Viewpoint type	Rural dwelling (primary view)
Coordinates	750606, 6292500
Distance to development	765 m
Viewpoint elevation	735 m
View direction	298˚ - 118˚
Photograph time & date	N/A
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Viewpoint sensitivity	**Moderate**
Scenic quality	**Low**
Visual sensitivity	**Moderate**
Occupied cells	**5**
Magnitude rating	**Very low**
Impact rating	**Low**

Viewpoint R3

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

indicative project extents*

Existing representative view

This representative view is located on Tarana Road, at the driveway entrance to the private residence.
This representative view is an open view towards to Project, however existing tree planting on either side of the entrance driveway within the property would likely filter views to the Project.
The residence is oriented north, towards the eastern side of the Project.

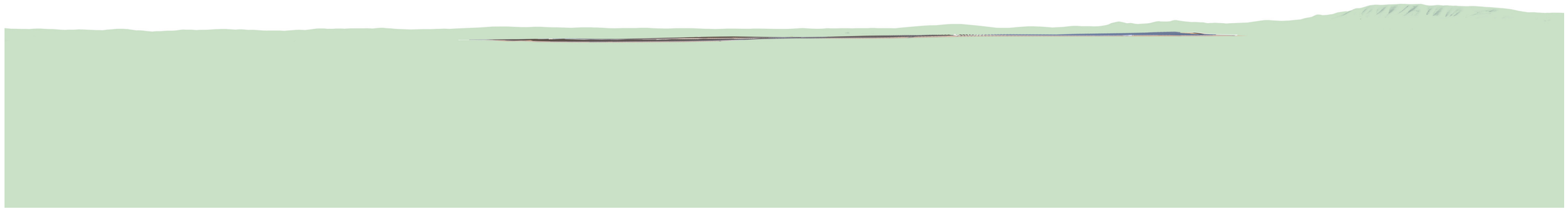
* Indicative project extents does not consider intervening topography, built form and vegetation.

Viewpoint type	Representative viewpoint
Coordinates	750622, 6292584
Distance to development	680 m
Viewpoint elevation	734 m
View direction	N/A
Photograph time & date	19th March, 2024, 10:06
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

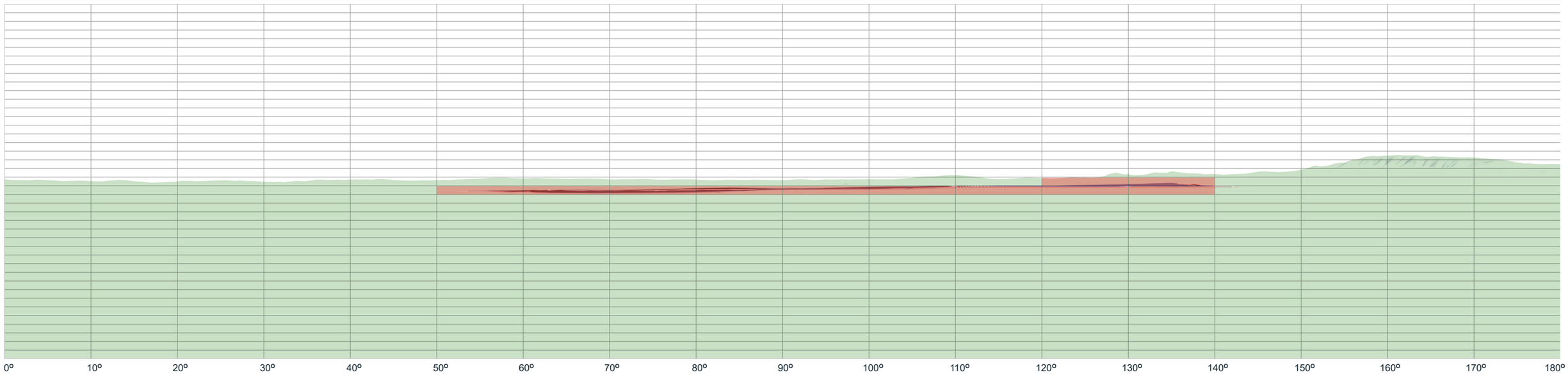
Representative Viewpoint R3

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy



Proposed wireframe view from dwelling



Proposed wireframe view with magnitude grid tool

This wireframe viewpoint assessment is assessing potential worse-case views from the residential dwelling.

Viewpoint type	Rural dwelling (primary view)
Coordinates	750395, 6292521
Distance to development	782 m
Viewpoint elevation	741 m
View direction	250˚ - 70˚
Photograph time & date	N/A
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

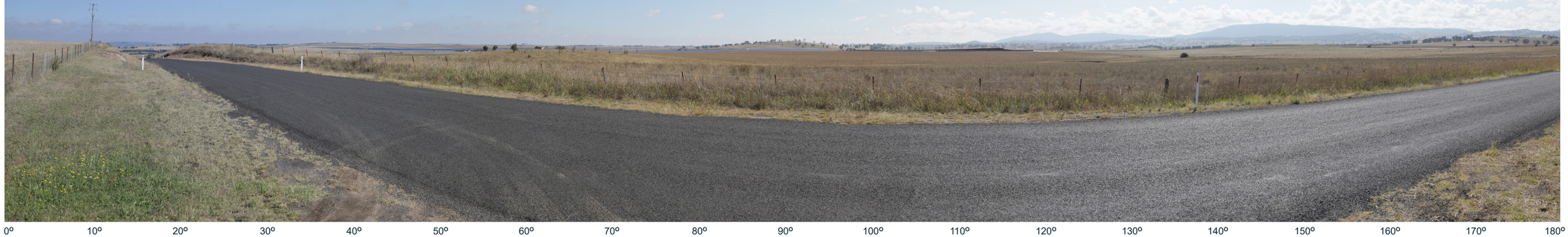
Viewpoint sensitivity	**Moderate**
Scenic quality	**Low**
Visual sensitivity	**Moderate**
Occupied cells	**11**
Magnitude rating	**Low**
Impact rating	**Low**

Viewpoint R4

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

Proposed representative view from Tarana Road



Proposed representative view

This representative view is located on Tarana Road, at the driveway entry to the R4 residence. This representative view is an open view towards to Project, however intervening vegetation is present within the garden and along the driveway of the property between the residence and Tarana Road, which would likely filter or partially block views to the solar farm. The residence is oriented to the northwest towards the centre of the Project.

Viewpoint type	Representative viewpoint
Coordinates	750513, 6292597
Distance to development	686 m
Viewpoint elevation	733 m
View direction	281˚ - 101˚
Photograph time & date	19th March, 2024, 10:00
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Representative Viewpoint R4

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

Proposed view

Inset A

Viewpoint type	Representative viewpoint
Coordinates	750513, 6292597
Distance to development	686 m
Viewpoint elevation	733 m
View direction	281˚ - 101˚
Photograph time & date	19th March, 2024, 10:00
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Representative Viewpoint R4

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

Existing view

Proposed view with magnitude grid tool

This viewpoint is located at the front entry to the residential dwelling.

Viewpoint type	Rural dwelling (primary view)
Coordinates	7748733, 6294807
Distance to development	808 m
Viewpoint elevation	709 m
View direction	66˚ - 246˚
Photograph time & date	18th March, 2024, 11:20
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Viewpoint sensitivity	**Moderate**
Scenic quality	**Moderate-low**
Visual sensitivity	**Moderate**
Occupied cells	**8**
Magnitude rating	**Low**
Impact rating	**Low**

Viewpoint R5

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

0º 10º 20º 30º 40º 50º 60º 70º 80º 90º 100º 110º 120º 130º 140º 150º 160º 170º 180º

Proposed view

60º 70º 80º 90º

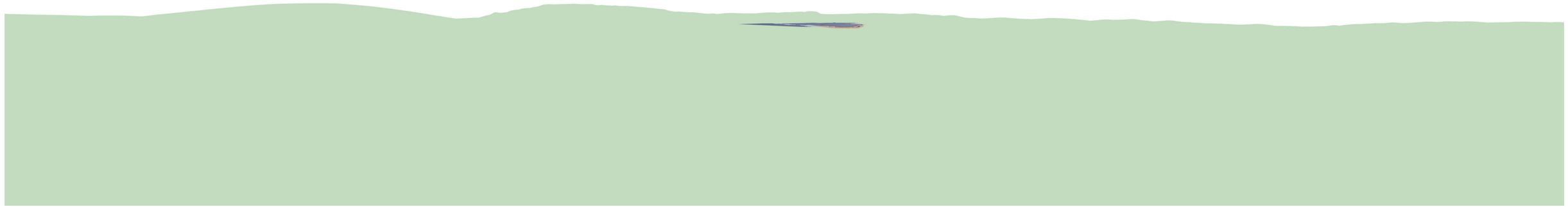
Inset A

Viewpoint type	Rural dwelling (primary view)
Coordinates	7748733, 6294807
Distance to development	808 m
Viewpoint elevation	709 m
View direction	66˚ - 246˚
Photograph time & date	18th March, 2024, 11:20
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

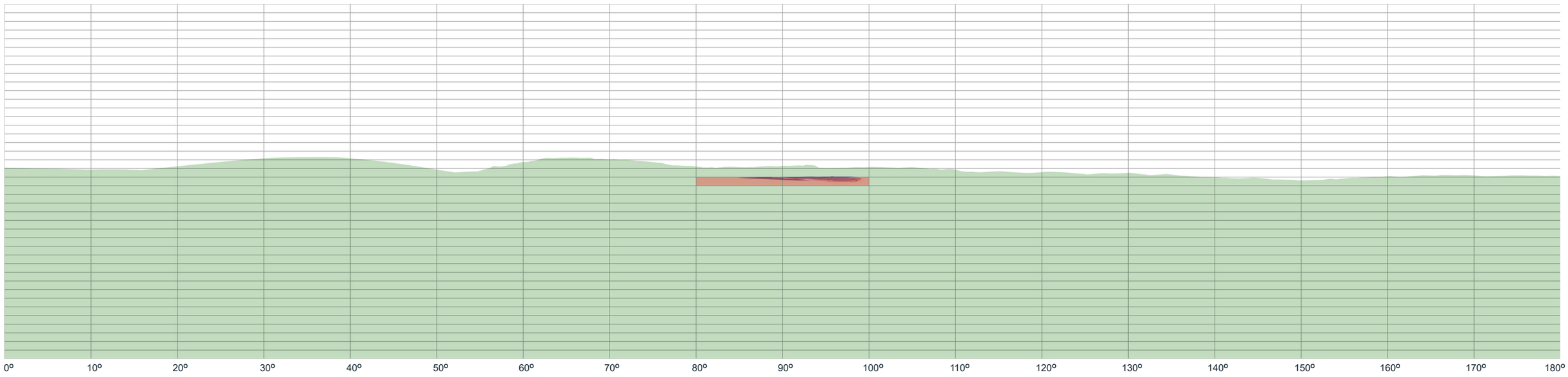
Viewpoint R5

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy



Proposed wireframe view from dwelling



Proposed wireframe view with magnitude grid tool

This wireframe viewpoint assessment is assessing potential worse-case views from the residential dwelling.

Viewpoint type	Rural dwelling (primary view)
Coordinates	747518, 6293622
Distance to development	1,243 m
Viewpoint elevation	705 m
View direction	357˚ - 177˚
Photograph time & date	N/A
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Viewpoint sensitivity	**Moderate**
Scenic quality	**Low**
Visual sensitivity	**Moderate**
Occupied cells	**2**
Magnitude rating	**Very low**
Impact rating	**Low**

Viewpoint R8

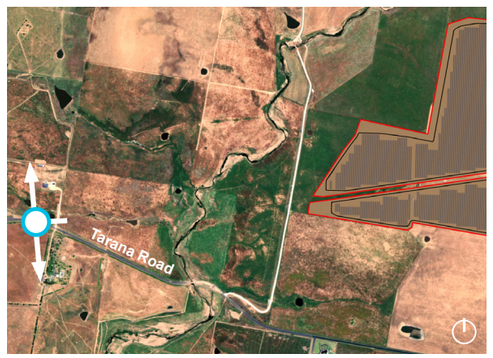
Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

Existing representative view

This representative view is located on Tarana Road, at a similar distance from the Project as the R8 residence.
This representative view is an open view towards to Project, however existing tree planting along the property boundary, as shown in the view, may filter views to the Project.
The residence is oriented to on a north-south alignment, away from the Project.

* Indicative project extents does not consider intervening topography, built form and vegetation.



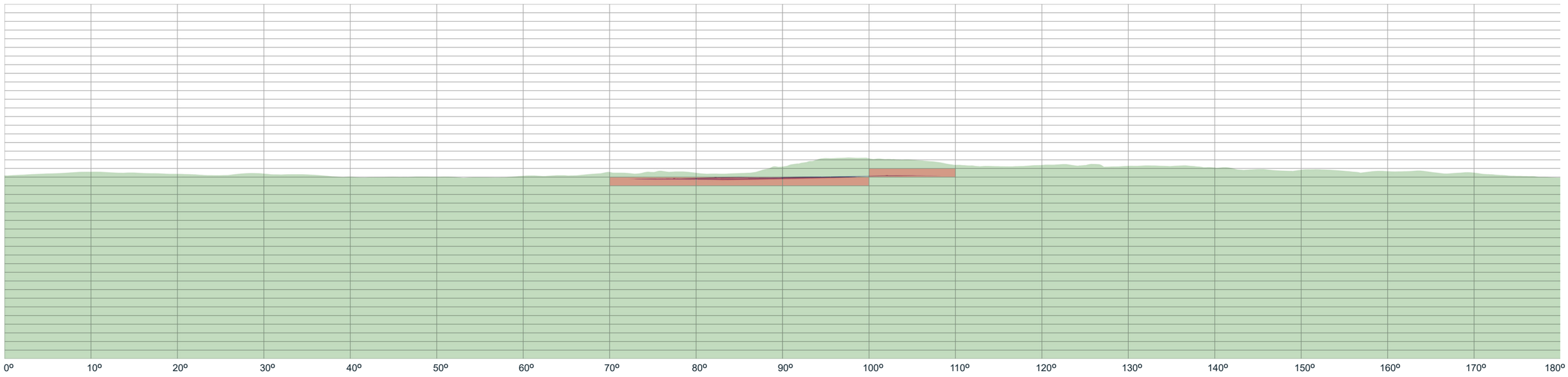
Viewpoint type	Representative viewpoint
Coordinates	747482, 6293451
Distance to development	1,269 m
Viewpoint elevation	699 m
View direction	N/A
Photograph time & date	19th March, 2024, 11:07
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Representative Viewpoint R8

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

Proposed wireframe view from dwelling



Proposed wireframe view with magnitude grid tool

This wireframe viewpoint assessment is assessing potential worse-case views from the residential dwelling.

Viewpoint type	Rural dwelling (primary view)
Coordinates	748335, 6292286
Distance to development	1,281 m
Viewpoint elevation	705 m
View direction	318˚ - 138˚
Photograph time & date	N/A
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Viewpoint sensitivity	**Moderate**
Scenic quality	**Low**
Visual sensitivity	**Moderate**
Occupied cells	**4**
Magnitude rating	**Very low**
Impact rating	**Low**

Viewpoint R9

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

Existing representative view

This representative view is located on Wests Lane, at the end of the driveway of receiver R70. This location is approximately 425 m north-east of receiver R9.
This representative view shows mature exotic windrow planting which is present along the western side of Wests Lane. This, and other intervening vegetation along fence lines, would likely block views of the Project from Receiver R9 (as shown on the aerial image to the right), and may partially shield views from receiver R70. R70 residence is oriented towards Tarana Road and the Project.

* Indicative project extents does not consider intervening topography, built form and vegetation.

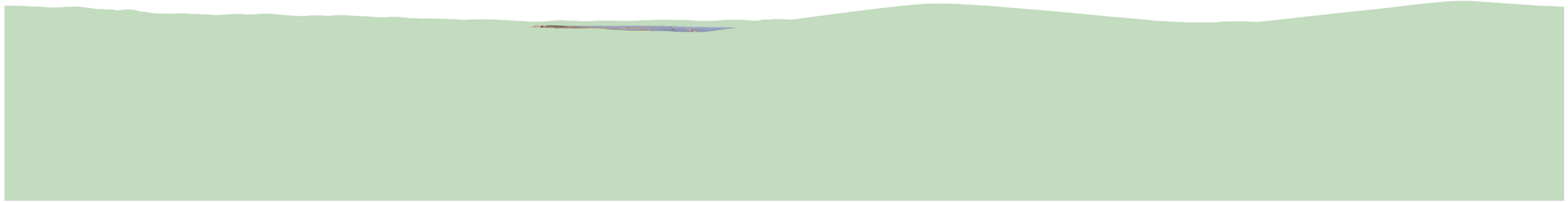
Location of representative viewpoint R9

Viewpoint type	Representative viewpoint
Coordinates	748698, 6292499
Distance to development	987 m
Viewpoint elevation	705 m
View direction	N/A
Photograph time & date	19th March, 2024, 10:36
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

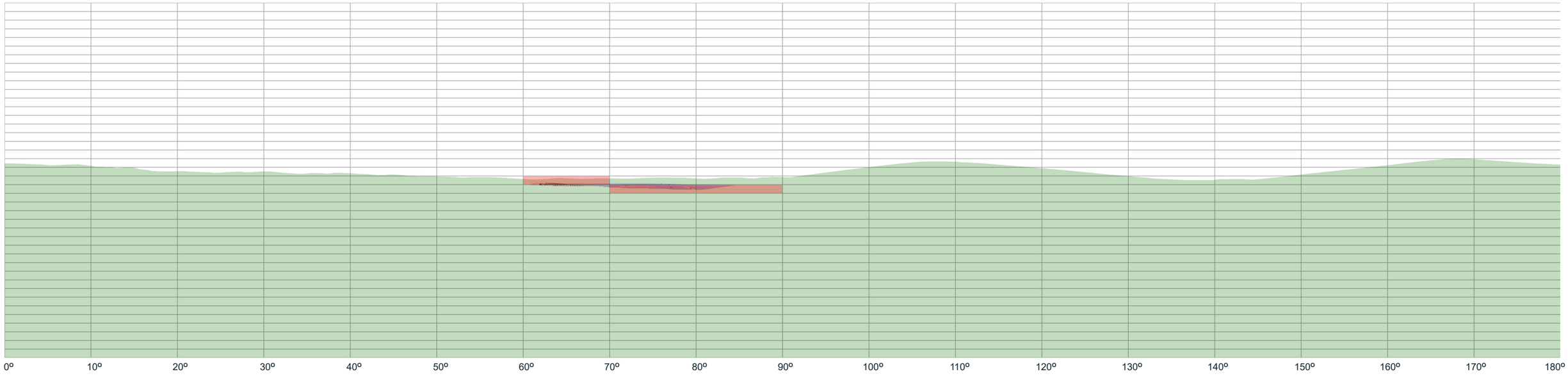
Representative Viewpoint R9

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

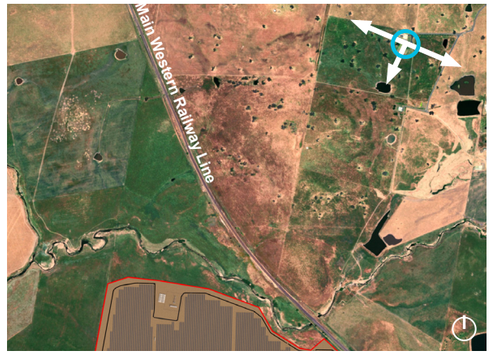


Proposed wireframe view from dwelling



Proposed wireframe view with magnitude grid tool

This wireframe viewpoint assessment is assessing potential worse-case views from the residential dwelling.



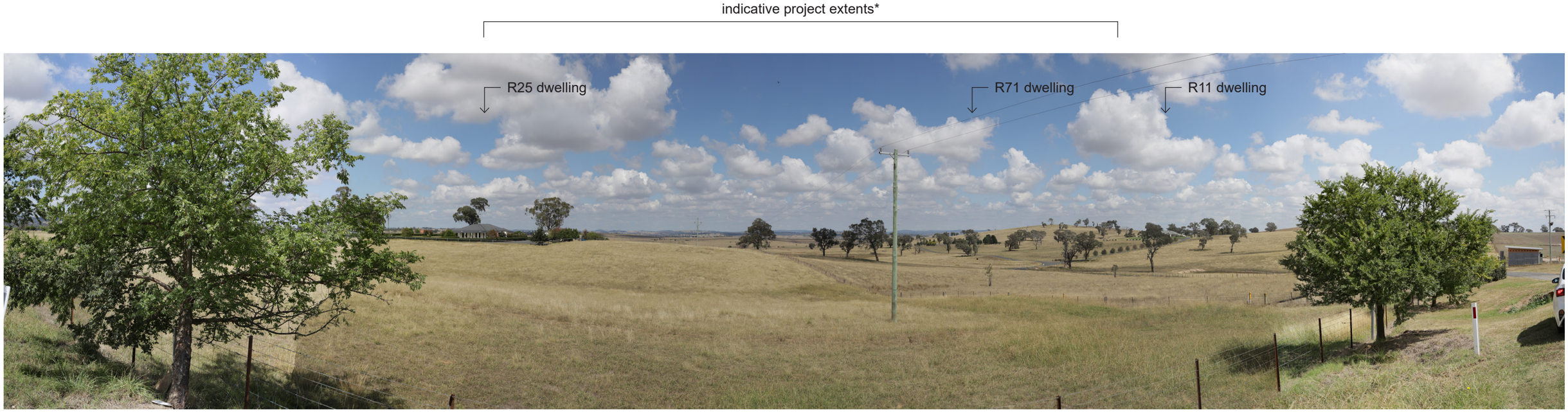
Viewpoint type	Rural dwelling (primary view)
Coordinates	750827, 6295518
Distance to development	1,410 m
Viewpoint elevation	747 m
View direction	117˚ - 297˚
Photograph time & date	N/A
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Viewpoint sensitivity	**Moderate**
Scenic quality	**Low**
Visual sensitivity	**Moderate**
Occupied cells	**3**
Magnitude rating	**Very low**
Impact rating	**Low**

Viewpoint R11

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy



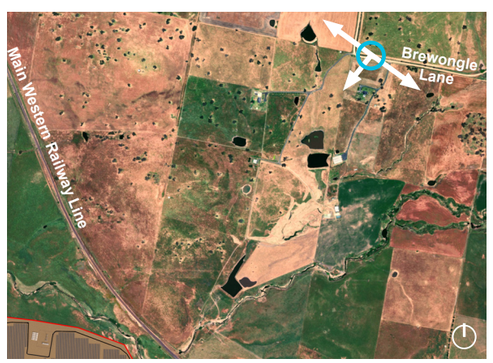
Existing representative view

This representative view is located on Brewongle Lane, approximately 560 m from receiver R11, and 755 m from receiver R71.
This representative view illustrates the landscape character setting on the northern side of the Project near receiver R11 and R71.

The R11 dwelling is oriented on a east-west axis, away from the Project. Scattered trees are present between the dwelling and the Project.

The R71 dwelling is oriented on a north-south axis towards the Project, however vegetation is present to the perimeter of the garden area, which would likely block or filter any views of the Project.

* Indicative project extents does not consider intervening topography, built form and vegetation.

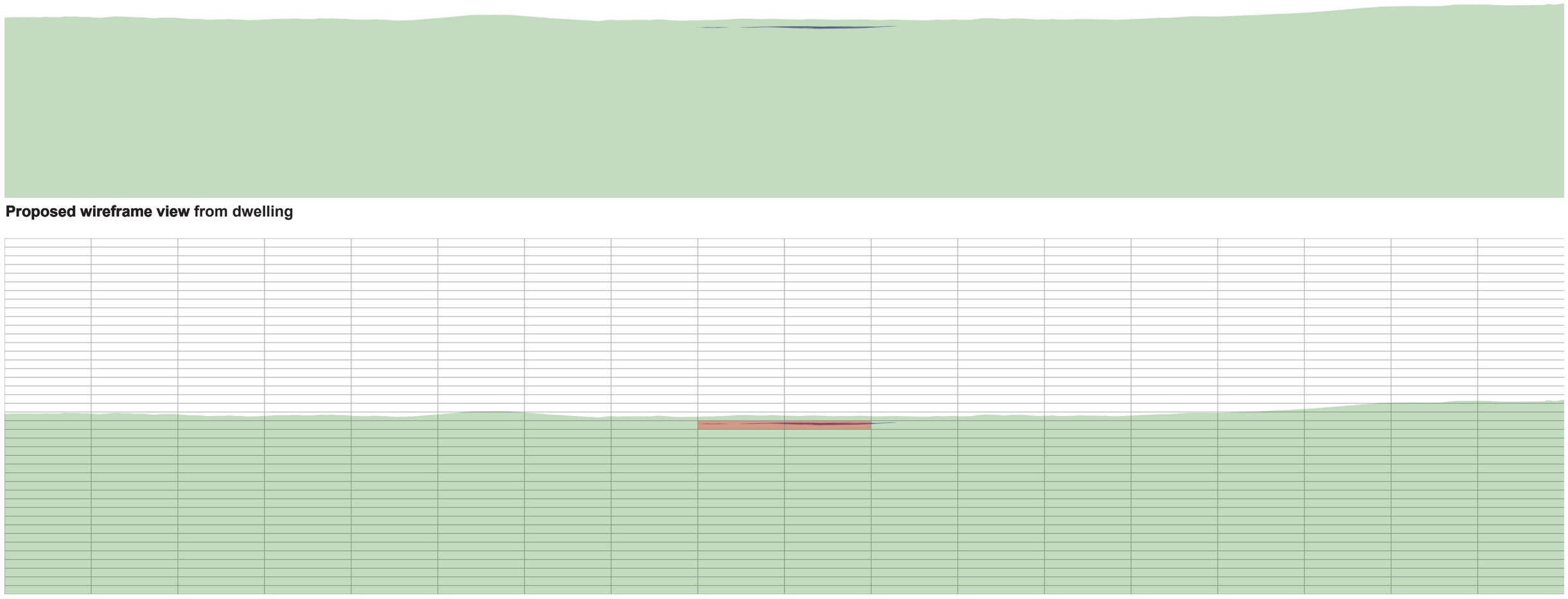


Viewpoint type	Representative viewpoint
Coordinates	751336, 6295758
Distance to development	1,845 m
Viewpoint elevation	747 m
View direction	N/A
Photograph time & date	19th March, 2024, 11:56
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Representative Viewpoint R11

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy



Proposed wireframe view from dwelling

Proposed wireframe view with magnitude grid tool

This wireframe viewpoint assessment is assessing potential worse-case views from the residential dwelling.

Viewpoint type	Rural dwelling (primary view)
Coordinates	75212, 6292236
Distance to development	1,615 m
Viewpoint elevation	760 m
View direction	325˚ - 145˚
Photograph time & date	N/A
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Viewpoint sensitivity	**Moderate**
Scenic quality	**Low**
Visual sensitivity	**Moderate**
Occupied cells	**2**
Magnitude rating	**Very low**
Impact rating	**Low**

Viewpoint R17

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

Location of wireframe camera, and Photo A and B, and surrounding features

Photo A

Photo B

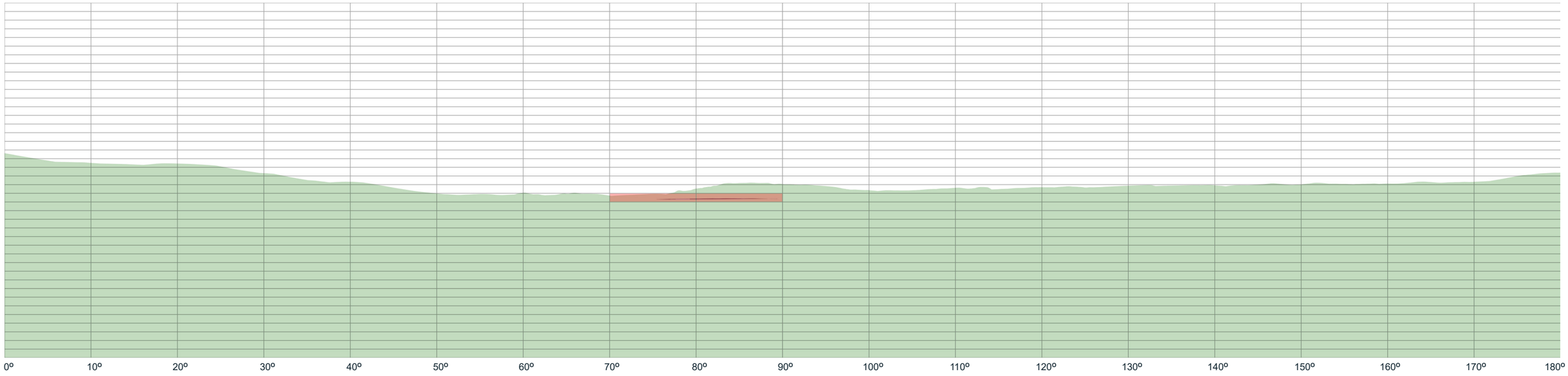
Receiver R17 was not able to be access for detailed viewpoint assessment. The wireframe assessment, Photo A and B, and the Aerial insert (right) indicate limited to no views are likely from this dwelling. Existing intervening built form, vegetation, and topography, combined with the effects of distance, would likely result in negligible overall impacts. The residence also appears to be oriented towards the south-west, away from the Project, with entry on the eastern side.

Viewpoint R17

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

Proposed wireframe view from dwelling



Proposed wireframe view with magnitude grid tool

This wireframe viewpoint assessment is assessing potential worse-case views from the residential dwelling.

Viewpoint type	Rural dwelling (primary view)
Coordinates	752507, 6292426
Distance to development	1,650 m
Viewpoint elevation	683 m
View direction	332˚ - 152˚
Photograph time & date	N/A
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Viewpoint sensitivity	**Moderate**
Scenic quality	**Low**
Visual sensitivity	**Moderate**
Occupied cells	**2**
Magnitude rating	**Very low**
Impact rating	**Low**

Viewpoint R19

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

indicative project extents*

Existing representative view

This representative view is located on O'Connell Road, at the driveway entrance of dwelling R19. Although the dwelling is sited at a slightly higher elevation then the road and oriented northeast towards the Project, the evergreen windrow tree planting along O'Connell Road, as shown in the representative view, is likely to prevent views to the Project. Intervening topography between the dwelling and the Project contributes to the very low magnitude rating, as shown in the wireframe assessment.

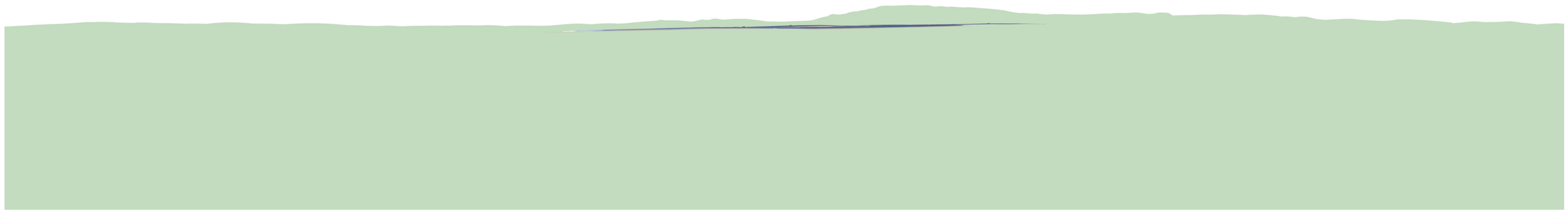
* Indicative project extents does not consider intervening topography, built form and vegetation.

Viewpoint type	Representative viewpoint
Coordinates	747608, 6292478
Distance to development	1,530 m
Viewpoint elevation	678 m
View direction	N/A
Photograph time & date	19th March, 2024, 11:17
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

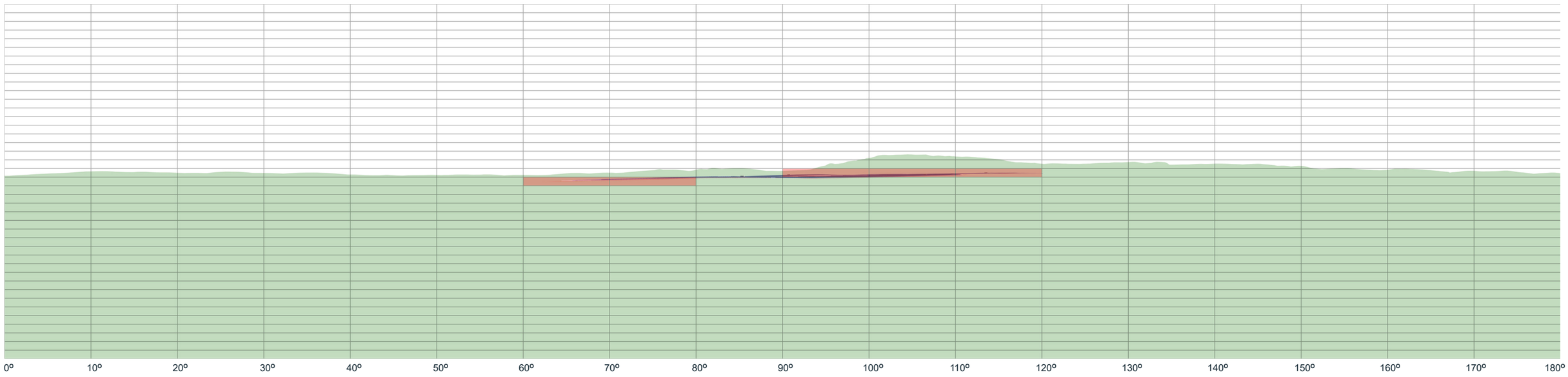
Representative Viewpoint R19

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy



Proposed wireframe view from dwelling



Proposed wireframe view with magnitude grid tool

This wireframe viewpoint assessment is assessing potential worse-case views from the residential dwelling.
Refer to nearby representative viewpoint R9 description and aerial map.

Viewpoint type	Rural dwelling (primary view)
Coordinates	748525, 6295634
Distance to development	906 m
Viewpoint elevation	708 m
View direction	312˚ - 132˚
Photograph time & date	N/A
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

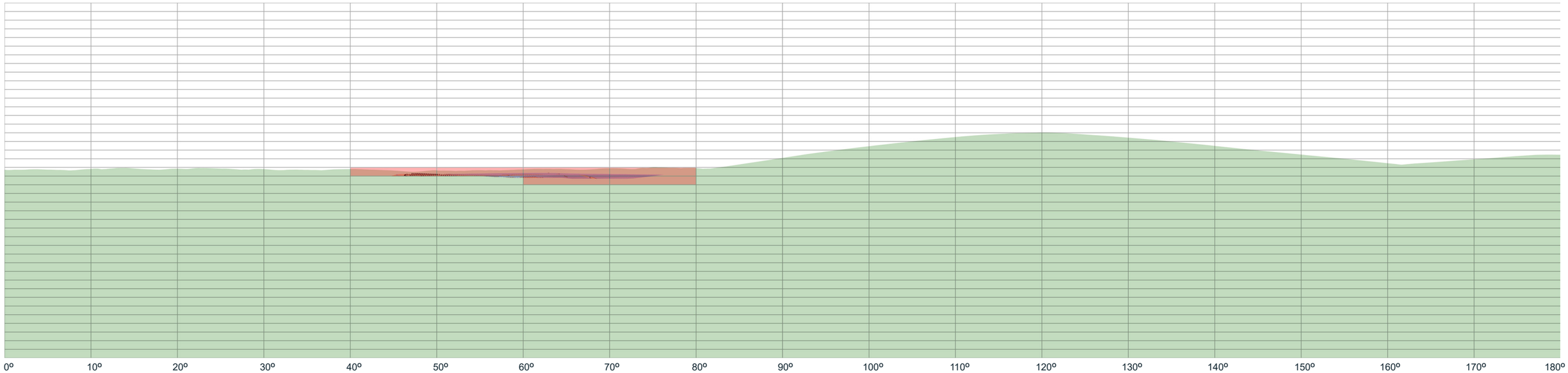
Viewpoint sensitivity	**Moderate**
Scenic quality	**Low**
Visual sensitivity	**Moderate**
Occupied cells	**5**
Magnitude rating	**Very low**
Impact rating	**Low**

Viewpoint R70

Detailed viewpoint assessment

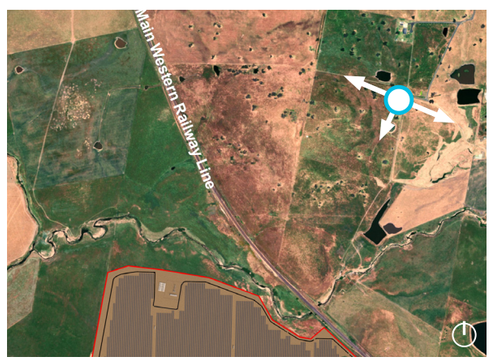
Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

Proposed wireframe view from dwelling



Proposed wireframe view with magnitude grid tool

This wireframe viewpoint assessment is assessing potential worse-case views from the residential dwelling.
Refer to nearby representative viewpoint R11.



Viewpoint type	Rural dwelling (primary view)
Coordinates	750805, 6295204
Distance to development	1147 m
Viewpoint elevation	736 m
View direction	131˚ - 311˚
Photograph time & date	N/A
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

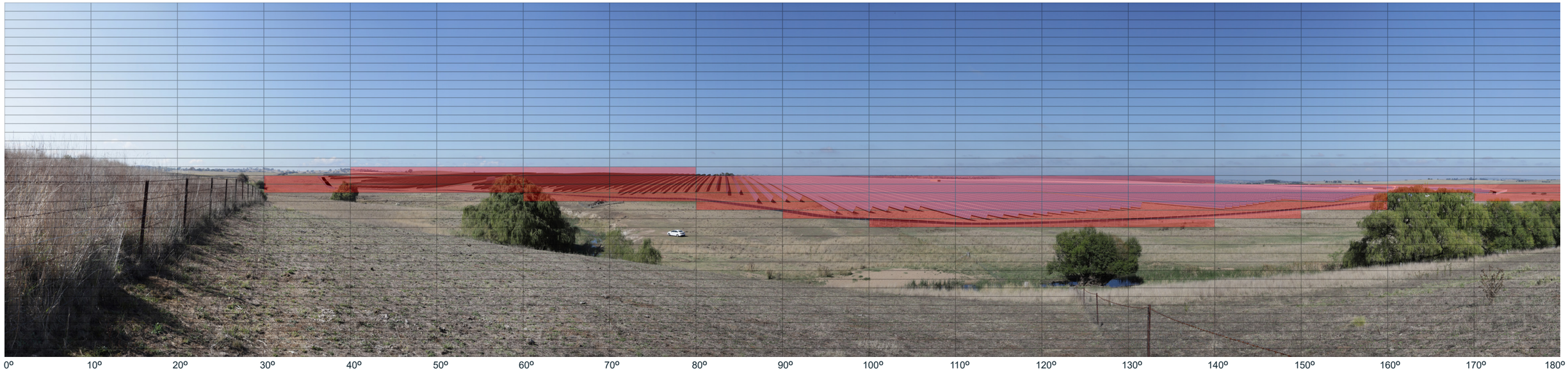
Viewpoint sensitivity	**Moderate**
Scenic quality	**Low**
Visual sensitivity	**Moderate**
Occupied cells	**6**
Magnitude rating	**Very low**
Impact rating	**Low**

Viewpoint R71

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

Existing view



Proposed view with magnitude grid tool

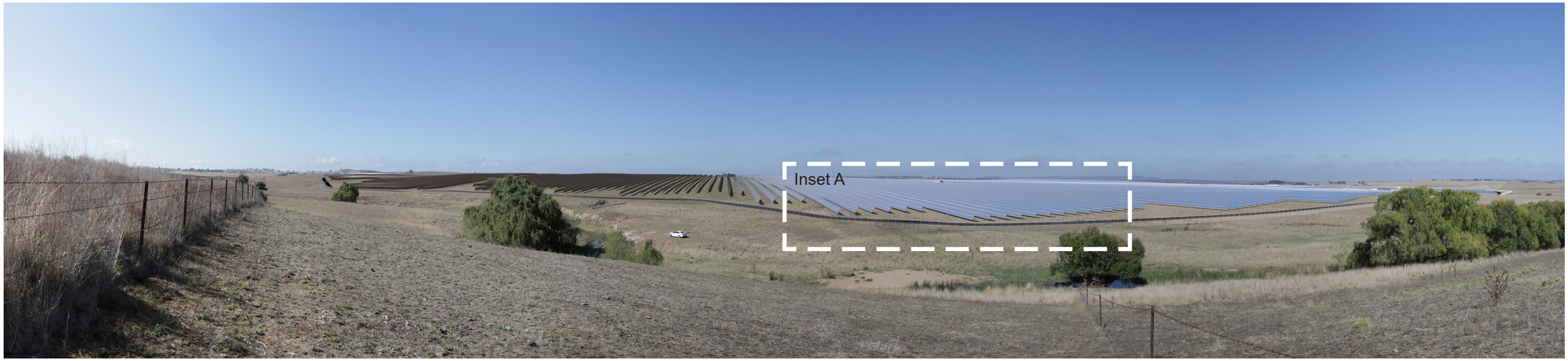
Viewpoint type	Transport, passenger rail line
Coordinates	750186, 6294389
Distance to development	117 m
Viewpoint elevation	720 m
View direction	99˚ - 279˚
Photograph time & date	19th March, 2024, 9:39
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Viewpoint sensitivity	**Very low**
Scenic quality	**Low**
Visual sensitivity	**Very low**
Occupied cells	**59**
Magnitude rating	**Very high**
Impact rating	**Moderate**

Viewpoint P8

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy



Proposed view

Inset A

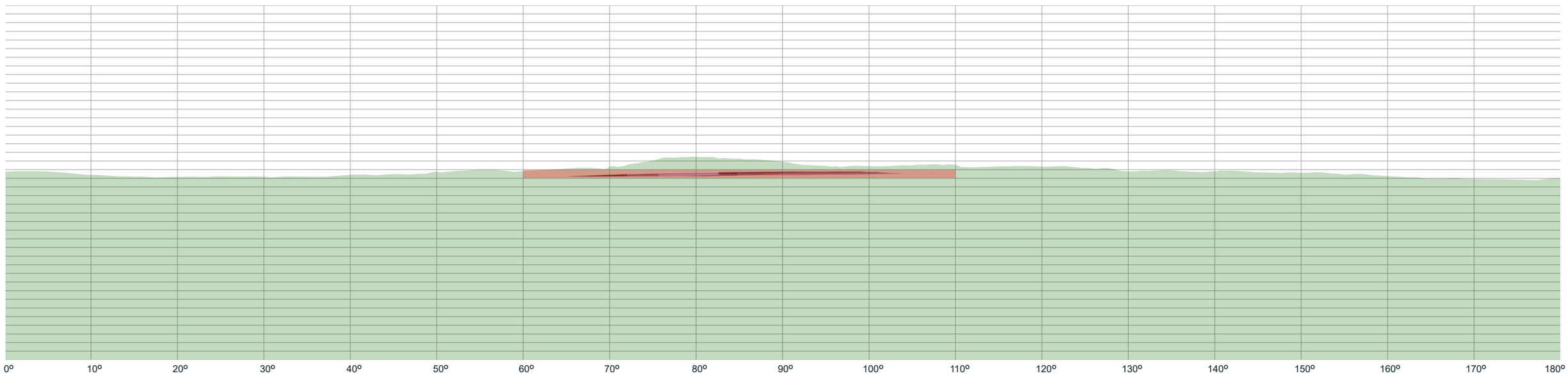
Viewpoint type	Transport, passenger rail line
Coordinates	750186, 6294389
Distance to development	117 m
Viewpoint elevation	720 m
View direction	99˚ - 279˚
Photograph time & date	19th March, 2024, 9:39
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Viewpoint P8

Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

Proposed wireframe view from dwelling



Proposed wireframe view with magnitude grid tool

This wireframe viewpoint assessment is assessing potential worse-case views.

Viewpoint type	No place of residence present
Coordinates	748551, 6293367
Distance to development	235 m
Viewpoint elevation	701 m
View direction	340˚ - 160˚
Photograph time & date	N/A
Horizontal field of view	180˚
Camera height	1.5 m
Camera type	Canon EOS 6D
Lens type	50 mm

Viewpoint sensitivity	**Very low**
Scenic quality	**Low**
Visual sensitivity	**Very low**
Occupied cells	**5**
Magnitude rating	**Very low**
Impact rating	**Very low**

Viewpoint Lot 10 / DP827359

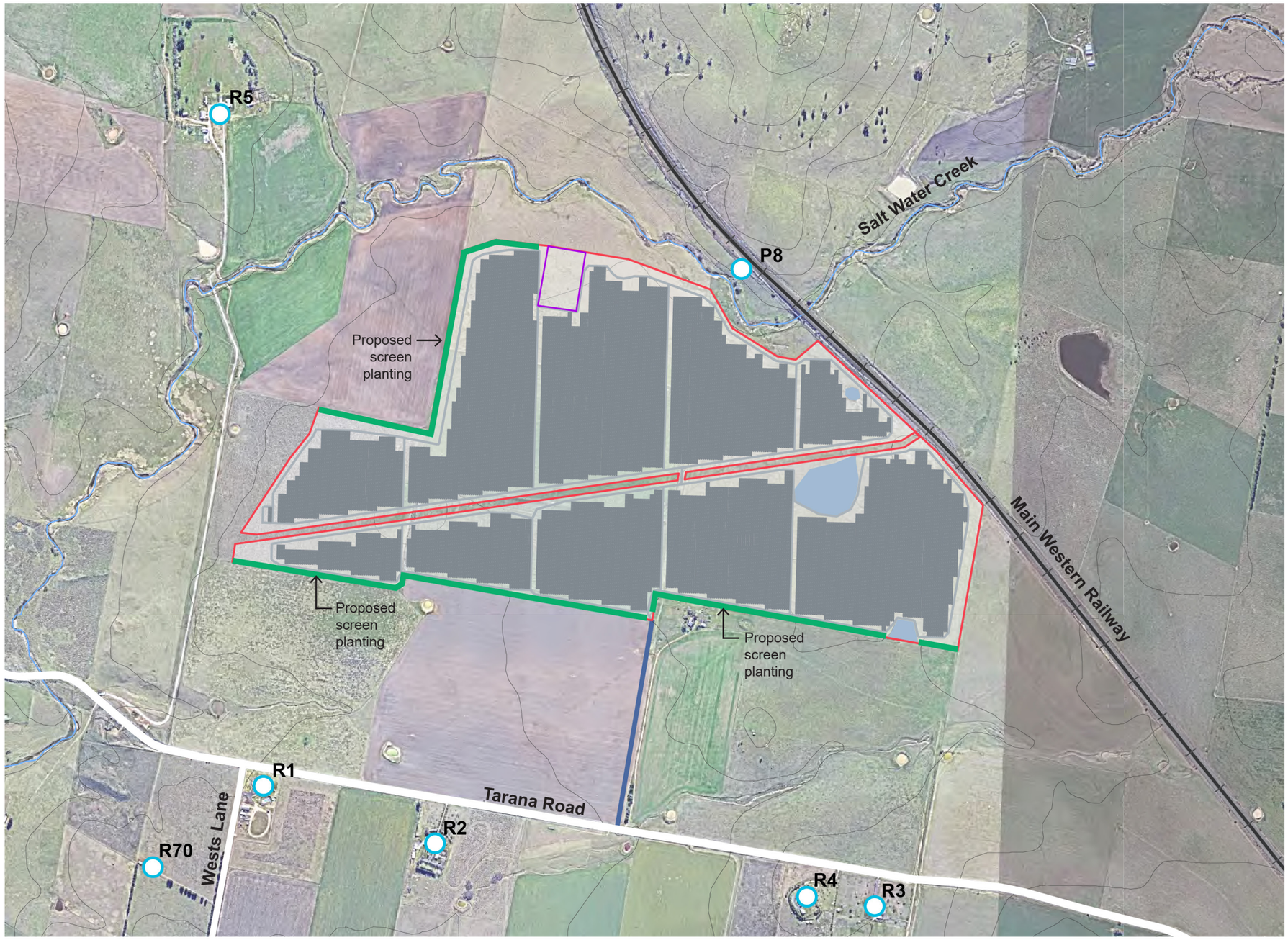
Detailed viewpoint assessment

Landscape and Visual Impact Assessment
12630552 Brewongle Solar Farm LVIA
GHD | Edify Energy

Appendix C

Landscape Concept Mitigation Plan

Landscape concept mitigation plan



Legend

- Proposed 10 m wide screen planting
- Receivers
- Available area
- Solar arrays
- Internal access roads
- Substation / BESS
- Restricted area - farm dams
- Proposed site access road
- Railway
- Watercourse

Landscape concept mitigation plan

PRELIMINARY - NOT FOR CONSTRUCTION

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
P02	FINAL FOR APPROVAL		ER	LF	LF	29.11.24
P01	WIP FOR COMMENT		ER	LF	LF	10.01.24

Level 8, 180 Lonsdale Street, Melbourne VIC 3000 Australia
T 61 3 8687 8000 **F** 61 3 8687 8111
E melmail@ghd.com.au **W** www.ghd.com

DO NOT SCALE

Drawn	VW	Designer	LF
Drafting Check	COD	Design Check	LF
Approved (Project Director)			
Date	-		
Scale	NTS	This Drawing must not be used for Construction unless signed as Approved	

Client	XXXX
Project	XXXX
Title	XXXX XXXX
Original Size	A3
Drawing No:	31-12630552-GHD-00-00-SKT-LA-00001
Rev:	P01

Plot Date: 29 November 2024 - 3:22 PM Plotted By: Caitriona O'Dowd Cad File No: N:\AU\Melbourne\Service\Landscape Architecture & Urban Design\Technical\Drafting\Titleblock\Example Titleblock.dwg

Landscape concept mitigation plan

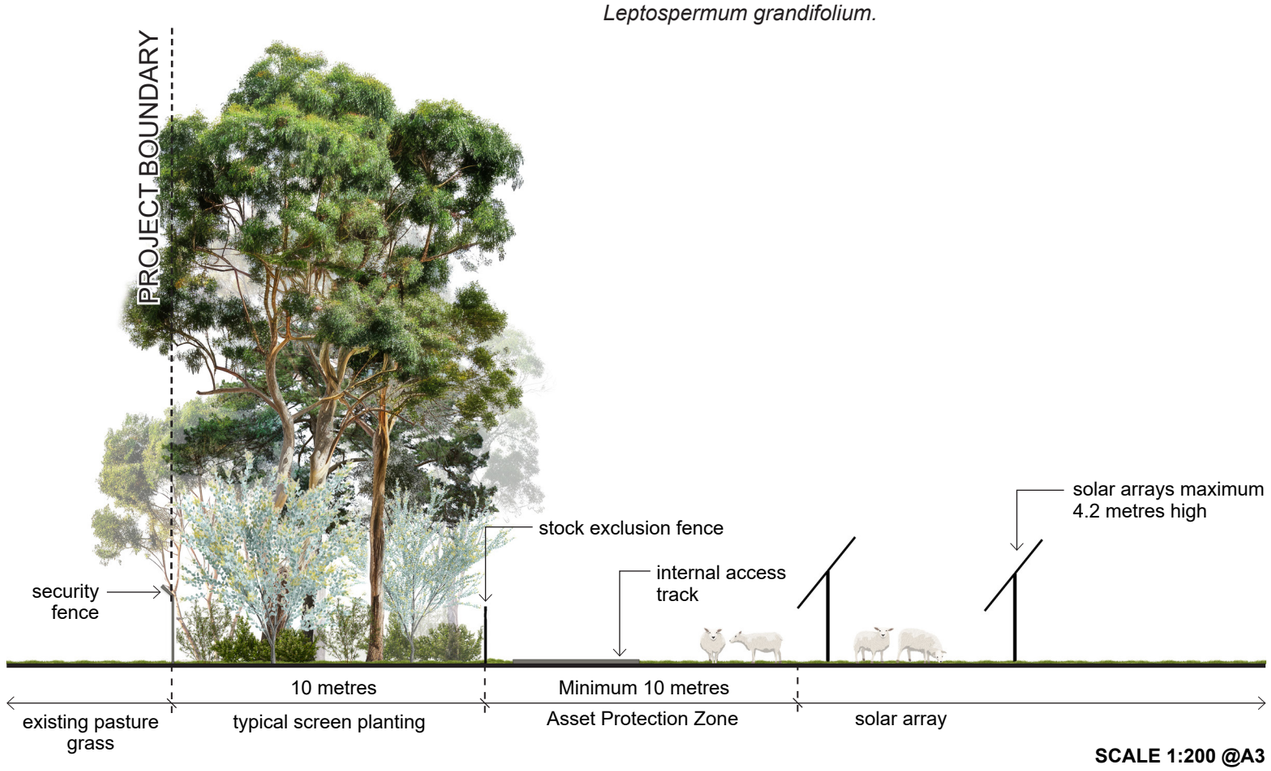
Existing environment

The proposed draft landscape plan is designed to complement the existing landscape character, specifically the native vegetation of the identified Plant Community Type Blakely's Red Gum - Yellow Box grassy tall woodland, along with the characteristics of linear tree planting of windbreaks and planted shelter belts within the study area.

Purpose

The purpose of the screen planting is to:

- Provide visual screening to mitigate the visual impact of solar arrays from Tarana Road and receiver R5.
- Referencing the Blakely's Red Gum - Yellow Box grassy tall woodland characteristics, which is endemic to the local area.
- Enhance biodiversity.



SCALE 1:200 @A3

Screen planting typical cross section - shown at maturity

Planting strategy

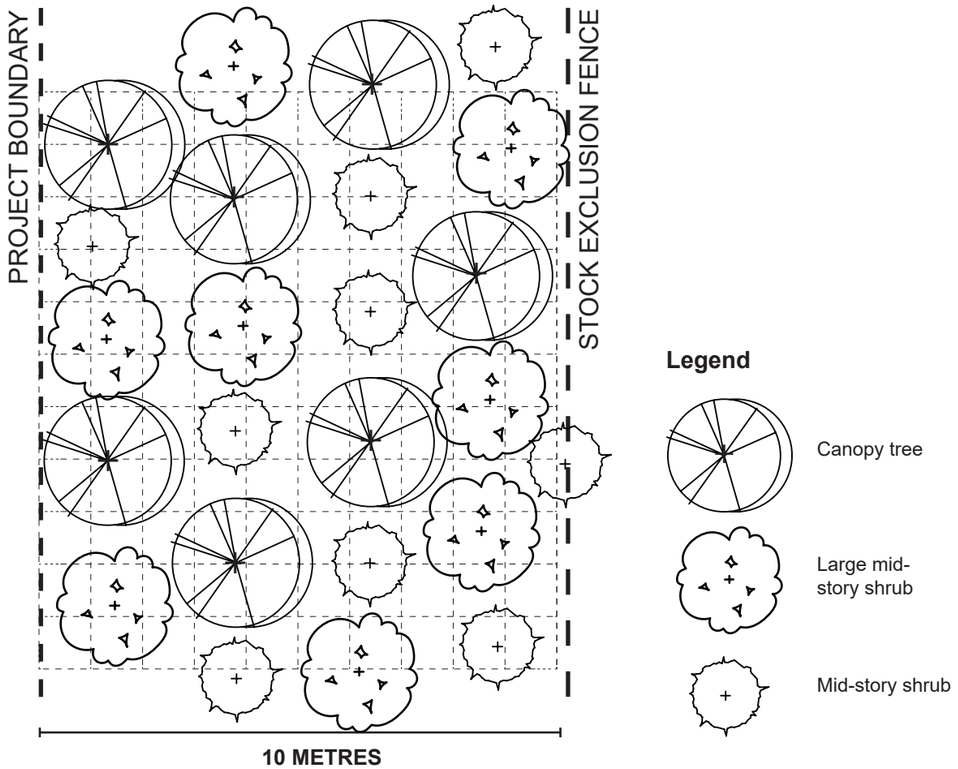
Various native trees and shrubs with a compact and dense growth habit have been chosen to provide optimal visual screening.

The selected plant list includes several acacia species which act as foundation planting. These species will quickly establish themselves and create an effective visual barrier in the short term. Although these species typically have a shorter lifespan of approximately 5 to 20 years, they will produce germinating and regenerating seeds, ensuring a long-term, self-sustaining vegetation screen. These foundation species help manage weeds, enrich the soil with nitrogen, and support the growth of longer-lived species such as Eucalypts.

The proposed vegetation consists of native species, predominantly featuring *Eucalyptus albens, Eucalyptus blakelyi, Callitris glaucophylla,* and *Eucalyptus melliodora.* Understory plants include *Acacia implexa, Bursaria spinosa, Acacia buxifolia, Acacia genistifolia, Callistemon citrinus, Dodonaea viscosa,* and *Leptospermum grandifolium.*

Asset Protection Zone

The design of the Asset Protection Zone has been informed by the standards for assest protection zones document by the NSW Rural Fire Service. The proposed planting prioritises mid and upper story vegetation to minimise potential bushfire fuel. This approach avoids understory vegetation, thereby reducing fire ladders that could facilitate fire spread. The Asset Protection Zone is assumed to be a minimum of 10 metres.



Indicative planting set-out

PRELIMINARY - NOT FOR CONSTRUCTION

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
P02	FINAL FOR APPROVAL		ER	LF	LF	29.11.24
P01	WIP FOR COMMENT		ER	LF	LF	10.01.24

Level 8, 180 Lonsdale Street, Melbourne VIC 3000 Australia
T 61 3 8687 8000 **F** 61 3 8687 8111
E melmail@ghd.com.au **W** www.ghd.com

DO NOT SCALE

Drawn	VW	Designer	LF
Drafting Check	COD	Design Check	LF
Approved (Project Director)			
Date	-		
Scale	NTS	This Drawing must not be used for Construction unless signed as Approved	

Client	XXXX
Project	XXXX
Title	XXXX XXXX
Original Size	A3
Drawing No:	~~31-12680552-GHD-00-00-SKT-LA-00004~~ Rev: P01

Plot Date: 29 November 2024 - 3:22 PM Plotted By: Caitriona O'Dowd Cad File No: N:\AU\Melbourne\Service\Landscape Architecture & Urban Design\Technical\Drafting\Titleblock\Example Titleblock.dwg

Landscape concept mitigation plan

Preparation and monitoring

Soil Preparation

Rip, ameliorate, and cultivate the soil.

Planting

All plant stock should be sourced locally to ensure provenance and adaptability to the local environment.

Use 50 x 50 mm tube stock or similar for planting.

Space canopy trees approximately 6 meters apart in a staggered linear arrangement to maintain 30% coverage. Space mid-story shrubs approximately 2-3 metres apart, interspersed amongst canopy trees to reach 20% coverage.

Mulching

Cover planting areas with a 75 mm thick, well-composted organic mulch to suppress weeds.

Protection

Stock fencing should be used to protect planting areas from grazing.

Establishment Period (12 weeks)

Conduct watering and weed management and replace dead plant stock as needed.

Monitoring Period (21 months)

Continue weed management, replenish mulch as necessary, and promptly replace any dead plant stock.

Planting types

Plant type	Botanical name	Common name	Mature height	Mature spread	Source
Canopy Tree	*Eucalyptus albens*	White Box	up to 20 metres	up to 15 metres	- NSW Government ecological community species listing - Bathurst Region Vegetation Management Plan 2019 - Landscape architect
	Eucalyptus blakelyi	Blakely's Red Gum	up to 25 metres	up to 20 metres	
	Callitris glaucophylla	White Cypress Pine	up to 20 metres	up to 10 metres	
	Eucalyptus melliodora	Yellow Box	up to 25 metres	up to 20 metres	
Large mid-story shrub	*Acacia implexa*	Lightwood	up to 15 metres	up to 10 metres	
	Bursaria spinosa	Sweet Bursaria	up to 10 metres	up to 4 metres	
Mid-story shrub	*Acacia buxifolia*	Box-leaf Wattle	up to 4 metres	up to 3 metres	
	Acacia genistifolia	Early Wattle	up to 2 metres	up to 2 metres	- Bathurst Region Vegetation Management Plan 2019 - Landscape architect
	Callistemon citrinus	Crimson Bottlebrush	up to 4 metres	up to 3 metres	
	Dodonaea viscosa	Broadleaf Hopbush	up to 4 metres	up to 2 metres	- NSW Government ecological community species listing - Bathurst Region Vegetation Management Plan 2019 - Landscape architect
	Leptospermum grandifolium	Woolly Teatree	up to 5 metres	up to 4 metres	- Bathurst Region Vegetation Management Plan 2019 - Landscape architect

It is recommended that the planting list is reviewed and approved by Bathurst Regional Council prior to implementation to ensure compliance with local regulations and environmental considerations.

PRELIMINARY - NOT FOR CONSTRUCTION

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
P02	FINAL FOR APPROVAL		ER	LF	LF	29.11.24
P01	WIP FOR COMMENT		ER	LF	LF	10.01.24

Level 8, 180 Lonsdale Street, Melbourne VIC 3000 Australia
T 61 3 8687 8000 **F** 61 3 8687 8111
E melmail@ghd.com.au **W** www.ghd.com

DO NOT SCALE

Drawn	VW	Designer	LF
Drafting Check	COD	Design Check	LF
Approved (Project Director)	-		
Date	-		
Scale	NTS	This Drawing must not be used for Construction unless signed as Approved	

Client **XXXX**
Project **XXXX**
Title **XXXX**
XXXX

Original Size **A3**
Drawing No: ~~31-12680552-GHD-00-00-SKT-LA-00001~~ Rev: **P01**

Plot Date: 29 November 2024 - 3:22 PM Plotted By: Caitriona O'Dowd
Cad File No: N:\AU\Melbourne\Service\Landscape Architecture & Urban Design\Technical\Drafting\Titleblock\Example Titleblock.dwg

ghd.com

→ The Power of Commitment