PETER HAACK
CONSULTING

Winton Renewable Energy Stability & Storage Terminal (WRESST)

Landscape and Visual Impact Assessment

29 May 2026

THIS REPORT HAS BEEN PREPARED FOR COGENCY ON BEHALF OF
WINTON RENEWABLE ENERGY STABILITY & STORAGE TERMINAL PTY LTD

PETER HAACK
CONSULTING

CONTENTS

Table of Figures

PETER HAACK
CONSULTING

Quality Assurance

File Name	Version	Version Date	Details	Reviewed and Approved	
Winton BESS_LVIA_FINAL	Final	29th May 2026	For Issue	Peter Haack	

Contact Details

Peter Haack

Director

Peter Haack Consulting

2/10 Waltham Place, Richmond 3121

Telephone No: 0409 946 938

Email: peter@peterhaack.com.au

Web: www.peterhaack.com.au

1 INTRODUCTION

Winton Renewable Energy Stability & Storage Terminal Pty Ltd (the Proponent) proposes to develop the Winton Renewable Energy Stability and Storage Stability Terminal (WRESST) (the Project), a utility-scale battery energy storage system (BESS), on private property located at 576 Winton-Glenrowan Road, adjacent to the Glenrowan Terminal Station.

The Project will have a capacity of up to 400 MW / 1600 MWh and will include associated infrastructure such as an underground transmission connection into the existing Glenrowan Terminal Station.

The Project is located immediately adjacent to Winton-Glenrowan Road, which runs adjacent and to the southeast of the Hume Freeway. Benalla is located approximately 14km to the southeast and Glenrowan, approximately 9km to the northeast. Both townships are located on, or immediately adjacent to the Hume Freeway (refer to ***Figure 1***).

The existing Winton and Glenrowan West solar farms are located immediately to the southeast and southwest of the Project, as well as Mokoan 1 and 2 solar farms to the northeast and to the northwest, on the opposite side of the Hume Freeway.

The Project area is approximately 15 hectares (ha) and the Development footprint approximately 6.5ha. The study area for most disciplines covers an area of approximately 26ha, however the study area for this landscape and visual impact assessment (LVIA) extends approximately 2km from the boundary of the Project area.

This report has been prepared by Peter Haack Consulting to provide an LVIA for inclusion in the Development Application.

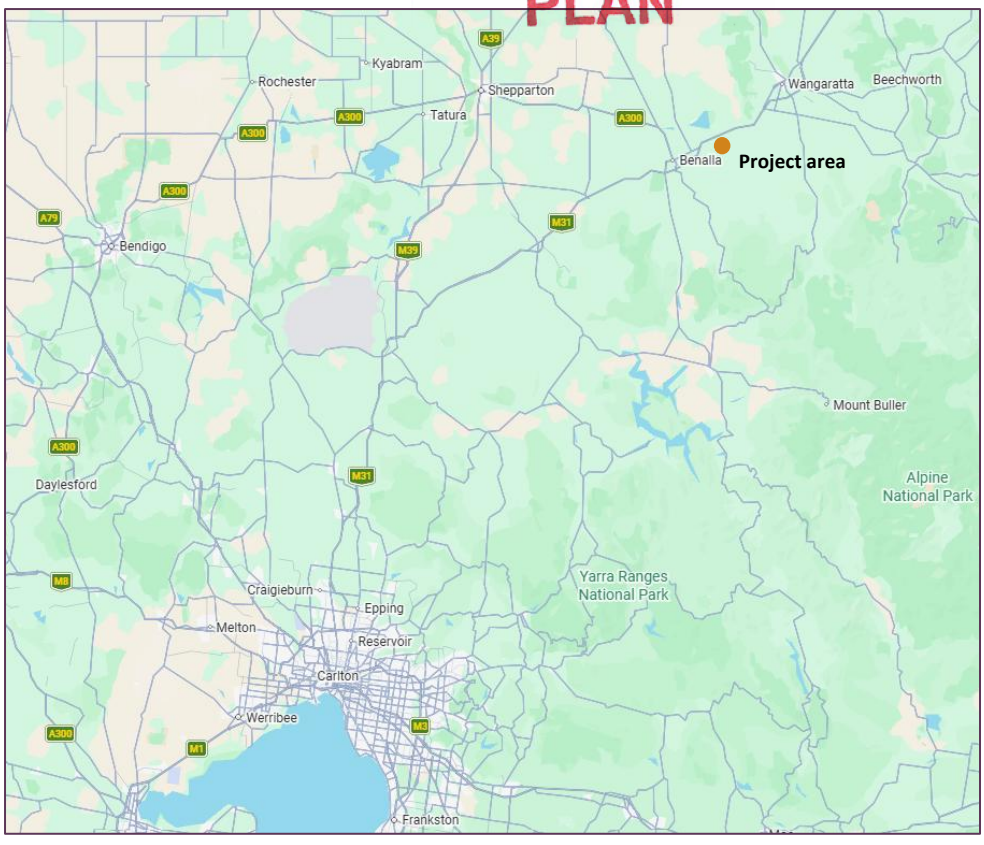

Figure 1 - Project location (Source: Google Maps).

PETER HAACK
CONSULTING

2 METHODOLOGY

2.1 Approach

While there are no specific legislative requirements for the methodology of an assessment such as this in Victoria, the profession typically refers to the guidance offered by:

- Guidance for Landscape and Visual Impact Assessment (GLVIA), Third Edition, Landscape Institute and Institute of Environmental Management & Assessment (2013).
- Guidance Note for Landscape and Visual Assessment, Australian Institute of Landscape Architects (AILA) (2018).
- Solar Energy Facilities Design and Development Guideline (October 2022).

The methodology used for this Project, described below, conforms generally to the direction offered by the above guidelines as well as other proven assessment methodologies.

This preliminary assessment report assesses the landscape and visual impact of the Project, that is the day-to-day visual effects on people's views.

The method to measure visual impacts is based on the combination of the sensitivity of viewers to the proposed change and the magnitude of the Project on that visual setting or view.

The following study components were included as part of this assessment:

- Review the Project with regard to potential visual impacts.
- Characterisation of the existing landscape and visual setting.
- Qualitatively assess:
  - Visual modification at key viewpoints – How would the Project contrast with the landscape character of the surrounding setting?
  - Visual sensitivity at key viewpoints – How sensitive would viewers be to the Project?
  - Potential night-lighting impacts.
- Propose visual impact mitigation and management measures.

2.2 Assessment of landscape and visual impacts

The landscape and visual impact assessment is based on a detailed analysis of the landscape and visual setting and an assessment of the potential impacts of the Project on its viewshed.

The critical issues considered for this LVIA were:

- The number and location of sensitive viewing locations;
- The duration of the view – either static (generally long term - > 1 hour) and mobile (generally short term continually moving and static for no longer than 5 minutes);
- The degree to which the proposed works would be visible;
- The quality of the landscape setting; and
- The degree to which the Project contrasts or is compatible with the visual character of the setting – the visual modification level.

The assessment method assumed that if the Project would not be seen, there is no impact (refer to ***Table 1***).

VISUAL IMPACT	Visual/Viewer Sensitivity		
	High	Moderate	Low
Level of Visual Modification to the Setting: High	High	High	Moderate
Moderate	High	Moderate	Low
Low	Moderate	Low	Low
Very Low	Low	Very Low	Very Low
Not Visible	No Impact	Not Impact	No Impact

Table 1 - Visual impact determination matrix.

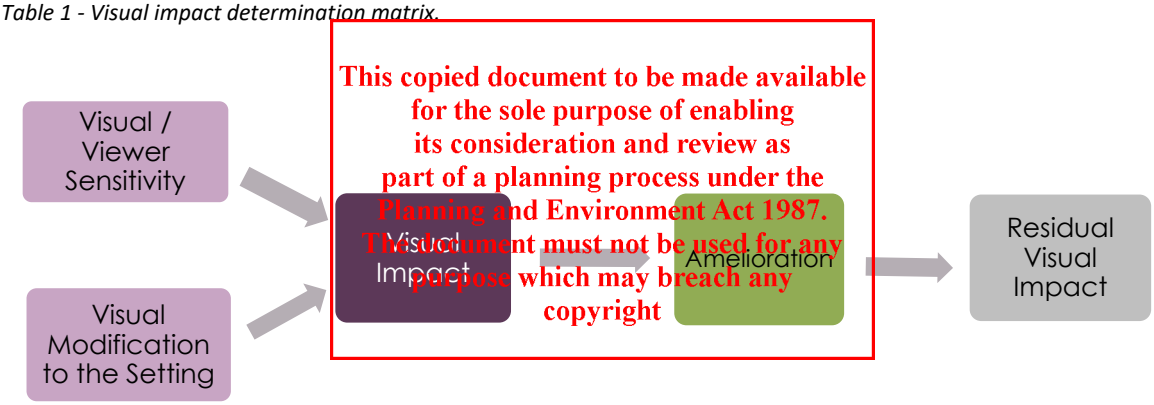

Diagram 1 - Visual impact assessment process.

2.2.1 Visual sensitivity

In this report, the approach to the visual sensitivity is consistent with the USDAFS visual management system[1].

The visual sensitivity of development depends on a range of viewer characteristics. The primary characteristics used in this report include:

- Land use;
- Distance of the development from viewers; and
- Visibility from sensitive land use areas.

[1] Landscape Aesthetics – A Handbook for Scenery Management, Agricultural Handbook No. 701. United States Department of Agriculture Forest Service (1995).

Visual sensitivity is a measure of how critically a change to the existing environment would be viewed from various land uses (refer to ***Table 2***). Different activities have different sensitivity levels. For example, tourists on holiday would generally view changes to a landscape more critically than industrial workers in the same area. Similarly, individuals would view changes to the visual setting of their homes more critically than changes to the broader area in which they travel or work.

The next critical component to rating the visual sensitivity is the distance of the development from the identified visual use area. There are three viewing situations to consider:

- foreground (0 - 1 km);
- midground (1 km – 4 km); and
- background (> 4 km).

As the distance increases from a proposed development to a sensitive land use area, the level of viewer sensitivity decreases based on a perceptual dis-association based on a reduction in relative proximity.

Visual Use Area	**Foreground** Local Setting		**Midground** Sub–Regional Setting		**Background** Regional Setting
	0 – 0.5 km	0.5 – 1 km	1 – 2 km	2 – 4 km	> 4 km
Residences	H	H	H	M	L
Tourism	H	H	H	M	L
Freeway/Highway "M" Category Road *(Hume Freeway)*	H	M	M	L	L
Passenger Rail *(Melbourne-Sydney)*	M	M	L	L	L
Local Roads *(Winton-Glenrowan Rd)*	L	L	L	VL	VL
Agricultural Areas	L	L	L	VL	VL
Renewable Energy	VL	VL	VL	VL	VL

Legend - H = High, M = Moderate, L = Low, VL = Very Low

Table 2 - Typical Viewer (visual) Sensitivity.

Another consideration in defining the level of sensitivity in situations where a development is proposed adjacent to an existing development of a similar form and scale, is that of de-sensitisation. In this scenario, those residing adjacent to the existing development may have become accustomed to its presence and may be less sensitive to an extension with a similar character.

Conversely, the additional development may result in a cumulative impact, with some becoming hyper-sensitised. Given the potential for varying reactions, the methodology takes a cautionary approach and defines all uses at the same sensitivity level as a "greenfields" site.

2.2.2 Visual modification to the existing setting

The level of visual modification resulting to a setting from a proposed development, or the degree to which the setting is modified, can be best measured as an expression of the visual interaction, or the level of visual contrast between the project and the existing visual environment.

A high level of magnitude, or a high degree of visual modification, will result if the major components of the project contrast strongly with the existing landscape.

A low level of magnitude, or a low degree of visual modification, will occur if there is little or minimal visual contrast and a high level of integration of form, line, shape, pattern, colour or texture values between the proposed development and the environment in which it sits. In this situation, the proposed development may be noticeable, but does not markedly contrast with the existing, already modified landscape (refer to ***Table 3***).

The degree of magnitude or modification would generally decrease as the distance from the Project to various viewing locations increases.

The presence of the existing and approved power related infrastructure, including the terminal station and surrounding powerlines, provides the Project with a significant degree of visual fit within the already modified landscape setting.

Modification Level	Description
High	The proposal is highly visible and intrusive regarding the size, scale and geographical extent, and would disrupt views currently experienced from sensitive land use areas and/or strongly contrasts with the existing landscape setting which has limited capacity for change.
Moderate	The proposal partially intrudes regarding the size, scale and geographical extent or somewhat obstructs current views from sensitive land use areas and/or a noticeable compositional change to the existing landscape setting in which there is moderate capacity for change.
Low	The proposal is barely perceptible resulting in minor deterioration to the view currently experienced from sensitive land use areas; and/or results in a small change to the existing landscape setting in which change is possible without harm.
Very Low	There is minimal compositional contrast and a high level of integration of form, line, shape, pattern, colour or texture values between the proposal and the environment in which it sits. In this situation, the proposal may be noticeable but does not markedly contrast with the existing landscape setting.
Not Visible	There are no views of the proposal components and as such, there is no impact.

Table 3 - Typical scenarios for determining the visual modification level.

2.2.3 Occupied field of view – Visual prominence

To assist with the assessment of visual prominence, this report defines several viewsheds which are based on distance from the project. The methodology is based on the reduction of impact with an increase in distance between a given viewpoint and the project. The potential visual impact of the project will also, to a large extent, depend on how much of the central field of vision it occupies (refer to ***Table 4***, ***Table 5*** and **Figure 2**).

Throughout the visual catchment, the degree of visual prominence will generally decrease as the distance from the development site to various viewing locations increases.

The quantitative assessment of visual prominence, i.e., how much is potentially visible, is intertwined with the distribution, height and density of vegetation as well as topography throughout the visual catchment, elements which can screen views of a development from a particular viewpoint. Visual prominence helps inform the process of determining the visual modification level as previously outlined in the above section.

In areas of flat topography, the vertical field of view of a BESS unit with a height of 3m will be less than 0.5 degrees, or of low visual prominence in distances beyond approximately 350m, and less

than 0.25 degrees, or of very low visual prominence in distances beyond 700m.

Degrees of Field of View Occupied	Potential Visual Prominence – Horizontal Field of View
Less than 5°	***Insignificant – Low Visual Prominence*** The development may not be highly visible in the view unless it contrasts strongly with the background.
5° – 30°	***Potentially Noticeable – Moderate Visual Prominence*** The development may be noticeable. The degree that it intrudes on the view will be dependent on how well it integrates with the landscape setting.
Greater than 30°	***Potentially Dominant – High Visual Prominence*** The development will be highly noticeable.

Table 4 - Horizontal line of sight – Visual impact / visual prominence.

Degrees of Field of View Occupied	Potential Visual Prominence – Vertical Field of View
0 ° - 0.25 °	***Barely Discernible – Very Low Visual Prominence*** A very thin line in the landscape.
0.25 ° - 0.5 °	***Insignificant - Low Visual Prominence*** A thin line in the landscape.
0.5 ° – 2.5 °	***Potentially Noticeable – Moderate Visual Prominence*** The development may be noticeable. The degree that it intrudes on the view will be dependent on how well it integrates with the landscape setting.
Greater than 2.5 °	***Potentially Dominant – High Visual Prominence*** The development will be highly noticeable, although the degree of visual intrusion will depend on the landscape setting and the width/spread of the object.

Table 5 - Vertical line of sight – Visual impact / visual prominence.

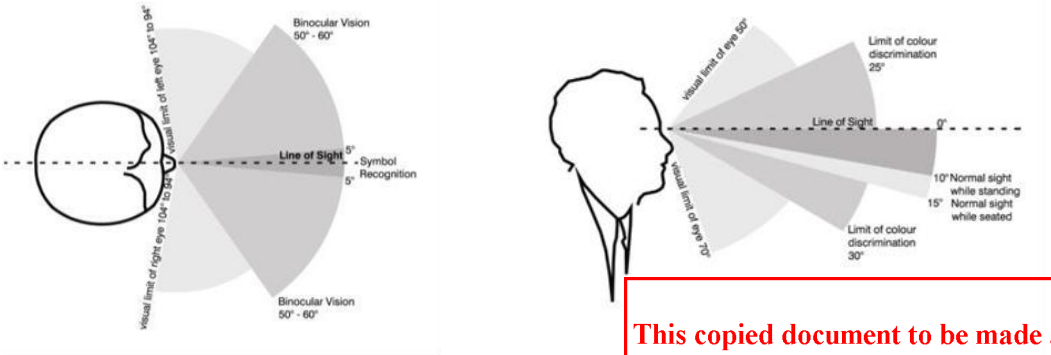

Figure 2 – Horizontal and vertical field of view.

2.2.4 Residual impacts

The effectiveness of the measures proposed in mitigating the landscape and visual impacts resulting from the Project is demonstrated by comparing the visual impact during initial operation with the residual impact when the proposed landscape measures have mostly matured, which is typically ten (10) years following initial establishment.

Generally, residual impacts would be reduced by at least one level where landscape measures have been proposed and have matured, as a result of the filtering of, or inhibiting views to the Project.

2.2.5 Cumulative impact

The landscape and visual impact of the project cannot be considered in isolation, as the site is located within a regional setting that includes a number of projects currently operating and approved or lodged projects that may commence construction in the near future.

In the definition of what projects are included in a cumulative impact assessment, the question of 'reasonable foreseeable future actions' should be considered in defining which projects are included in the cumulative impact assessment. That is, some approved projects could be shown to have little or no prospect of being developed and could be excluded from the assessment process.

2.2.5.1 Simultaneous cumulative impact

Simultaneous cumulative impact refers to occurrences where an impact may result from several potential visual intrusions being visible from an individual location at the one time.

2.2.5.2 Sequential cumulative impact

Sequential cumulative impact refers to occurrences when the viewer must move to another viewpoint to see different developments. Sequential cumulative impacts most typically apply to road users as they traverse the landscape along major roads.

2.3 Lighting impacts

AS-NZS-4282-2023 Control of the obtrusive effects of outdoor lighting provides standards for the assessment and limitation of lighting impacts. The standard identifies four environmental zones for exterior lighting which are categorised by the degree of artificial lighting within an area. For example, national parks would be categorised as an intrinsically dark landscape (Category A1), whereas a city centre with high levels of night-time activity would be categorised as a high district brightness area (Category A4).

The standard is aimed at the minimisation of light spill. Regardless of the existing brightness of a particular setting, it is a widely accepted principle that light spill, particularly upward light spill, be minimised wherever possible.

2.3.1 Lighting impact scenarios

Glow

Light glow is typically an upward projection of light that results in illumination of the night sky above a lighting source. It is intensified, or more visually apparent when foggy or cloudy as the light reflects or disperses of water droplets in the atmosphere. Glow is visible over significant distances.

Spill

Spill is light that falls on adjacent sensitive surfaces, both vertical and horizontal, and is most intrusive where it illuminates private open spaces or spills through windows.

Hot spots
Hot spots relate to concentrated areas of bright light in an otherwise less well illuminated setting. Hot spots will be most visible where are elevated.

Kinetic / movement
Lights that change colour or flash can draw the attention of a viewer. As the speed of the colour change or blink increases in speed, so too will its prominence of ability to draw attention.

2.4 Limitations of the assessment

There are these following limitations associated with this assessment:

- The LVIA process aims to be objective and, as such, seeks to describe any changes factually. Potential changes resulting from the project have been defined. However, the significance of these changes requires qualitative (Projective) judgements to be made. Therefore, the conclusions to this assessment combine both objective measurement and Projective professional interpretation. This assessment has attempted to be objective, however, it is recognised that visual assessment can be highly Projective, and individuals are likely to associate different visual experiences to the study area;
- The impact assessment is focused on the current land uses and zoning; and
- Methodology of the construction works are currently unknown and dependent upon planning approvals. However, we have assumed that the impacts during construction would result in a similar degree of visual impact to that of the operational phase assessment findings, pre-amelioration.

PETER HAACK
CONSULTING

3 COMPONENTS OF THE PROJECT

3.1 Key features

As illustrated in ***Figure 3*** the Project involves the development of a 6.5ha BESS facility on the approximately 15ha Project area and the construction of an underground transmission connection to the Glenrowan Terminal Station.

The works and components associated with the Project include:

- BESS compounds and control building.
- Substation and associated electrical infrastructure.
- An approximately 550m long underground transmission connection into Glenrowan Terminal Station.
- Auxiliary Power supplies.
- Protection and control equipment.
- Operations and maintenance building.
- Storage shed.
- Access points and internal tracks.
- Water storage systems and fire-fighting infrastructure.
- Security fencing and monitoring systems.
- Earthworks.
- Stormwater detention.
- Landscaping to the Winton-Glenrowan Road/Hume Freeway interface.
- Security lighting to BESS, inverter and HV switchroom.

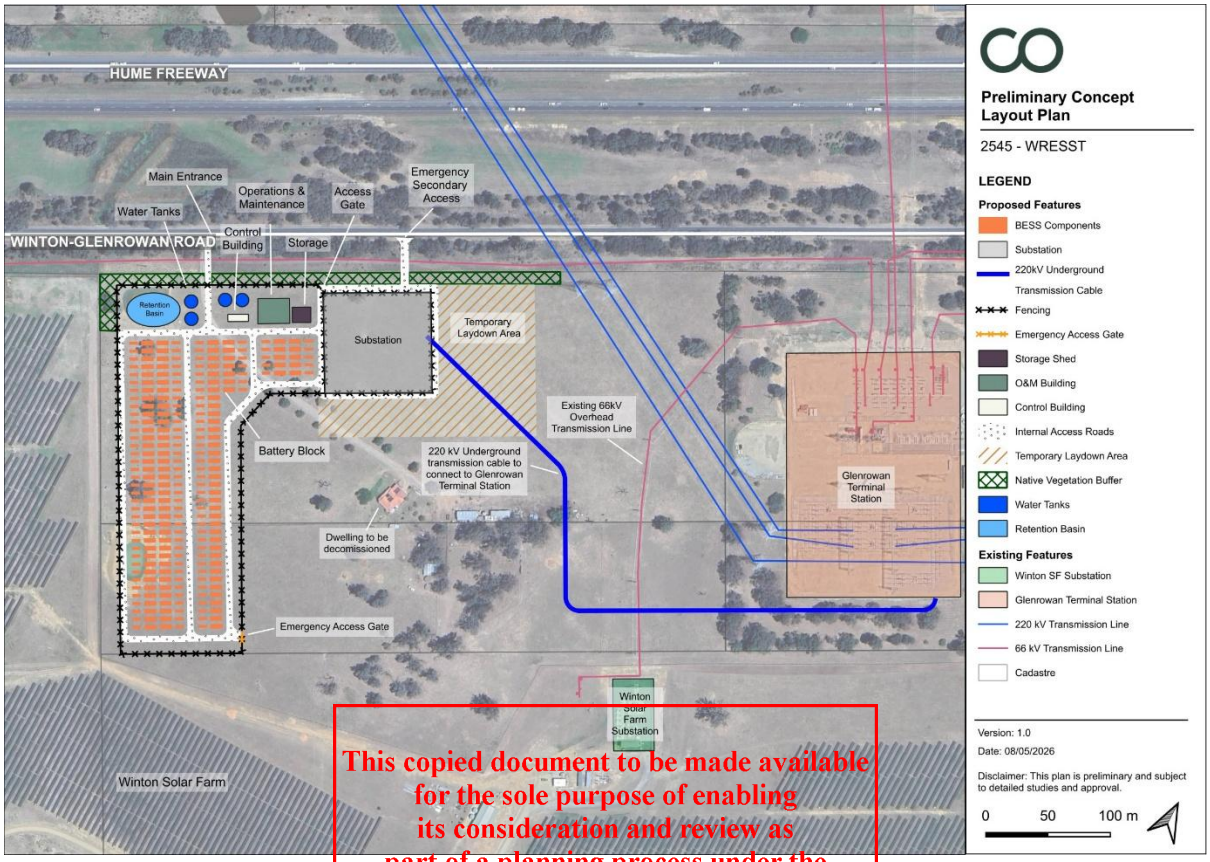

Figure 3 – Site plan of the Project (Source: Cogency)

3.2 Detail of project components

The most visible components of the Project that may result in visual impacts to surrounding sensitive receptors are outlined below.

3.2.1 BESS Blocks

Installation of batteries housed inside approximately 128 BESS containers constructed of steel, with indicative dimensions of 6.1m (length) x 1.7m (width) x 2.9m (height) (refer to ***Figure 4***).

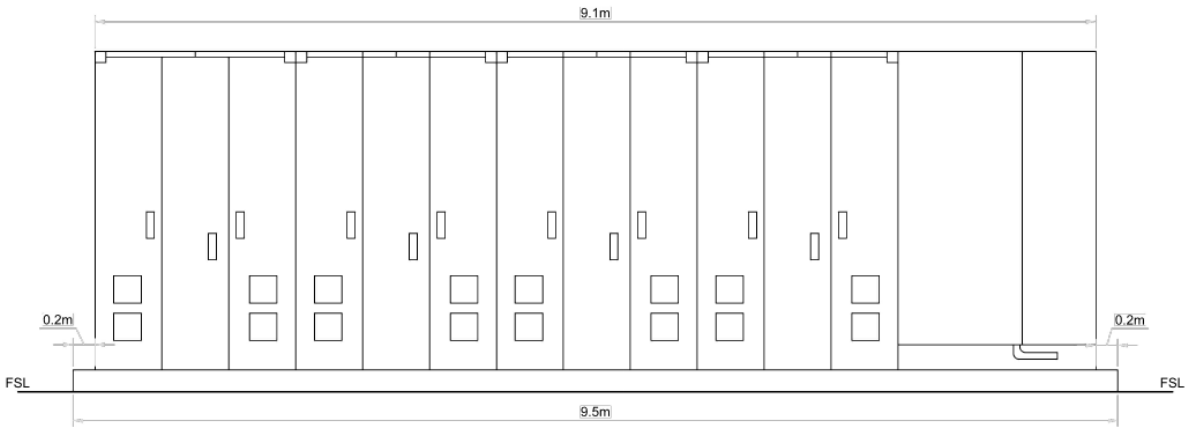

Figure 4 – Proposed BESS module – front elevation.

3.2.2 Substation

The equipment for the substation and associated hardstand areas will have a footprint of approximately 70m x 85m, a typical height of between approximately 5m and 9.5m and a maximum height of approximately 22.3m for the slender lightning masts (refer to ***Figure 5***).

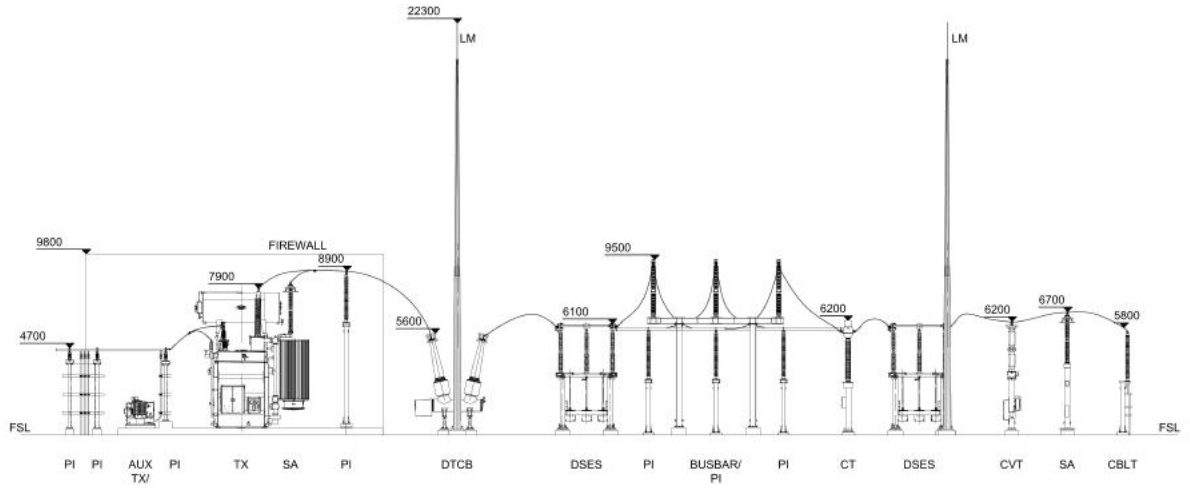

Figure 5 – Switching station – elevation.

3.2.3 HV Switchroom

The HV switchroom will have a footprint of approximately 25.4m x 6m and a maximum height of 6.2m (refer to ***Figure 6***).

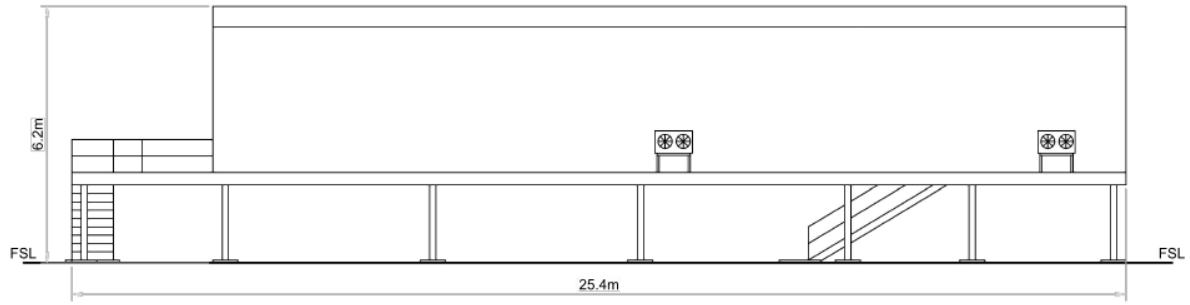

Figure 6 – Proposed HV switchroom – front elevation.

3.2.4 BESS control building

The BESS control building will have a footprint of approximately 17.1m x 5.6m and a maximum height of 5.5m (refer to ***Figure 7***).

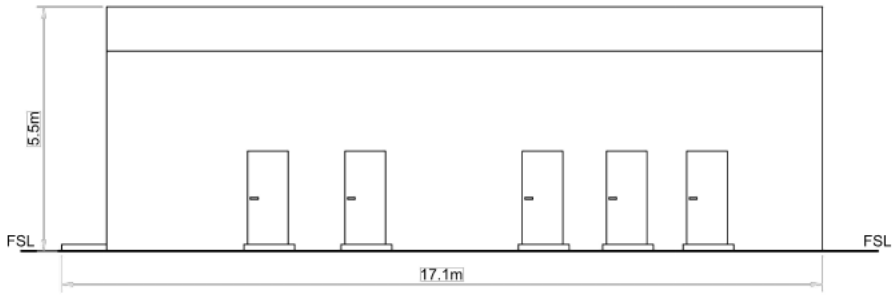

Figure 7 – Proposed BESS control building – front elevation.

3.2.5 Connecting underground powerline

An approximately 550m section of underground powerline is required to connect the substation at the Project to the main grid at the Glenrowan Terminal Station.

3.2.6 Operations and maintenance building

The operations and maintenance building will be a relatively simple, low-profile structure, approximately 20m long, 25m wide and 8m high (refer to ***Figure 8***).

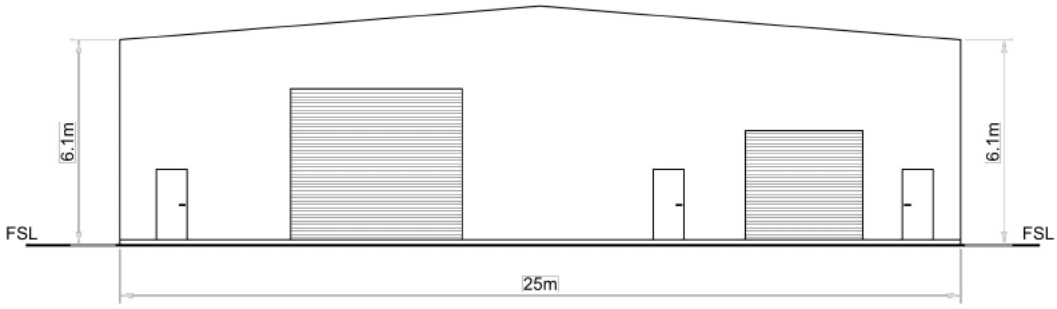

Figure 8 – Concept for operations and maintenance building.

3.2.1 Storage shed

The storage shed will comprise two large shipping containers with an interconnecting arched tensile structure spanning the internal space, approximately 12.2m long, 14.9m wide and 7.1m maximum height (refer to ***Figure 8***).

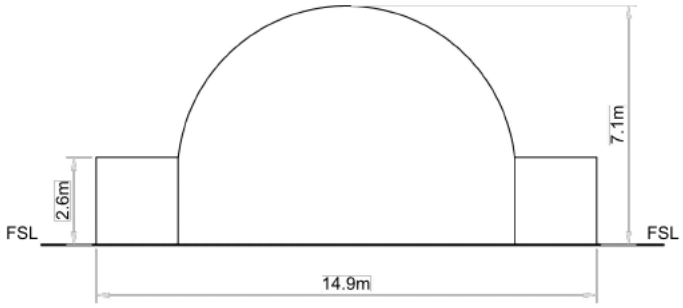

Figure 9 – Concept for storage shed.

3.2.2 Perimeter Fence

A chainmesh fence will be installed around the Project development area (refer to ***Figure 10***). The purpose of the fence is to deter theft or vandalism and prevent unauthorised access to equipment.

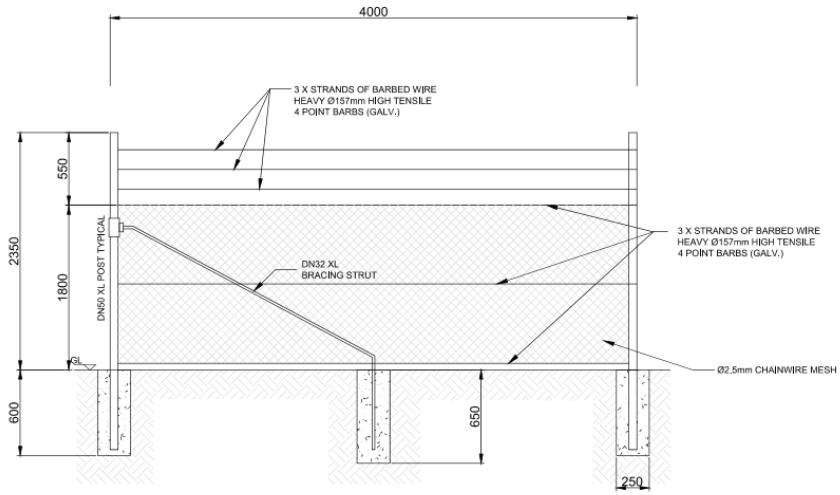

Figure 10 – Typical security fence detail.

4 PROJECT CONTEXT AND SETTING APPRAISAL

4.1 Project context

The approximately 6.5ha Development area is situated centrally on a regular shaped parcel of land, approximately 15ha in area (the Project area), which is located at 576 Winton-Glenrowan Road, Winton.

Winton-Glenrowan Road forms the northwestern boundary and the existing Glenrowan Terminal Station the northeastern boundary. The Winton Solar Farm forms the southwestern and southeastern boundaries (refer to ***Figure 11***).

Figure 11 - Project context (Source: Google Earth Pro - 2025).

4.2 Land use and zoning

4.2.1 Land use

The typical land use of the Project area and the broader surrounding area comprises cattle and sheep grazing with more recently developed energy infrastructure proximate to the Project area (refer to ***Figure 12*** and ***Figure 13***).

The existing energy infrastructure within the surrounding area includes:

- The existing Glenrowan Terminal Station and the associated transmission lines connecting to it (refer to ***Figure 14*** and ***Figure 15***).
- The Winton Solar Farm immediately to the southwest and south (refer to ***Figure 16***).
- The Glenrowan West Solar Farm 1.5km to the northeast (refer to ***Figure 17***).
- The Mokoan 1 and 2 Solar Farms 260m to the north (refer to ***Figure 18***)

There are also above-ground electrical distribution lines connecting the Mokoan 1 Solar Farm to the Glenrowan Terminal Station that cross Winton-Glenrowan Road and the Hume Freeway (refer to ***Figure 19***).

The most significant road within the viewshed of the Project is the Hume Freeway, an "M" category road, located 110m to the northwest. Winton-Glenrowan Road, a local level road, traverses the northeastern boundary of the Project area. The Melbourne to Sydney rail line, providing both passenger and freight services, is located further to the north (refer to ***Figure 11*** and ***Figure 12***).

Benalla and Glenrowan, the largest proximate towns, are located outside of the viewshed of the Project. Mokoan is a comprised of a limited number of dispersed residences.

Rural residences are sparsely scattered throughout the landscape, with typical land holdings being in the order of 200ha (refer to ***Figure 20***).

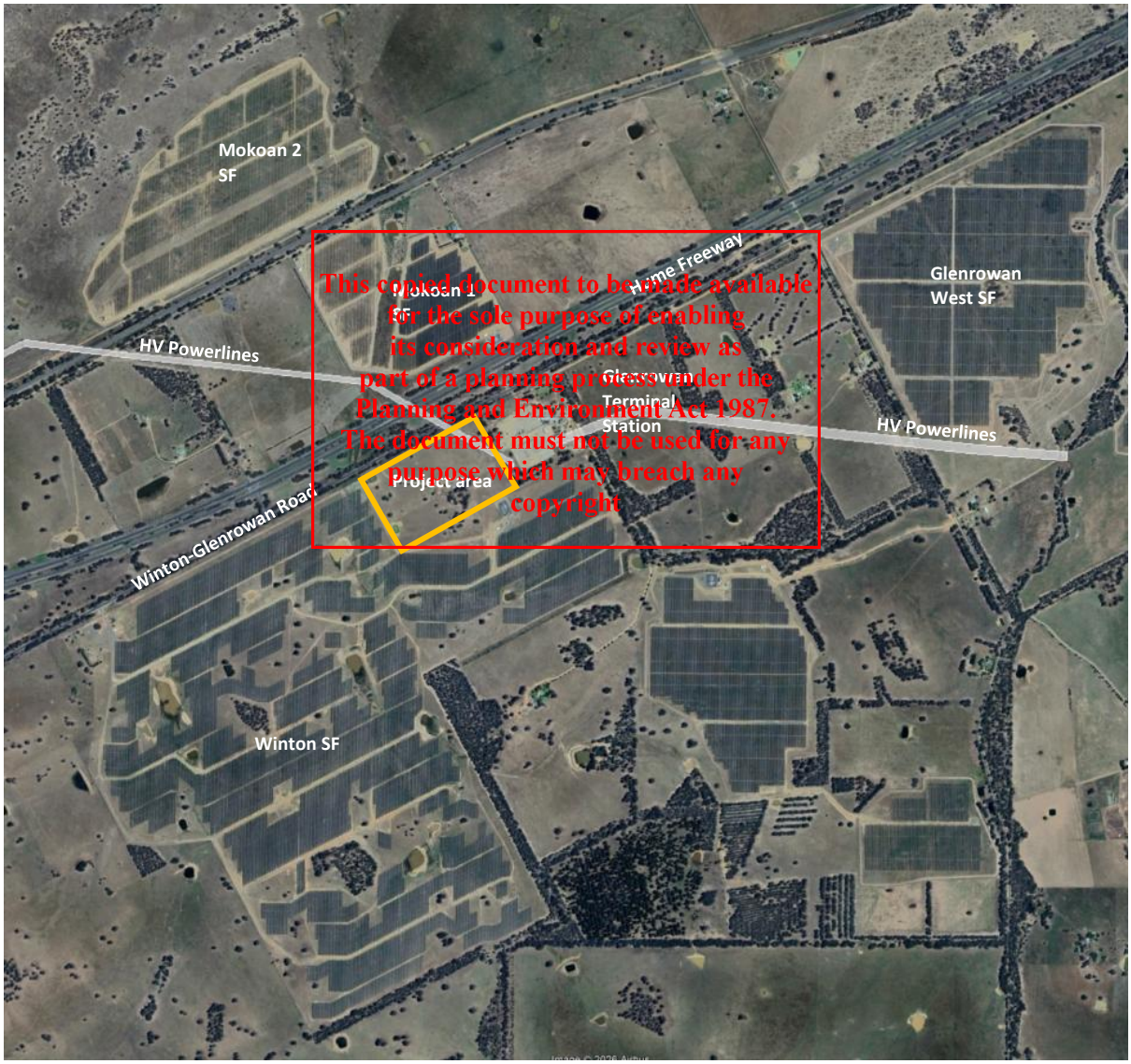

Figure 12 – Land use and existing infrastructure (Source: Google Earth Pro – 2025).

Figure 13 – Typical agricultural land use in the area to the northwest of the Project area.

Figure 14 – The Glenrowan Terminal Station, as viewed from Winton-Glenrowan Road.

Figure 15 – Existing HV Powerlines traverse the landscape from west to east including through the northeastern part of the Project area.

Figure 16 - Winton Solar Farm as viewed from the southern verge Winton-Glenrowan Road, near the Project area.

Figure 17 - Glenrowan West Solar Farm as viewed from Winton-Glenrowan Road.

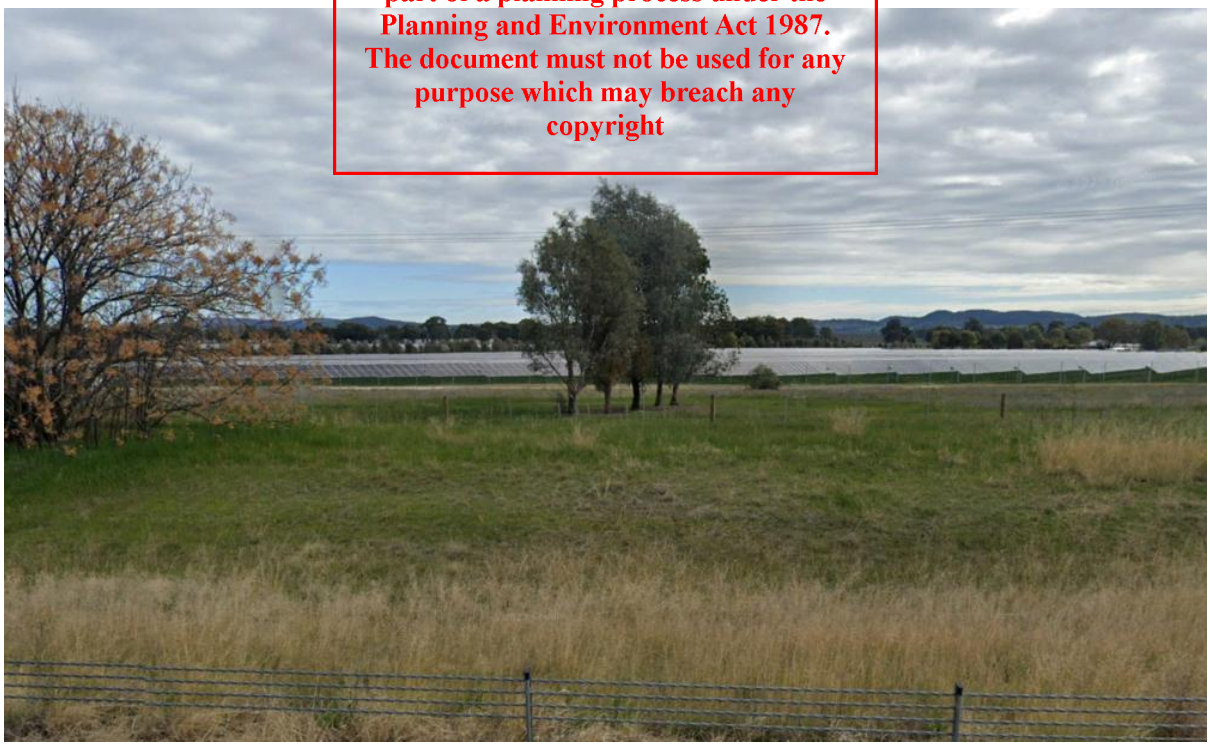

Figure 18 - Mokoan 1 Solar Farm as viewed from the Hume Freeway.

Figure 19 - Powerlines connecting the Mokoan 1 Solar Farm to the Glenrowan Terminal Station cross Winton-Glenrowan Road and the Hume Freeway.

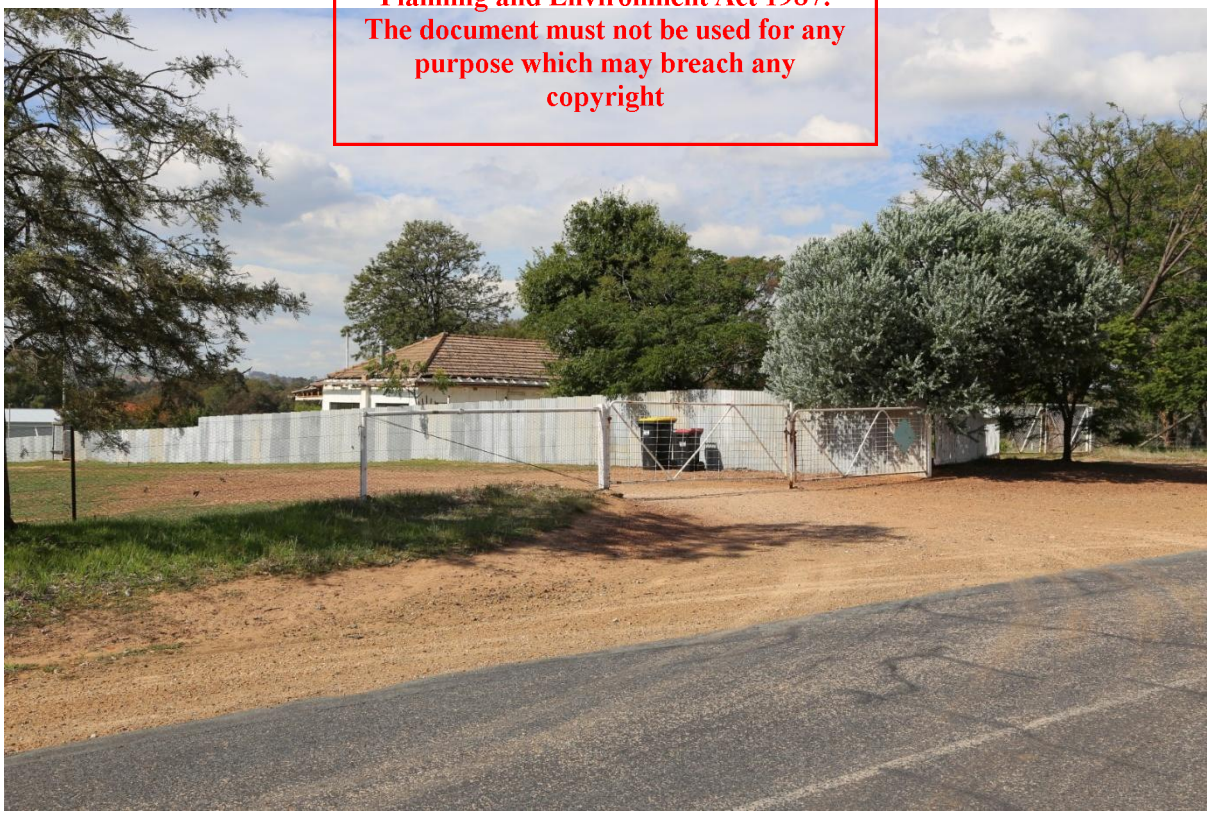

Figure 20 - Typical rural residential use in the area surrounding the Project area.

4.2.2 Zoning

The Project is located within the Benalla Rural City Council and zoned Farming Zone (FZ) within the Benalla Planning Scheme (refer to ***Figure 21***). This zoning also applies to surrounding areas which contain existing solar farms.

Land use zones that may indicate the presence of sensitive adjacent uses or viewers, include the Melbourne – Sydney railway line to the north of the Project is zoned Transport Zone 1 – State Transport Infrastructure (TRZ1) and the Hume Freeway corridor, adjacent to the north of the Project, is zoned Transport Zone 2 - Principal Road Network (TRZ2). Winton-Glenrowan Road is zoned Transport Zone 3 - Significant Municipal Road (TRZ3).

The site of the adjacent Glenrowan Terminal Station to the northeast is zoned Special Use Zone – Schedule 4 (SUZ4).

The Project is located approximately 3.3km to the southeast of Lake Mokoan/Winton Wetlands. The area of the waterbody subject to inundation is zoned PUZ1, while a strip of land around the perimeter of the lake is zoned PPRZ.

The key relevant objectives of the planning scheme for PPRZ land are:

- To recognise areas for public recreation and open space.
- To protect and conserve areas of significance where appropriate. To provide for commercial uses where appropriate.

Typically, PPRZ zoned land with developed recreation facilities would be rated of a higher visual sensitivity land use, but in this instance, there is no access to the area and no facilities.

Vegetation Protection Overlay – Schedule 3 (VPO3) extends over the Project area from the Hume Freeway to the south (refer to ***Figure 22***). The primary purpose of this control is the protection of the Regent Honey Eater. The control is not primarily related to landscape or scenic values.

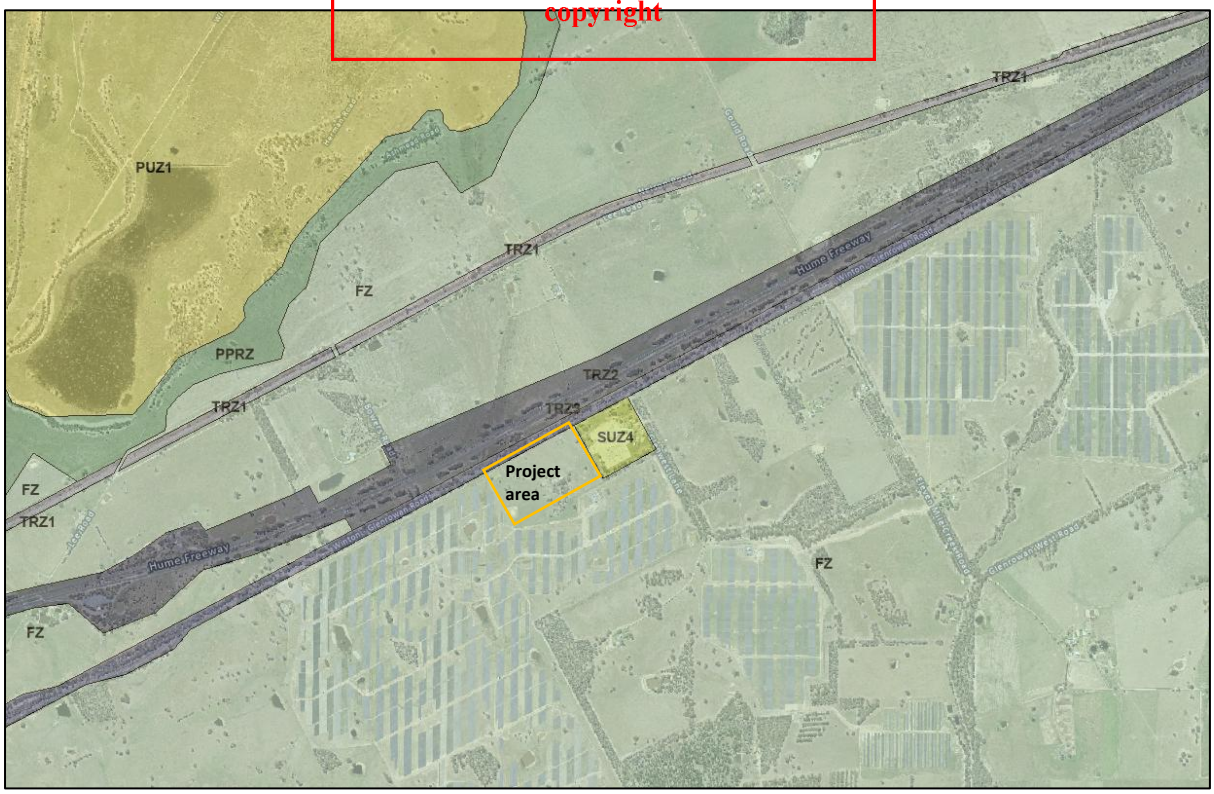

Figure 21 - Zoning Map (Source: https://planning-schemes.app.planning.vic.gov.au).

Figure 22 - Vegetation Protection Overlay - Schedule 3 (VPO3) (Source: https://planning-schemes.app.planning.vic.gov.au).

4.3 Vegetation and landscape form

4.3.1 Vegetation

The existing landscape surrounding the Project, outside of the broad hectare energy infrastructure developments, is a highly modified agricultural landscape of primarily grazed paddocks, with scattered vegetation lining the road and rail transport corridors, as well as paddock boundaries, particularly on the property to the east of the Project area (refer to ***Figure 23***).

Relatively dense vegetation lines the Hume Freeway and Winton-Glenrowan Road (refer to ***Figure 24, Figure 25***, ***Figure 26*** and ***Figure 27***).

The vegetation is comprised of mostly indigenous and native species, predominantly Eucalypts.

The Project area is mostly cleared but has widely spaced exotic trees lining the driveway to the residence located on the property and a large area of scattered vegetation to the south of the residence (refer to ***Figure 28*** and ***Figure 29***).

The sparsely located rural residences are mostly set within a vegetated setting surrounding the residence itself (refer to ***Figure 30*** and ***Section 5.1.3***).

The vegetation patterning throughout the landscape results in views being compartmentalised and views to the Project area from the north, west and east being either filtered or screened.

Figure 23 – Vegetation patterns of the Project area and immediate surrounds (Source: Google Earth - 2025).

Figure 24 – Typical roadside vegetation on Winton-Glenrowan Road to the northwest of the Project area.

Figure 25 – Typical roadside vegetation and road cutting on the Hume Freeway to the north northwest of the Project area (Source: Google Earth - 2025).

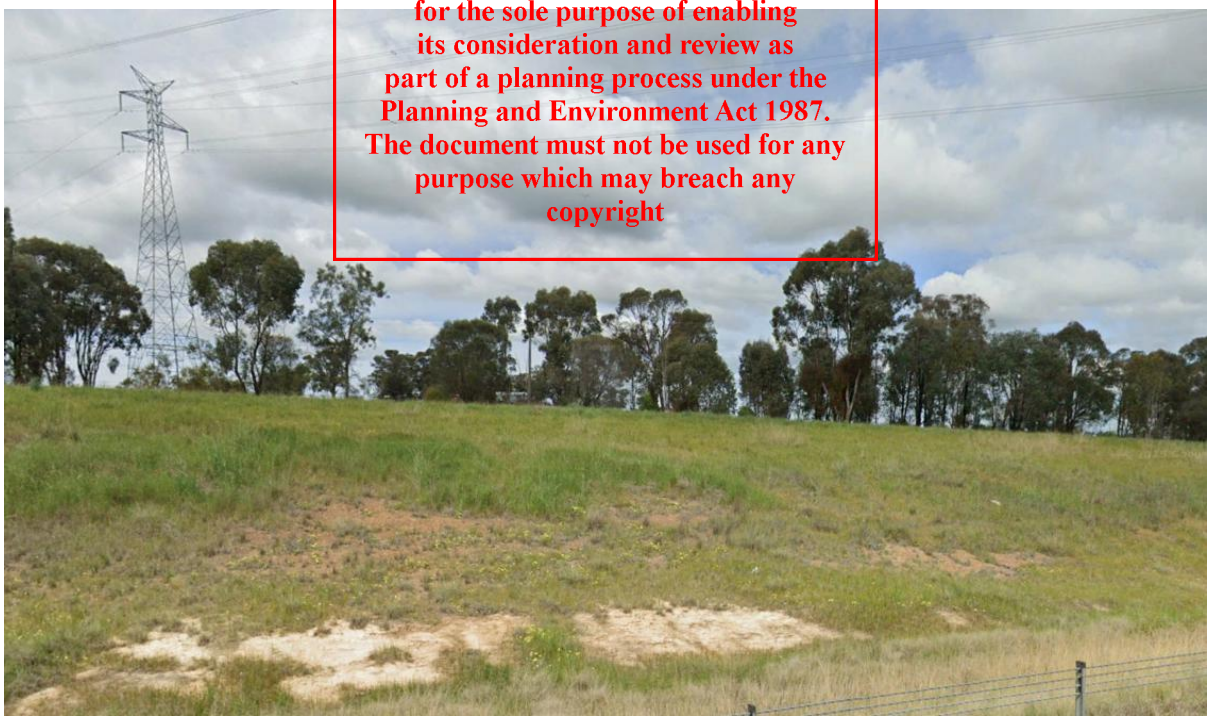

Figure 26 – A break in the typical roadside vegetation and road cutting on the Hume Freeway to the northwest of the Project area at the point where the existing HV powerlines cross the roadway (Source: Google Earth - 2025).

Figure 27 - Typical roadside vegetation on the Hume Freeway to the west of the Project area at the point where the existing HV powerlines cross the roadway (Source: Google Earth - 2025).

Figure 28 - Vegetation on and immediately adjacent to the Project area (Source: Google Earth).

Figure 29 – The Project area is mostly cleared of vegetation apart from that associated with the residence and outbuildings.

Figure 30 – Scattered vegetation surrounds the closest rural residences to the northwest of the Project area.

4.3.2 Landscape form

To the northwest of the Hume Freeway, the topography surrounding Lake Mokoan/Winton Wetlands is mostly flat, apart from a number of lightly incised waterways, siting at approximately 160m AHD. However, to the southeast of the freeway, the landscape becomes undulating with prominent rises increasing in frequency to the east and south towards the Warby Range to a maximum elevation of 501m AHD at Mount Glenrowan (refer to ***Figure 31***).

The elevation of the Project area ranges from approximately 175m AHD in its northwest corner to approximately 200m AHD in its central south in the vicinity of the residence on the Project area (refer to ***Figure 32***, ***Figure 33***, ***Figure 34***, ***Figure 35*** and ***Figure 36***).

The Project components will be located on land to the southwest and northwest of the Project area, with the elevation in the order of 175m AHD to 182m AHD.

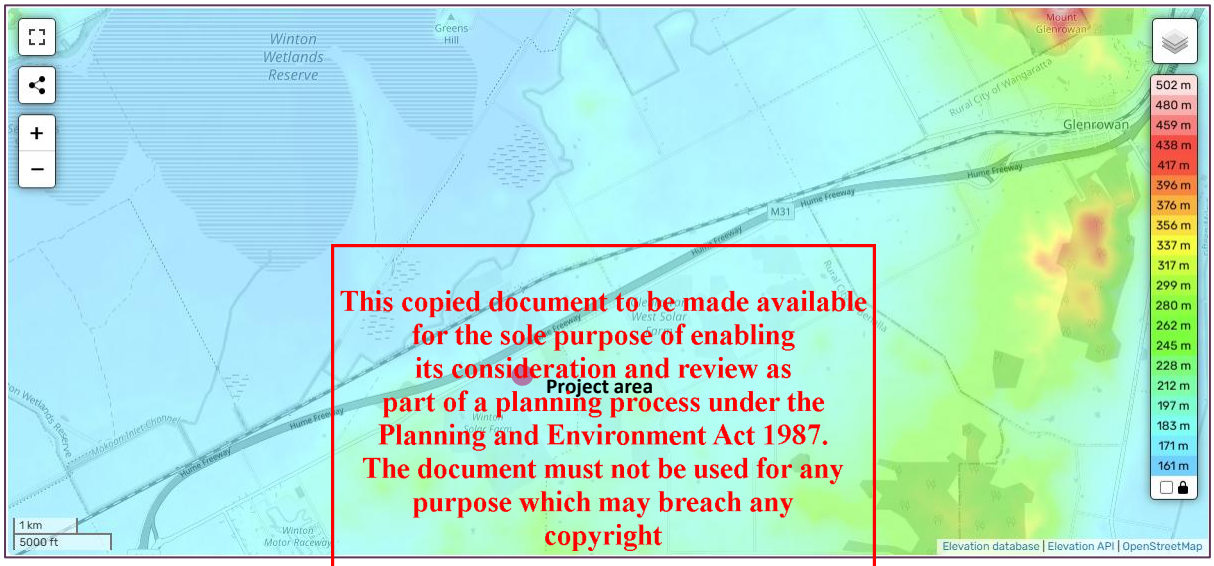

Figure 31 - Elevation of broader surrounds of the Project area (Source: OpenStreetMap).

Figure 32 - Elevation of the Project area and surrounds (Source: OpenStreetMap).

Figure 33 - Elevation of the Project area (Source: OpenStreetMap).

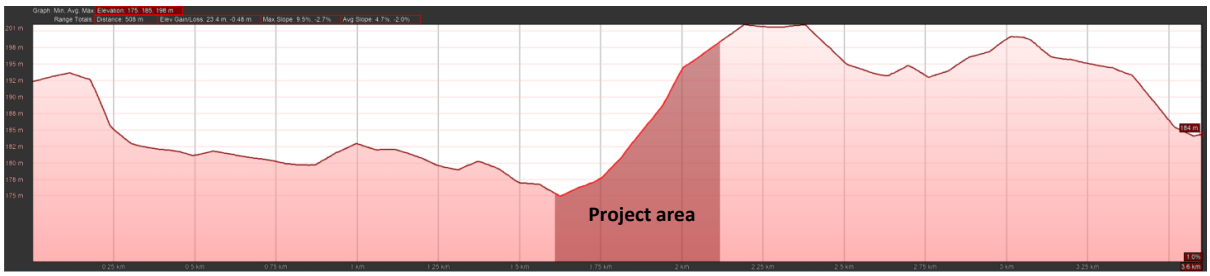

Figure 34 – West to east exaggerated elevation profile of topography through the Project area (Source: Google Earth Pro).

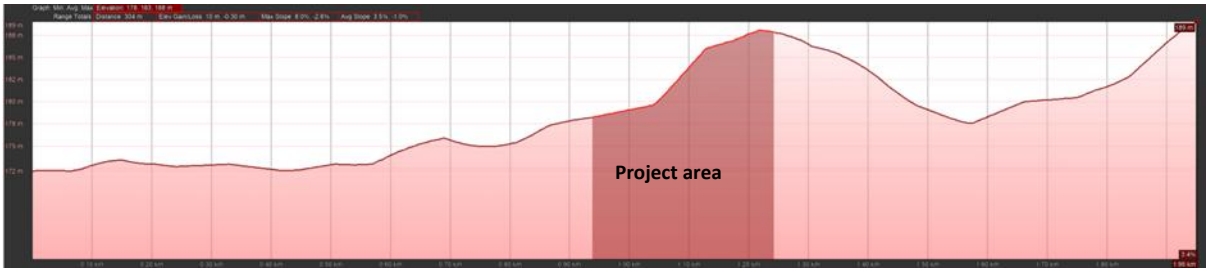

Figure 35 – North to south exaggerated elevation profile of topography through the Project area (Source: Google Earth Pro).

Figure 36 – View of the less elevated part of the Project area where the Project components will be located.

4.4 Landscape character type

Landscape character is the relationship between geology, topography, vegetation, waterbodies and other natural features, combined with the effects of land use and built form. Assessing the landscape character of an area provides the basis for understanding the features and views that are important, and how different types of development sit within the landscape.

Leonard and Hammond[2] in their high-level assessment of Victorian landscape character types, identified the area as sitting at the border of two landscape types (refer to ***Figure 37***). These are:

- Murray Basin Plains – Northern District Plains Subtype.
- Foothills.

[2] Landscape Character Types of Victoria, Leonard and Hammond, Forests Commission of Victoria (1984)

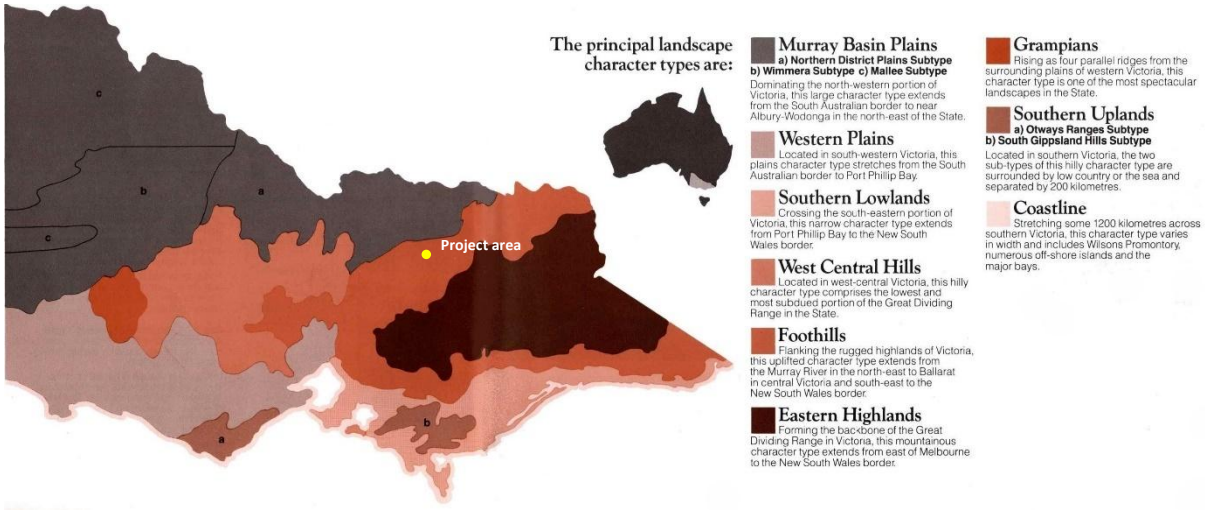

Figure 37 – Landscape Character Types of Victoria Map (Leonard and Hammond, 1984, pgs. 6 & 7).

4.4.1 Murray Basin Plains – Northern District Plains Subtype

The landscape type is extensive, extending approximately 320km from Wodonga in the east to the Avoca River in the west. The landscape is virtually flat with occasional complex braided stream networks.

The highly agricultural landscape contains pockets of remnant vegetation comprised of stringybark and ironbark eucalypts away from waterways and red gums along the waterways.

4.4.2 Foothills

This landscape type is described as a transitional stage between the highlands and alps of the Great Dividing Range and the flat Victorian Plains, with topography moderating with distance from the range. Numerous streams running through the landscape unit arise in the Eastern Highlands.

The main forest type is described as a stringybark forest, with densities highest on more elevated land and on steeper slopes. Less elevated areas and shallower slopes have typically been cleared for agricultural purposes.

4.5 Scenic Quality

Scenic quality is somewhat subjective but typically is a combination of a range of factors that have been found to contribute to the human appreciation of landscape. These factors are:

- Topographic variation and ruggedness;
- Strong patterning of vegetation; and
- The presence of water.

Agricultural landscapes are particularly subject to divergent opinions as to what constitutes scenic values. However, basic principles relating to diversity of topography, patterning of vegetation and the presence of water remain contributing factors to a higher level of scenic quality.

4.5.1 Murray Basin Plains – Northern District Plains Subtype

Leonard and Hammond describe the attributes and the scenic quality of the Murray Basin Plains – Northern District Plains Subtype landscape character type in ***Table 6***.

Description	Low to Moderate Scenic Quality
Landforms	Flat to slightly undulating landform with occasional small, rounded hills.
Vegetation	Scattered trees with little diversity, arranged along property boundaries and with occasional areas of grouping. Extensive agricultural clearings.
Waterforms	Permanent and intermittent waterways and lake.

Table 6 – Murray Basin Plains – Northern District Plains Subtype landscape unit scenic quality (Source: Leonard and Hammond).

4.5.2 Foothills

Leonard and Hammond describe the attributes and the scenic quality of the Foothills landscape character type in ***Table 7***.

Description	Low to Moderate Scenic Quality
Landforms	Significant expanses of indistinctively rolling landform that are not dramatically defined by adjacent landform.
Vegetation	Vegetative patterns evident but of common pattern relative to the surrounding landscape character. Extensive areas of similar vegetation and limited variation in colour or texture.
Waterforms	Intermittent streams. Minor reservoirs.

Table 7 - Foothills landscape unit scenic quality (Source: Leonard and Hammond).

4.6 Absorptive Capability

The definition of landscape absorptive quality is closely related to that of visual modification levels. It is generally applied at a broader scale than visual modification and is an assessment of how well a landscape setting can accommodate change or a development.

The key factors considered in determining absorptive capability are topography and vegetation. In areas of flatter topography, overlooking is not possible and even a low and thin band of vegetation is able to screen views to a development from a given viewpoint. In areas of undulating or elevated topography, overlooking can occur and vegetation needs to be higher and denser to achieve effective screening. Intervening undulating topography also has the potential to block views in certain landscapes.

The landscape setting of the Project and immediate surrounds (up to 2km distant) is slightly undulating with minor hill forms. Vegetation is mostly confined to a rectilinear pattern reflecting property boundaries and roads. Within this landscape, overlooking is generally not possible from most sensitive viewpoints, and even relatively low vegetation (up to eye-height) is effective at screening views (refer also to ***Section 5.1.1***).

Topography – High capability due to the flat topography, with no potential for overlooking within a 2km radius.

Existing Vegetation – Generally low for highly cleared agricultural areas. Moderate to high capability where vegetation exists, particularly roadside plantings.

The overall absorptive capability is high given the limited vertical scale of the Project.

4.7 Landscape impacts

The proposed form of the Project components on the low to moderate scenic quality landscape character type will change the landscape character of the immediate Project area. However, the type of development proposed will be consistent with character of the existing adjacent renewable energy projects

The overall landscape impacts, or landscape change, will be consistent with those previously allowed under the zoning.

5 VISUAL IMPACT ASSESSMENT

5.1 Visibility of the Project

5.1.1 Theoretical zone of visual influence (TZVI)

The viewshed is the area from which views of a proposed development may be possible. Given the relatively low profile of the more extensive BESS components of the Project above ground level, the visual catchment will be limited and partially confined by vegetation throughout the landscape of the setting.

Figure 38 indicates the theoretical viewshed of the Project, based on a digital surface model (DSM), of topography only, to a distance of 2km. For the proposed substation components, an average height of 8m has been assumed. Topography based TZVIs are considered a worst-case scenario in terms of visibility, as they do not consider the screening effects of vegetation in the landscape.

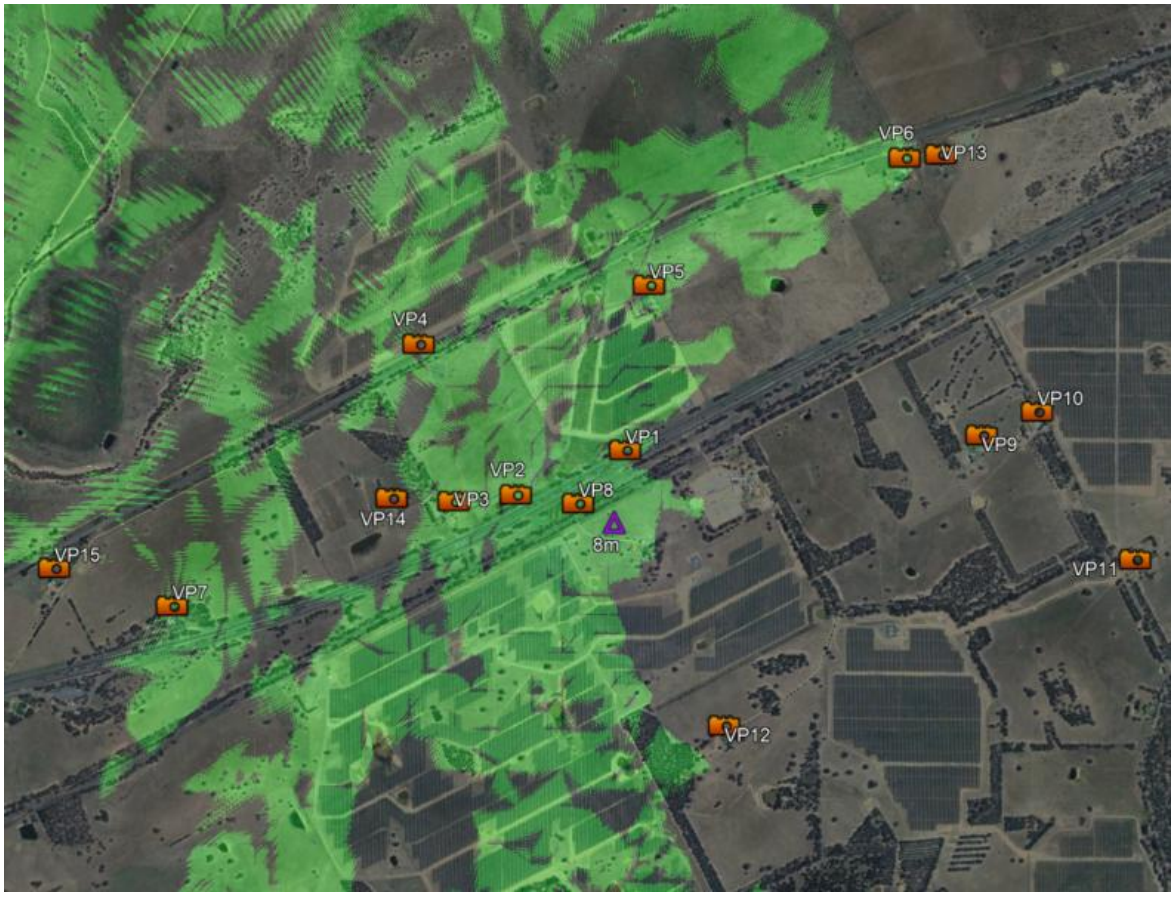

Figure 38 – DTM based TZVI of the highest proposed components, the substation at 8m in height.

5.1.2 Existing energy infrastructure

Apart from vegetation throughout the landscape additional screening of views to that shown in the DTM derived TZVI are the existing energy projects that surround the Project area.

The existing solar panels, with an overall height of between 3 and 4.5m at full lilt, will provide varying levels of screening of views to the Project during daylight, particularly for road viewpoints to the west/west southwest.

5.1.3 The effect of rural/rural living residential vegetation on visual screening

In order to provide protection from the influences of the environment, particularly sun and wind, Australian rural/rural living residential gardens have traditionally developed a dense band of vegetation to surround an intimate and protected home yard. The effect of this in many instances has been to effectively contain the viewshed from the house and surrounding yard itself, screening distant views. The presence of foreground vegetation has a direct impact on the visibility of the Project and the context in which it will be viewed.

Vegetation within the landscape more distant from the residence that may provide additional screening of views is not considered at this time. However, it is considered as part of the detailed viewpoint assessment.

5.1.3.1 Rural residential viewpoint landscape setting typologies

Throughout the visual catchment, the majority of residences sit within a landscape that is comprised of medium to tall vegetation, with varying levels of density depending on either the extent of clearing or extent of planting.

The height and density of vegetation have a direct relationship to the visual exposure of the residence to the proposed development.

The following three setting typologies have been developed to assist the understanding of the influence of vegetation on the screening of views from residences.

The assessment has considered the overall screening effect of vegetation as it relates to the direction of views towards the Project. For example, if the vegetation at the perimeter of the residence is sparse on the side away from the direction of views to the Project and dense on the side where there may be potential views, the effect of screening vegetation reflects the side with views. The same applies for the converse situation.

5.1.3.1.1 Typology 1 – Minimally screened

Views to external areas are minimally to partially filtered by scattered vegetation.

Influence on visibility and potential impact

Partial to open views of the proposed development will be possible over open pasture or below and between tall, scattered trees. The potential exists for visual impact (refer to Figure 39).

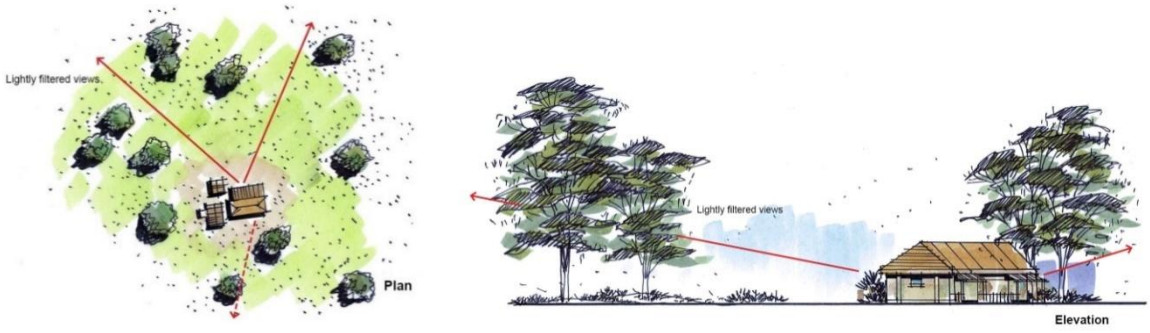

Figure 39 - Typology 1 – Minimally screened. Typical plan and elevation.

5.1.3.1.2 Typology 2 – Partially screened

Views to external areas are partially to heavily screened by vegetation.

Influence on visibility and potential impact

Partial to fully screened views of the proposed development will only be possible where limited breaks in vegetation occur. The potential for visual impact is significantly reduced (refer to Figure 40).

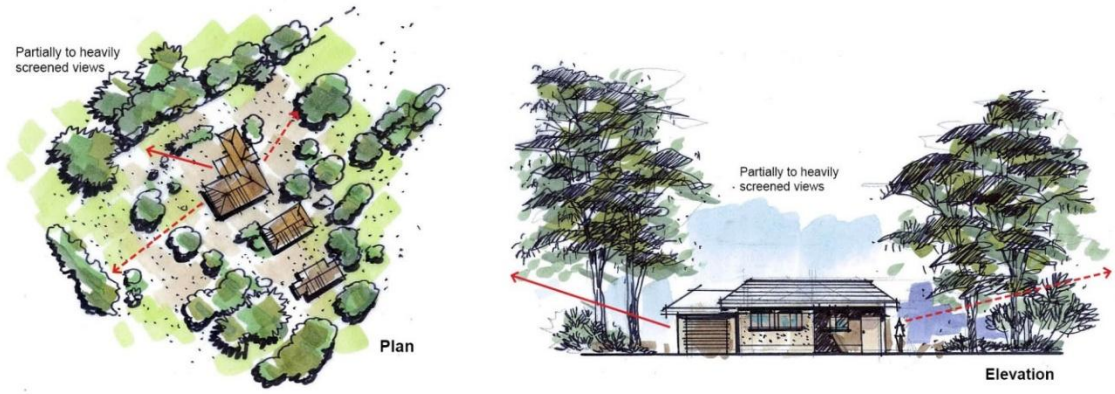

Figure 40 - Typology 2 – Partially screened. Typical plan and elevation.

5.1.3.1.3 Typology 3 – Heavily screened

Views to external areas heavily to fully screened by dense vegetation.

Influence on visibility and potential impact

Views of the proposed development will not be possible and therefore any impacts are highly unlikely (refer to Figure 41).

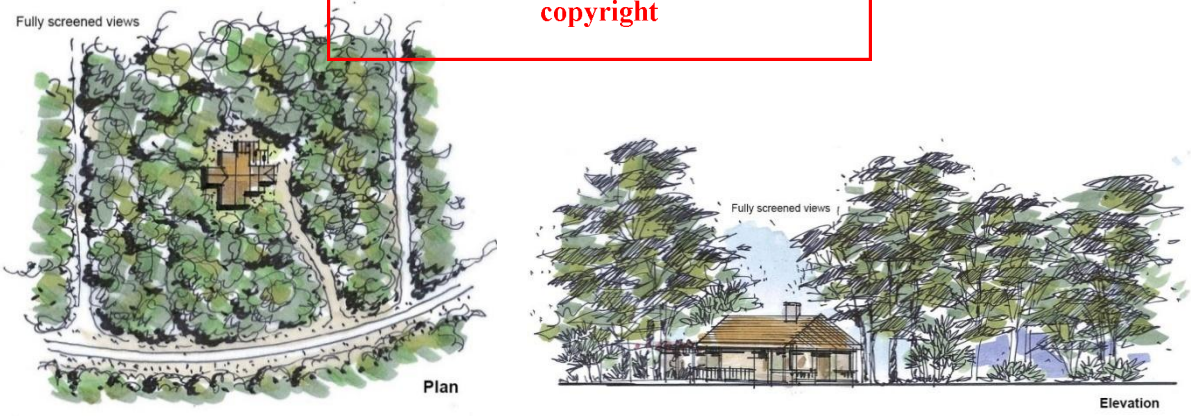

Figure 41 - Typology 3 – Heavily screened. Typical plan and elevation.

5.1.3.2 Overview assessment of the effects of vegetation screening on views from residences

A desktop assessment was undertaken based on aerial photography and Google Streetview imagery (2025 data) as well as a field survey, of the potential degree of visibility from residences surrounding the Project, considering the following factors:

- Proximity to the Project:
  - Within 1 km of the Project boundary.

- Degree of vegetation present around the residence, either:
  - Heavily screened,
  - Partially screened, or
  - Minimally screening.

The effect of vegetation screening is shown in ***Figure 42*** and is considered in the detailed viewpoint assessments in ***Section 5.3.1***.

Figure 42 – Screening effect of vegetation on views from residences (Source: Google Earth Pro).

5.1.4 Visual prominence

In areas of flat topography, the vertical field of view of a BESS unit with a height of 3m will be less than 2.5 degrees, or of moderate visual prominence in viewing distances beyond 70m, less than 0.5 degrees, or of low visual prominence in distances beyond approximately 350m, and less than 0.25 degrees, or of very low visual prominence in distances beyond 700m.

The vertical field of view of the typical components of the switching station, with a height of 10m, will be less than 2.5 degrees, or of moderate visual prominence in distances beyond 230m, will be less than 0.5 degrees, or of low visual prominence in distances beyond 1.1km, and less than 0.25 degrees, or of very low visual prominence in distances beyond 2.2km.

The horizontal field of view is not considered relevant given the relatively small footprint of the Project, and the distance from sensitive viewpoints, resulting in an angle of less than 30 degrees, or no greater than a moderate level of visual prominence.

5.2 Sensitive viewpoints

The viewpoint (VP) locations that are included in this assessment are from uses considered to be of higher sensitivity (refer to ***Table 2*** and ***Figure 43***). Due to the relatively low-profile form of the Project and the considerable amount of screening provided by the existing vegetation, the detailed assessment of viewpoints has been confined to sensitive locations that are within 1 km of the Project and also fall within the TZVI, the area within which the Project will be most visible.

The locations selected for photography and assessment are within the public realm and proximate to the sensitive, privately owned visual use area.

Figure 43 – Assessed viewpoint (VP) locations (Source: Google Earth Pro - 2025).

5.3 Visual impact assessment

This section includes a detailed assessment of the Project from the selected, highest sensitivity viewpoints, with a rating given for the level of visual modification and sensitivity which, when combined, result in a determination of the degree of overall visual impact for each viewing location.

5.3.1 Detailed assessment of representative sensitive viewpoints

VIEWPOINT 1 – HUME FREEWAY SOUTHBOUND	
Photo Location	Hume Freeway near the northeast corner of the Project area (refer to ***Figure 44 -left***).
Viewing Distance	170m to the Project (substation) from the photo location.
Duration of View and Frequency of View	Duration: Dynamic – 110kmh. Frequency: High.
Visual Use Area	National Highway ("M" Category Road) – Partially screened setting (refer to ***Figure 44 –right***).
Visual Sensitivity	**HIGH** - Sensitivity of users is high based on the "M" category road use within 500m.
Visual Modification	**VERY LOW to LOW**– From this viewpoint, which is located in a section of road cutting, the Project will be mostly screened by intervening topography and vegetation along the freeway and Winton-Glenrowan Road (refer to ***Figure 45***)
Visual Impact	**LOW to MODERATE**– The high level of visual sensitivity combined with a very low to low level of visual modification results in a low to moderate level of visual impact.
Proposed Amelioration	**PERIMETER SCREENING** – Amelioration is proposed for the northern perimeter of the Project.
Residual Impact	**NOT VISIBLE to VERY LOW** – Proposed amelioration would heavily screen views of the Project.

Figure 44 – Location of freeway viewpoint (VP1) and photo in relation to Project (left aerial view) and immediate landscape setting (right aerial view) (Source: Google Earth).

Figure 45 – VP1 – Landscape character of setting and existing view northwest towards the Project from the southbound lanes of the Hume Freeway (Source: Google Streetview – 2025).

VIEWPOINT 2 – HUME FREEWAY NORTHBOUND	
Photo Location	Hume Freeway near the northwest corner of the Project area (refer to ***Figure 46 -left***).
Viewing Distance	270m to the Project (BESS).
Duration of View and Frequency of View	Duration: Dynamic – 110kmh. Frequency: High.
Visual Use Area	National Highway ("M" Category Road) – Partially screened setting (refer to ***Figure 46 –right*** and ***Figure 47***).
Visual Sensitivity	**HIGH** - Sensitivity of users is high based on the "M" category road use within 500m
Visual Modification	**NOT VISIBLE to VERY LOW** – From this viewpoint, the Project will be mostly screened by vegetation to the south of the freeway and along Winton-Glenrowan Road (refer to ***Figure 47*** and ***Figure 48***).
Visual Impact	**NOT VISIBLE to LOW** – The high level of visual sensitivity combined with a not visible to very low level of visual modification results in a not visible to low level of visual impact.
Proposed Amelioration	**PERIMETER SCREENING** – Amelioration is proposed for the northern perimeter of the Project.
Residual Impact	**NO IMPACT** – Proposed amelioration would fully screen views of the Project (refer to ***Figure 49***).

Figure 46 – Location of VP2 in relation to Project (left aerial view) and immediate landscape setting (right aerial view) (Source: Google Earth).

Figure 47 – VP2 – Landscape character of setting and existing view southeast towards the Project from the northbound lanes of the Hume Freeway.

Figure 48 – VP2 – Photomontage - View southeast from the Hume Freeway to the Project – At completion of construction with wireframe overlay of not visible areas.

Figure 49 – VP2 – Photomontage - View west from Bowers Road to the southwest of the residence to the Project – 5 years post landscape amelioration.

VIEWPOINT 3 – RESIDENCE AT 6 BOWERS ROAD	
Photo Location	Bowers Road near the driveway to the residence (refer to ***Figure 50-left***)
Viewing Distance	450m to the Project (BESS) from the residence and 460m to the Project (BESS) the photo location.
Duration of View and Frequency of View	Duration: Static. Frequency: Low.
Visual Use Area	Residential – partially screened setting (refer to ***Figure 50– right*** and ***Figure 51***).
Visual Sensitivity	**HIGH** - Sensitivity of users is high based on the residential use.
Visual Modification	**NOT VISIBLE to VERY LOW** – From this viewpoint, the Project will be almost fully screened by vegetation to the south of the freeway and along Winton-Glenrowan Road (refer to ***Figure 52***, ***Figure 53*** and ***Figure 53***).
Visual Impact	**NOT VISIBLE to LOW** – The high level of visual sensitivity combined with a not visible to very low level of visual modification results in a not visible to low level of visual impact.
Proposed Amelioration	**PERIMETER SCREENING** – Amelioration is proposed for the northern perimeter of the Project as well as the northern part of the western perimeter.
Residual Impact	**NO IMPACT to VERY LOW** – Proposed amelioration would almost fully screen views of the Project.

Figure 50 – Location of residence (VP3) and photo in relation to Project (left aerial view) and immediate landscape setting (right aerial view) (Source: Google Earth).

Figure 51 – VP3 - View of the landscape character of the residence from Bowers Road.

Figure 52 – VP3 – Existing view west to the Project from Bowers Road, adjacent to the residence.

Figure 53 – VP3 – Photomontage - View west from Bowers Road to the southwest of the residence to the Project – At completion of construction with wireframe overlay showing that the Project will not be visible.

VIEWPOINT 4 – MELBOURNE-SYDNEY RAILWAY LINE	
Photo Location	Lee Road, approx. 20m south of the railway line (refer to ***Figure 54 - left***).
Viewing Distance	915km to the Project (BESS) from the railway line and 895m from the photo location.
Duration of View and Frequency of View	Duration: Dynamic. Frequency: Low.
Visual Use Area	Passenger Rail – partially screened setting (refer to ***Figure 54 –right*** and ***Figure 55***).
Visual Sensitivity	**MODERATE** - Sensitivity of users is moderate based on the passenger related tourism use.
Visual Modification	**NOT VISIBLE** – From this viewpoint, the Project will be fully screened by vegetation to the south of the railway line as well as to the south of the freeway and along Winton-Glenrowan Road (refer to ***Figure 56***).
Visual Impact	**NOT VISIBLE** – The Project will not be visible from this viewpoint. As a result, there is no visual impact.
Proposed Amelioration	**NONE REQUIRED** – Although Amelioration is proposed for the northern perimeter of the Project, it is not required for this viewpoint.
Residual Impact	**NO IMPACT** – As there is no visual impact, amelioration will not have any influence on the level of residual impact.

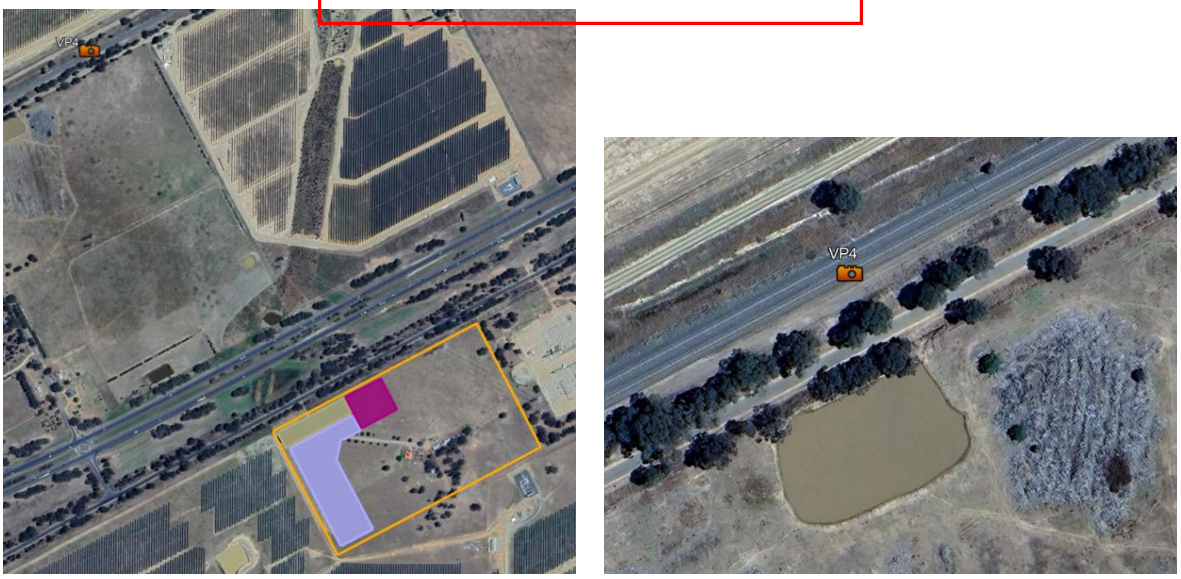

Figure 54 – Location of railway line viewpoint (V4P) in relation to Project (left aerial view) and immediate landscape setting (right aerial view) (Source: Google Earth).

Figure 55 – VP4 – View of the landscape setting of the railway line from Lee Road to the south.

Figure 56 – VP4 – View south to the Project from immediately to the south of the railway line.

VIEWPOINT 5 – RESIDENCE AT 116 LEE ROAD	
Photo Location	Lee Road approx. 180m north of the residence (refer to ***Figure 57 – left***).
Viewing Distance	1km to the Project (Substation) from the photo location and 840m from the residence
Duration of View and Frequency of View	Duration: Static. Frequency: Low.
Visual Use Area	Residential – heavily screened setting (refer to ***Figure 57 –right*** and ***Figure 58***).
Visual Sensitivity	**HIGH** - Sensitivity of users is high based on the residential use. Note: This residence was an involved party for the Mokoan 1 SF.
Visual Modification	**NOT VISIBLE to VERY LOW** – From this viewpoint, the Project will be almost fully screened by vegetation around the residence as well as to the south of the freeway and along Winton-Glenrowan Road. Where visible, the Project will be visually compatible with the existing solar panels and the terminal station (refer to ***Figure 59***).
Visual Impact	**NOT VISIBLE to LOW** – The high level of visual sensitivity combined with a not visible to very low level of visual modification results in a not visible to low level of visual impact.
Proposed Amelioration	**PERIMETER SCREENING** – Amelioration is proposed for the northern perimeter of the Project.
Residual Impact	**NO IMPACT to VERY LOW** – Proposed amelioration would almost fully screen views of the Project.

Figure 57 - Location of residence (VP5) and photo in relation to Project (left aerial view) and immediate landscape setting (right aerial view) (Source: Google Earth).

Figure 58 – VP5 - Landscape character of setting.

Figure 59 – VP5 - Existing view from the Lee Road near the driveway to the residence, south southwest towards the Project. The Mokoan 1 Solar Farm is visible to the right of the image and the Glenrowan terminal station to the centre left.

VIEWPOINT 6 – RESIDENCE AT ELEVEN MILE CREEK ROAD	
Photo Location	Eleven Mile Creek Road to the north of the residence (refer to ***Figure 60 -left***).
Viewing Distance	1.7km to the Project (Substation) from the residence and 1.8km from the photo location (Substation).
Duration of View and Frequency of View	Duration: Static. Frequency: Low.
Visual Use Area	Residential – heavily screened setting (refer to ***Figure 60 -right*** and ***Figure 61***).
Visual Sensitivity	**HIGH** - Sensitivity of users is high based on the residential use.
Visual Modification	**NOT VISIBLE to VERY LOW** – From this viewpoint, the Project will be almost fully screened by vegetation surrounding the residence as well as to the south of the freeway and along Winton-Glenrowan Road (refer to ***Figure 62***).
Visual Impact	**NOT VISIBLE to LOW** – The high level of visual sensitivity combined with a not visible to very low level of visual modification results in a not visible to low level of visual impact.
Proposed Amelioration	**PERIMETER SCREENING** – Amelioration is proposed for the northern perimeter of the Project.
Residual Impact	**NO IMPACT to VERY LOW** – Proposed amelioration would almost fully screen views of the Project.

Figure 60 – Location of residence (VP6) and photo in relation to Project (left aerial view) and immediate landscape setting (right aerial view) (Source: Google Earth).

Figure 61 – VP6 - View of the landscape setting on the western side of the residence from Lee Road to the northwest of the residence.

Figure 62 – VP6 – View towards the Project from Lee Road to the northwest of the residence.

VIEWPOINT 7 – HUME FREEWAY – NORTHBOUND REST AREA	
Photo Location	The central facility area of the Rest Area (refer to ***Figure 63 -left***)
Viewing Distance	1.6km to the Project (Operations) from the rest area and the photo location
Duration of View and Frequency of View	Duration: Static. Frequency: Moderate.
Visual Use Area	Rest Area on "M" category road through rural area (refer to ***Figure 63 –right*** and ***Figure 64***).
Visual Sensitivity	**MODERATE** - Sensitivity of users is moderate based on the use of a "M" category road through a rural area - for views between 1km and 2km.
Visual Modification	**NOT VISIBLE** – From this viewpoint, the Project will be fully screened by vegetation to east of the rest area as well as to the north and south of the freeway, and along Winton-Glenrowan Road (refer to ***Figure 65***).
Visual Impact	**NOT VISIBLE** – The Project will not be visible from this viewpoint. As a result, there is no visual impact.
Proposed Amelioration	**NONE REQUIRED** – Although Amelioration is proposed for the perimeter of the Project, it is not required for this viewpoint.
Residual Impact	**NO IMPACT** – As there is no visual impact, amelioration will not have any influence on the level of residual impact.

Figure 63 – Location of residence (VP7) and photo in relation to Project (left aerial view) and immediate landscape setting (right aerial view) (Source: Google Earth).

Figure 64 – VP7 – Character of the setting.

Figure 65 – VP7 – View east northeast to the Project area.

VIEWPOINT 8 & 8A – WINTON-GLENROWAN ROAD	
Photo Location	Winton-Glenrowan Road southern verge to the northeast and northwest of the Project area (refer to ***Figure 66-left***)
Viewing Distance	VP8 - 40m to the Project (Operations). VP8A – 105m to the project (Substation).
Duration of View and Frequency of View	Duration: Dynamic – 100kmh. Frequency: Low to moderate.
Visual Use Area	Local road – Partially screened setting (refer to ***Figure 66– right*** and ***Figure 67***).
Visual Sensitivity	**LOW**- Sensitivity of users is low based on the rural local road use.
Visual Modification	**MODERATE** – From this viewpoint, the elements of the Project will be visible between trees lining the southern side of the road reserve. However, they would be viewed in the context of the solar farms and terminal station that line the road to the east and west of it (refer ***Figure 68***, ***Figure 69*** and ***Figure 70***).
Visual Impact	**LOW** – The low level of visual sensitivity, combined with a moderate visual modification level, will result in a low visual impact.
Proposed Amelioration	**Perimeter screening** – Amelioration is proposed for the northern perimeter, and the northern part of the western perimeter.
Residual Impact	**VERY LOW–** Proposed amelioration would significantly screen views of the Project (refer to ***Figure 71***).

Figure 66 – Location of local road viewpoints (VP8 and VP8A) and photo in relation to Project (left aerial view) and immediate landscape setting (right aerial view) (Source: Google Earth).

Figure 67 – VP8 - Landscape setting of the viewpoint looking northeast.

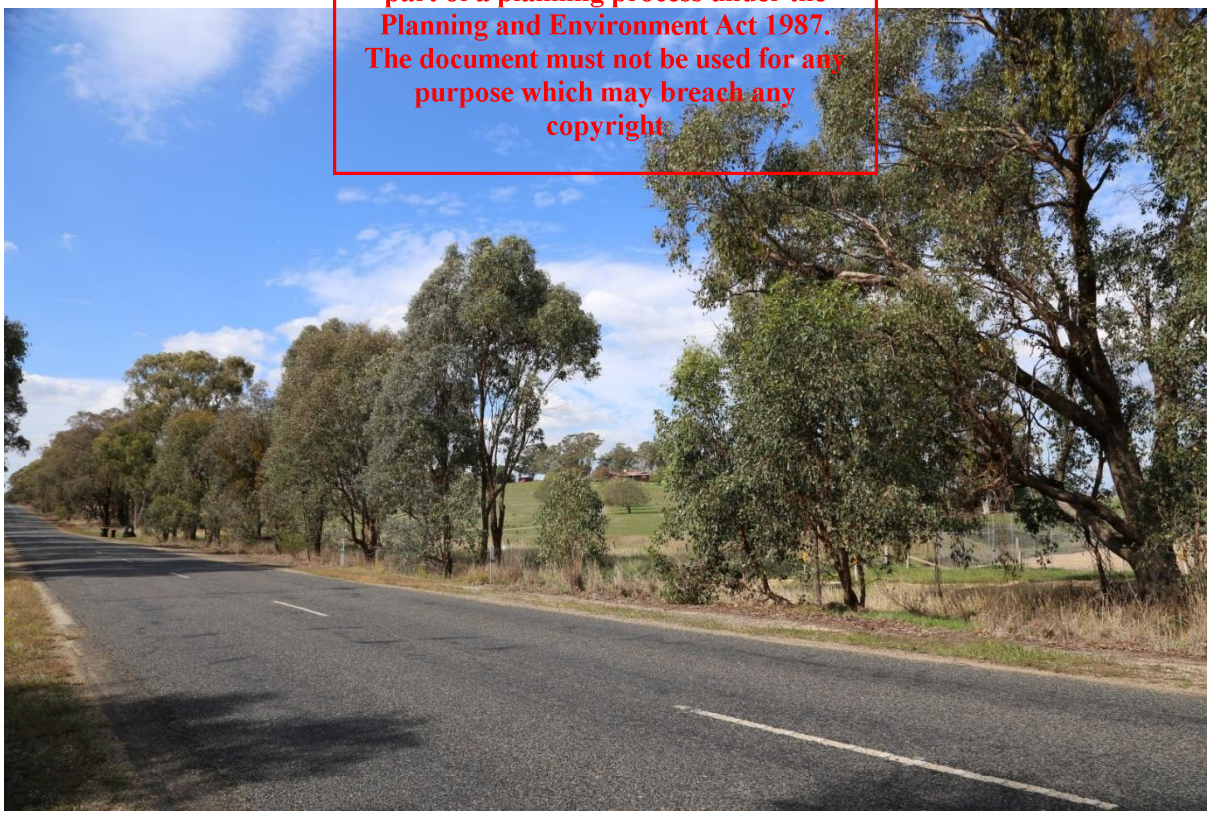

Figure 68 – VP8 – Existing view south towards the Project from Winton-Glenrowan Road.

Figure 69 - VP8A - Existing view southwest towards the Project area.

Figure 70 – VP8A – Photomontage - View southwest from Winton-Glenrowan Road to the Project – At completion of construction.

Figure 71 – VP8A – Photomontage - - View southwest from Winton-Glenrowan Road to the Project - 5 years post landscape amelioration.

5.4 Assessment of TZVI not visible high sensitivity viewpoints within 2km the Project

The TZVI analysis (refer to *Error! Reference source not found.*) for the tallest components of the Project indicates that the high sensitivity residential viewpoints shown in ***Table 8*** will not be impacted by the Project as a result of blocking effects of intervening topography.

Viewpoint (VP)#	Distance from Project area	Sensitivity	Veg Screening Typology	TZVI Visibility	Modification level	Initial Impact	Residual Impact
VP9 – 36 Eleven Mile Creek Rd	1.2km	H	Heavily	Not Visible	Not Visible	No Impact	No Impact
VP10 – 54 Eleven Mile Creek Rd	1.4km	H	Heavily	Not Visible	Not Visible	No Impact	No Impact
P11 – 123 Eleven Mile Creek Rd	1.7km	H	Partially	Not Visible	Not Visible	No Impact	No Impact
VP12 – Glenwest Lane	725m	H	Heavily	Not Visible	Not Visible	No Impact	No Impact
VP13 – Cnr Gould Rd and Lee Rd	1.6km	H	Heavily	Not Visible	Not Visible	No Impact	No Impact
VP14 – 21 Bowers Rd	685m	H	Partially	Not Visible	Not Visible	No Impact	No Impact
VP15 – Lee Rd	2.05km	H	Partially	Not Visible	Not Visible	No Impact	No Impact

Table 8 – TZVI not visible high sensitivity residential viewpoints within 2km of the Project.

5.5 Underground connecting powerline/grid connection

An underground powerline is proposed to connect the Project to the main grid at the Glenrowan Terminal Station. The powerline route will extend from the substation at the Project, approximately 550m in an easterly direction the terminal station (refer to ***Figure 72***).

The powerline will be located through open pasture. Views of the construction process and initial ground remediation works may be possible from the Hume Freeway and Winton-Glenrowan Road; however, the works will occur over a very short period of time and would be ameliorated quickly once the surface grass cover establishes.

Figure 72 - Location of connecting underground powerline (Source: Google Earth Pro).

5.6 Lighting impacts

The applicable environmental lighting zone for the Project area based on AS-NZS-4282-2023 is Category A2, which is a low district lighting area, which applies to rural residential areas and areas with secondary and local roads. However, a number of the existing commercial/industrial uses have attributes of higher intensity lighting, with the environmental lighting zone of the existing terminal station being Category A3, medium district lighting area.

It is likely that the batteries, switch room and substation will require security lighting. However, typically this will be shielded and directional. As a result, hot spots and light spill are likely to be minimised.

Within the Category A2 area the Project will result in a localised area of increased light intensity, but this will not result in adverse impacts to surrounding residential viewpoints.

The existing vegetation within the road reserves further reduces the visibility of already low levels of lighting.

5.7 Cumulative impact

The Project is located in an indent within an expanse of the existing solar farms and the adjacent terminal station.

Best practice siting of infrastructure recommends the concentration and collocation of elements where possible, to reduce spreading visual (and other) impacts into untouched areas.

A consideration for this Project is whether collocation is a positive outcome, or does the introduction of the Project result in a cumulative impact?

The location of the Project, as well as its height, which is very similar to that of the solar panels, provides a high degree of fit with the current modified setting.

Its frontage to the southern side of the Hume Freeway and Winton-Glenrowan Road is approximately 250m, or 4.6%, of the approximately 5.4km of other energy infrastructure projects.

6 AMELIORATION STRATEGIES

Actions exist to potentially ameliorate the landscape and visual impacts of the Project. These are outlined in the following sections.

6.1 On-Site Actions

On-site actions relate to initiatives which can be undertaken within the boundaries of the Project area.

6.1.1 Project layout

Arranging the components of the Project so that they respond to sensitive, visually exposed interfaces, is a proactive measure to reduce visual impacts from the outset and lessen the reliance on amelioration measures.

The Project components have been located on flatter, lower lying land to reduce their visibility from surrounding sensitive locations, as well to reduce the amount of cut and fill required that may create areas of visible ground plane disturbance.

The siting has also made effective use of existing vegetation along Winton-Glenrowan Road to ensure that initial, pre-amelioration impacts are reduced.

6.1.2 Perimeter screening

6.1.2.1 Vegetation

The most effective way to ameliorate views from higher sensitivity viewpoints is to establish screen planting around the perimeter of the Project where appropriate existing vegetation is lacking. The proposed 5m wide screen planting zone will comprise perimeters of varying densities, utilising a mixture of:

- shrubs to 2m in height;
- tall shrubs to 4m in height; and
- trees ranging in height from 6m-20m in height, particularly in the vicinity of the substation.

The Project primarily has exposed boundaries to the north, as well as the northern part of the western boundary, which should be planted (refer to Figure 73).

The low-profile form of the BESS component of the Project will ensure that planting will be able to provide screening within a relatively short period of time. Being a taller element, it will take longer for planting to ameliorate the impacts of the substation.

6.1.3 Material selection

While the Project is a relatively small insertion within a broader area of solar panels, which have a mostly recessive dark grey colour, the BESS units and buildings can appear as an aggregated visual mass. Therefore, where possible, they should be ameliorated through the use of a non-reflective finish of a natural or neutral colour, as found in the surrounding setting (refer to ***Figure 74***). White should not be used as it contrasts strongly with the landscape setting (refer to ***Figure 75***).

The more slender and articulated form of the components of the substation do not require amelioration through the use of non-standard colours, as the standard “grey” finish is visually recessive against sky backdrops and is readily integrated with existing tall and sparse planting (refer to ***Figure 76***).

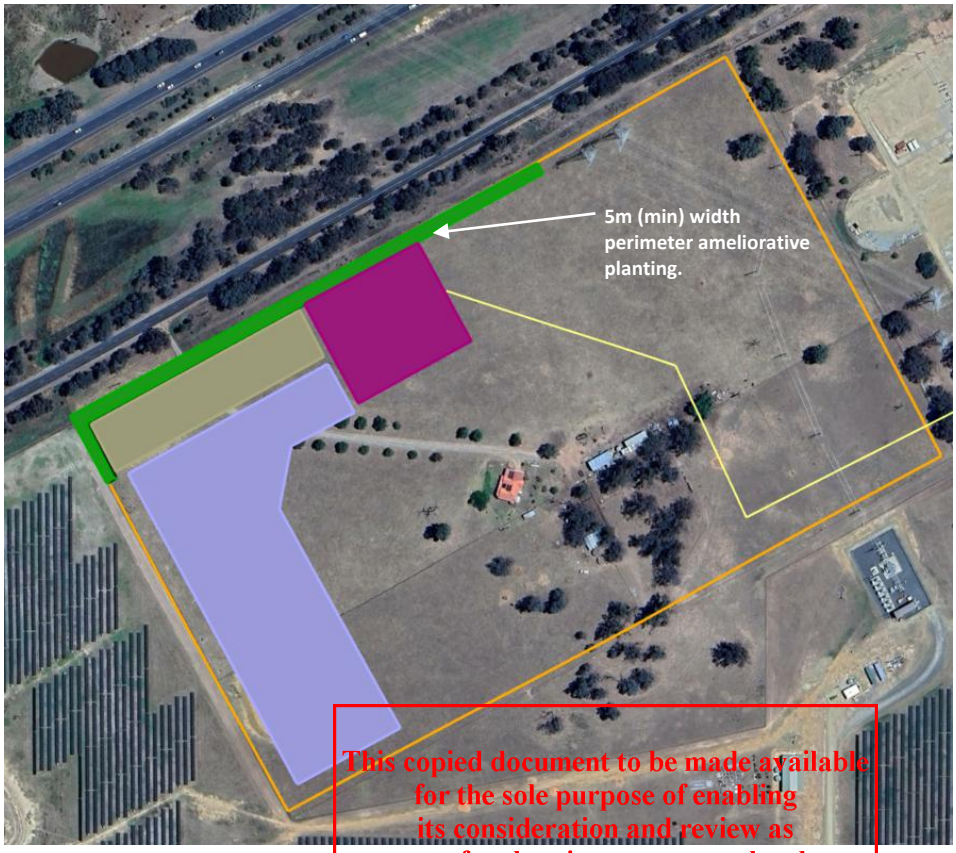

Figure 73 – Proposed extent of perimeter ameliorative planting.

Figure 74 – HV switchroom at Glenrowan West Solar Farm clad in a recessive natural colour.

Figure 75 – High contrasting colours, such as at the storage and maintenance area at Glenrowan West Solar Farm, should be avoided where possible.

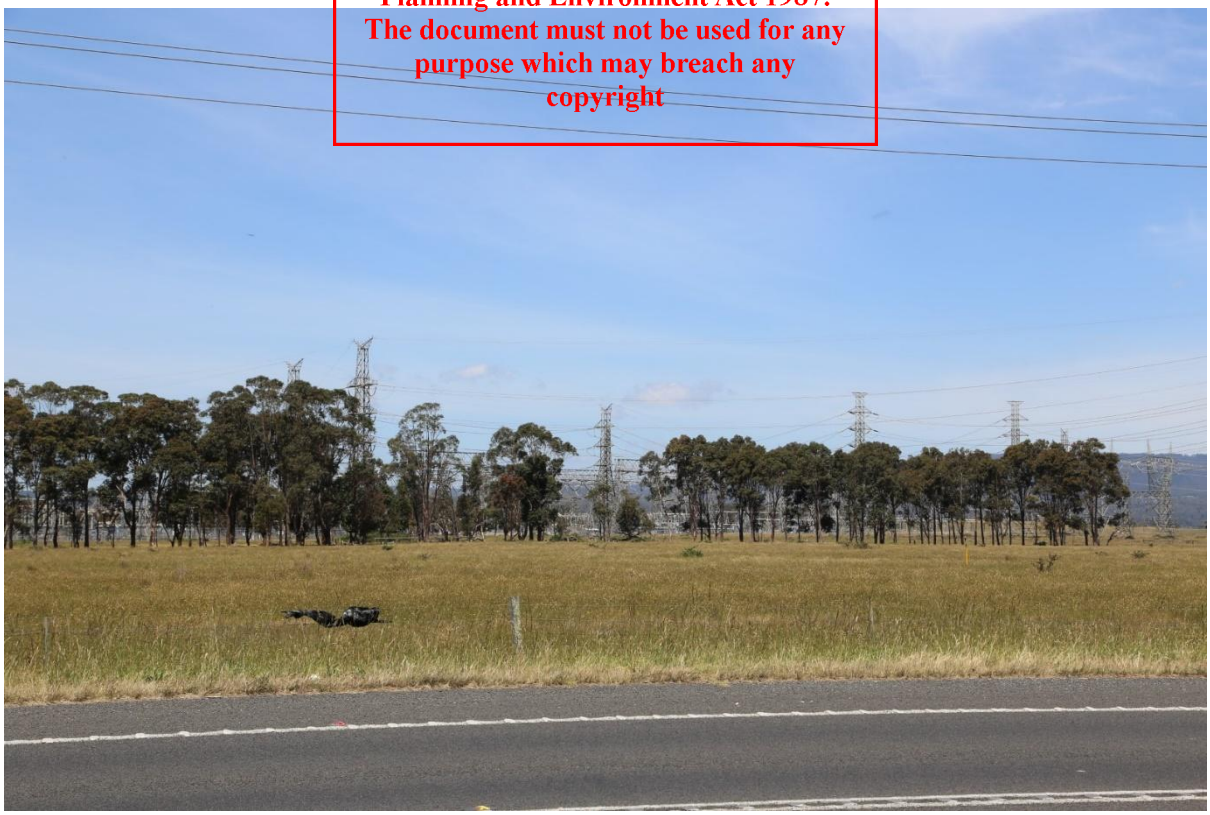

Figure 76 - Example of canopy vegetation providing visual integration of substation infrastructure.

6.2 Off-Site Actions

These actions relate to initiatives which can be undertaken outside of the Project area and would require the consent of relevant landowners, utilities or authorities. However, given the relatively low levels of impact, offsite amelioration is not required.

7 CONCLUSION

7.1 Landscape character impacts

The existing agricultural and energy landscape character of the Project area and surrounding areas is of relatively low scenic quality. It currently contains a large number of electrical infrastructure elements such as the broad scale solar arrays, the adjacent terminal station and numerous transmission lines. The development of the Project as effectively a small insert into the existing solar arrays, would not constitute a large change to the developing character and its proposed "co-location" near existing infrastructure is in accordance with best practice.

The landscape of the Project setting has a generally high landscape absorptive capacity, with the landscape surrounding the Project area being comprised of flat to slightly undulating topography and vegetation that is scattered and occasionally arranged in dense bands. Within this landscape, overlooking is generally not possible from most sensitive viewpoints, and even relatively low vegetation (up to eye-height) is effective at screening views.

7.2 Visual impacts

7.2.1 Visual prominence

In areas of flat topography, the vertical field of view of a BESS unit with a height of 3m will be less than 2.5 degrees, or of moderate visual prominence in viewing distances beyond 70m, less than 0.5 degrees, or of low visual prominence in distances beyond approximately 350m, and less than 0.25 degrees, or of very low visual prominence in distances beyond 700m.

The vertical field of view of the typical components of the switching station, with an average height of 8 to 10m, will be less than 2.5 degrees, or of moderate visual prominence in distances beyond 230m, will be less than 0.5 degrees, or of low visual prominence in distances beyond 1.1km, and less than 0.25 degrees, or of very low visual prominence in distances beyond 2.2km

The horizontal field of view is not considered relevant given the relatively small footprint of the Project, and the distance from sensitive viewpoints, resulting in an angle of less than 30 degrees, or no greater than a moderate level of visual prominence.

7.2.2 Consideration of visual fit within the setting

Given the presence of the existing broad scale energy infrastructure, the relatively small footprint of the Project provides it with a significant degree of visual fit within the landscape setting.

7.2.3 Initial visual impact

The viewpoints assessed in detail are representative of the likely views and levels of impacts to be experienced by surrounding sensitive viewpoints.

There are no locations where the Project will result in a high initial visual impact. The highest assessed initial impacts are:

- Viewpoint 1 – South bound lanes of the Hume Freeway with a low moderate initial visual impact; and
- Viewpoints 8 and 8A – Winton-Glenrowan Road with a moderate initial visual impact.

Apart from the above, overall, the Project is assessed as having a very low level of visual impact or not being visible at all, due to it being well screened by existing vegetation.

7.2.4 Recommended amelioration

The BESS units and other buildings that result in an aggregated visual mass, should, where possible, be ameliorated through the use of an appropriate choice of recessive surface colour.

The more slender and articulated form of the components of the substation do not require amelioration through the use of non-standard colours.

Although the Project has limited initial visual impacts, the interface with Winton-Glenrowan Road should be planted with a minimum 5m wide strip of dense medium to tall shrubs and small to medium trees.

7.2.5 Residual impact

The residual visual impact for all viewpoints will remain as per the initial impacts.

7.2.6 Cumulative impact

Given the Project is located in an indent within an expanse of the existing solar farms and the adjacent terminal station, the cumulative impact is considered very low.

Its frontage to the southern side of the Hume Freeway and Winton-Glenrowan Road is approximately 250m, or 4.6%, of the approximately 5.4km of other energy infrastructure projects.

7.2.1 Impact of connecting underground powerline

Any impacts associated with the underground powerline will be limited to a short period of time during and post construction.

7.3 Lighting impacts

Within the Category A2 area the Project will result in a localised area of increased light intensity, but this will not result in adverse impacts to surrounding residential viewpoints.

PETER HAACK
CONSULTING

Peter Haack Consulting

2/10 Waltham Place

Richmond

Victoria 3121

www.peterhaack.com.au

ABN 15 235 313 089