ARUP

Green Gold Energy Pty. Ltd

6.3 MW Solar Farm & 11 MW BESS
1000 Burkes Creek Road, The Rock

Statement of Environmental Effects

Reference: 30534200

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Job number

Arup Pty Limited | ABN 18 000 966 165

Arup Pty Limited
Level 5
151 Clarence Street
Sydney
NSW, 2000
Australia
arup.com

ARUP

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			Prepared by	**Checked by**	**Approved by**
		Name	Charlie Sammoun	Natalie Swannack	Natalie Swannack
		Signature			
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		Name	Charlie Sammoun	Natalie Swannack	Natalie Swannack
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1. Introduction

1.1 Overview

Arup has prepared this report and Statement of Environmental Effects (SEE) on behalf of Green Gold Energy Pty. Ltd. (GGE) to support a Development Application (DA) submitted to Wagga Wagga City Council (WWCC). The proposal is for a renewable energy project at 1000 Burkes Creek Road, The Rock 2655 (Lot 107, DP754563). The project encompasses a 6.3 MW (megawatt) electricity generating facility, including solar arrays, an 11 MWh battery energy storage system, and associated infrastructure. Occupying approximately 15 hectares in the north-west corner of the property, the facility aims to supply 6.3 MW of electricity to the local distribution network while preserving the remainder of the land for ongoing agricultural use.

The site was strategically chosen for its suitable attributes, aligning with the Riverina Murray Regional Plan 2041 and the Wagga Wagga Local Strategic Planning Statement 2040. It offers an ideal connection opportunity to nearby transmission lines and supports the region's transition to a low-carbon economy.

This SEE and the DA comply with Part 4 Division 4.3 of the Environmental Planning and Assessment Act 1979 (EP&A Act), the Environmental Planning and Assessment Regulation 2000 (EP&A Regs), and other relevant Planning Instruments and applicable planning controls. It addresses the considerations listed under Section 4.15(1) of the EP&A Act and assesses the proposed development against relevant Environmental Planning Instruments (EPIs).

This SEE describes the site and its surroundings, details the proposed development, assesses potential environmental impacts, and outlines mitigation strategies to protect the environment. Each section provides a thorough assessment and response to the relevant planning and environmental considerations, enabling a complete evaluation of the project's feasibility and impact.

1.2 The Proponent

GGE is an Australian company with offices in Adelaide and Melbourne, that takes a collaborative approach to renewable energy. GGE seek to partner with landowners to identify land that balances the farmer’s needs with the requirements for GGE’s solar facilities. GGE’s core business is centred around rural land that is typically no larger than 15 hectares that can support commercially viable Solar Energy Facilities with the necessary investment and infrastructure.

These solar energy projects are designed to export generated energy into the grid, enabling it to be sold on the National Electricity Market using the latest state-of-the-art PV technologies to ensure the most efficient, reliable power generation. Green Gold projects deliver:

- Long-term, secure supplementary income to landowners
- Access to the Australian renewable energy market to investors and shareholders
- Sustainable returns for investors

These projects also bring significant benefits to the regional communities they are in, by creating jobs, providing local economies with the assets to improve energy infrastructure, and creating stronger, more sustainable communities. The GGE executive team has commissioned a series of solar energy facilities in South Australia and is currently undertaking an extensive roll out of new facilities across northern Victoria, Queensland and regional New South Wales.

1.3 Project Justification

The development of renewable solar energy is making significant progress in New South Wales (NSW) and across Australia. The ongoing expansion of solar energy in regional NSW offers substantial benefits to local economies, creating new jobs and attracting further investment

This growth is being managed carefully to reduce environmental and social impacts through several key measures:

- Biodiversity is protected by focusing development on cleared and modified rural land, while preserving existing vegetation on-site.
- Soil and water impacts are minimised by using pile-driven panel mounts, which avoid extensive excavation and disturbance.
- Agricultural productivity is maintained by allowing the land to continue being used for farming during and after the solar facility's operation.
- Visual impacts on neighbouring areas are reduced by designing the facility with a smaller footprint and setting it back from surrounding roads.

These efforts ensure that solar energy development in NSW supports both the environment and the local community.

1.4 Pre-lodgement Meeting

A pre-lodgement meeting was held with WWCC staff on 27 September 2024. The proposal was presented to WWCC staff. Council acknowledged the project's status as Regionally Significant Development and provided guidance on various aspects of the development application. Key points discussed include:

- Bushfire Impact: A Bushfire Assessment will be required as the site is on bushfire prone land.
- BESS Hazard: A Risk Screening Memo should be prepared, though a full Preliminary Hazard Assessment is likely unnecessary due to the capacity being under 30MW.
- Biodiversity: An assessment memo by an Ecologist should be included in the SEE, noting no vegetation clearing is proposed.
- Cultural & Historic Heritage: Commentary in the SEE should address the lack of known cultural heritage sites and distance to historic heritage items.
- Noise, Vibration, Air Quality & Visual Impact: These can be addressed through commentary in the SEE, with no standalone assessments required due to distance from receivers and existing screening.
- Traffic: An assessment should be prepared, considering impacts on Olympic Highway and local roads, including dust impacts during construction.
- Glint and Glare: Not expected to be an issue but should be addressed in the SEE.
- Development Application requirements: Detailed plans, elevations, cross sections, and fencing details should be included.
- Planning Panel timeframe: A minimum of 6 months should be expected for the approval process.

Council noted that there were no significant red flags identified for the proposal at this stage. Minutes from this meeting are attached as Appendix G.

2. Site Analysis

2.1 Site location and context

The subject land to which this application relates is described as Lot 107 in DP754563 and addressed as 1000 Burkes Creek Road, The Rock. It is located approximately six (6) kilometres northeast of the township of The Rock. The location of the site is shown in **Figure 2-1** below.

Figure 2-1: Site Location

2.2 Site Description

The proposal is to be built on a portion of the existing farming property addressed as 1000 Burkes Creek Road, The Rock. GGE has agreed to terms with the current farmer to lease the north-western portion of the property to develop it for a solar farm & BESS – for a period of approximately thirty (30) years. The remainder of the lot will continue to be used in accordance with the existing rural uses. The proposed facility will occupy approximately 15-ha of the 200-ha property. The remaining land outside the facility's fence will remain "as is" and will be managed seasonally in accordance with the ongoing agricultural use of the farm. The subject land is generally bounded by farming land.

Access to the proposal site is provided via Burkes Creek Road, an all-weather gravel road that would be capable of supporting vehicle traffic during construction of the proposal. Arterial road access to this road is from the Olympic Highway to the west. The subject site, including the broader property to the east is largely open agricultural land, featuring a vast expanse of green crops, with scattered trees and small patches of native vegetation (refer to **Photograph 1 & Photograph 2**).

Photograph 1: Proposal area landscape (facing North Easterly direction)

Photograph 2: Proposal area landscape (facing Southern direction)

2.3 Surrounding Development

The proposal site is surrounded by other farming properties with similar characteristics of minimal vegetation and agricultural infrastructure (refer to **Figure 5-1**). The nearest visible dwellings consist of three residential properties within a 1km radius of the proposal site. Two of these are located to the north, accessible via Burkes Creek Road and Olympic Highway, while the third is situated to the south, also off Burkes Creek Road.

These dwellings are screened by vegetation buffers. To the north and east of the subject site, the land is predominantly used for broad-acre agriculture, with a mix of cropping and possible livestock grazing evident from the field patterns.

Similarly, to the south and west, the land is utilised for broad-acre farming purposes, with large open fields dominating the landscape. Burkes Creek Road runs along the western boundary of the site, providing access and separating it from adjacent agricultural lands. To the south, Byrnes Road forms another boundary, beyond which similar agricultural activities continue. There are no immediately visible large-scale industrial or commercial developments in the vicinity. The overall character of the surrounding area is distinctly rural, with a focus on agricultural production and minimal residential development, typical of farming zones in the region.

3. Description of Proposal

3.1 Overview

The proposal aims to develop a 15-hectare portion of the subject land for a solar renewable energy facility with a capacity of up to 6.3 Megawatts (MW). This facility, accessible from Burkes Creek Road, will be situated within a generally rectangular area. The development will comprise 10,692 solar photovoltaic panels mounted on single-axis trackers, along with a 4-module Battery Energy Storage System (BESS) with 11MWh capacity. Infrastructure will include cabling from the solar arrays and BESS to panel inverters, a HV Switchboard for connection to the local electricity network, internal access tracks, access gates, parking and laydown areas, and perimeter security fencing (refer to **Figure 3-1**).

The project timeline envisions a construction period of 6 to 12 months, followed by an operational phase of up to 30 years. After this period, the facility will either continue operations or undergo decommissioning with removal of all components. The facility's design prioritises optimisation to produce a desirable quantity of energy efficiently and cost-effectively, maximising power generation within the available land. Subsequent sections will provide detailed information on key project components, construction and operational stages, specifics of the solar PV system, and additional development components.

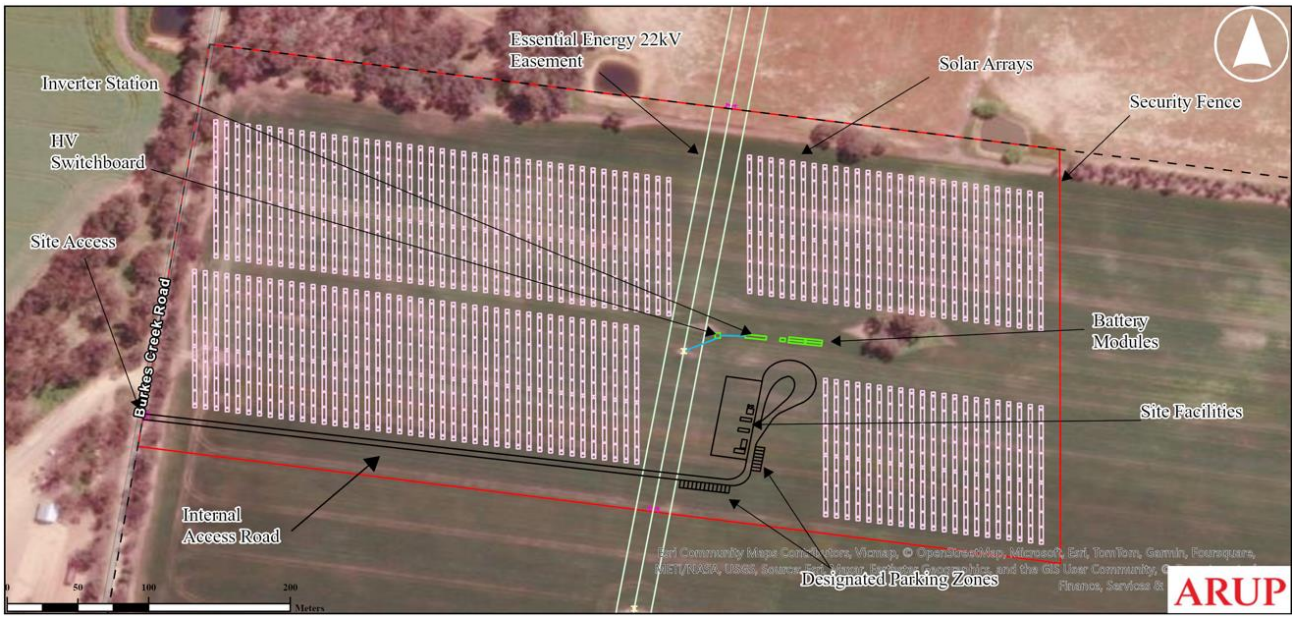


Figure 3-1: Site Layout

3.2 Project Details

This project involves the construction of a solar PV export and battery energy storage system (BESS) facility at 1000 Burkes Creek Road, The Rock, NSW 2655. The project will utilise approximately 40 acres (15 hectares) of land within the fenced area, the specific scope for this project includes the following:

- The solar PV array installation will consist of 10,692 modules, each with a capacity of 610W and model LRS-72HGD-610 (or similar), resulting in a total DC capacity of 6.30 MW.
- For power conversion, the project will utilise one SG4950-MV-MV (or similar) inverter. The battery energy storage system will comprise 4 battery units with a total capacity of 11 MWh, using the ST2752UX battery model and an LC-1000 local controller.
- Site infrastructure development involves constructing approximately 600m of internal roads, installing 1612m of security fencing around the perimeter, creating a site entry point from Burkes Creek Road, establishing a site amenity area, and preparing a 1050 m² lay down area. A parking area measuring 2.4m x 3.5m will also be constructed.

- Electrical infrastructure will include a PV switchboard, an inverter station, underground cabling for customer-owned connections, and connection to existing Essential Energy (EE) 22kV distribution lines.

3.3 Construction Phase

The proposal, once constructed, will operate with minimal activity and staffing, except for the movement of tracking arrays. The construction phase, therefore, represents the most significant period of impact in the proposal's lifecycle. Although this phase is brief, proper management can effectively control its effects to acceptable levels. Construction is planned to commence in 2026 and is expected to last up to 12 months, progressing through three key stages:

- **Stage 1 (Civil):** focuses on civil works, including land preparation, road construction, drainage installation, and site establishment.
- **Stage 2 (Mechanical):** involves mechanical works such as foundation piling and installation of solar arrays, trackers and battery modules.
- **Stage 3 (Electrical):** encompasses electrical works, from solar cabling and BESS to grid connection and system commissioning.

Throughout the construction period, components will be delivered using semi-trailer trucks carrying containerised materials. The solar array system's design minimises earthworks, thereby reducing potential environmental impacts. Solar and battery components, including support systems, trackers, panels, modules, and cabling, will arrive in pre-packed containers and be transferred directly from delivery trucks to the designated lay-down area.

To minimise disruption to the local community, construction activities will be conducted during standard hours:

- 7 am to 5 pm Monday through Friday, and
- 8 am to 1 pm on Saturdays.
- No construction activities will take place on Sundays or public holidays.

Once operational, the facility will transition to a low-impact, largely autonomous operation, contributing clean energy to the local grid with minimal ongoing disturbance to the surrounding area.

GGE has developed a preliminary Construction Environment Management Plan **(Appendix B),** which serves as a foundation for site-specific protocols. This plan will be further refined and tailored to the project's unique requirements by the contractor selected for the proposal and detail such thing as erosion and sediment control measures during construction, as well as stormwater management strategies for the operational phase

3.3.1 Site Access

Primary access to the proposal be via Burkes Creek Road, located approximately 1.5km southeast of the Olympic Highway. Within the site, approximately 600m of internal unsealed road about 6m wide, will be constructed. This internal road extends from the Burkes Creek Road entry to the solar arrays and BESS. It will support heavy vehicle traffic and allow all vehicles to enter and exit in a forward direction. This internal road will serve dual purposes, facilitating both construction activities and ongoing maintenance operations.

3.3.2 On-site Parking

To minimise conflicts between the private vehicles of workers and any plant or machinery moving within the site, off-street parking for the workforce would be consolidated in one area. Parking will be provided on-site to accommodate 20 car parking spaces, which would be used by light and heavy vehicles during the construction and operational phases.

3.4 Operation Phase

During the operation phase, the facility will be un-manned, other than intermittent periodical maintenance. The site will be remotely monitored in real time and local contractors would be rapidly deployed to deal with any fault or other matter, which provides the added benefit of local jobs for the local community. Considering that the proposal will be un-manned, with limited moving componentry (other than the tracking arrays), it is considered that it will have a very minimal impact on the landscape or surrounding road network.

The proposed solar facility is expected to operate for up to 30 years once constructed and energised. Its primary function is to generate power during daylight hours, with all infrastructure remaining operational at all times.

3.4.1 Maintenance

Regular maintenance of the proposal will be undertaken to ensure optimal performance. Quarterly maintenance activities will include:

- Vegetation control
- Panel cleaning (up to twice yearly)
- Equipment inspection and replacement
- General servicing

Maintenance crews will access the site via the internal road, entering through the designated site entry point located at Burkes Creek Road. Water for panel cleaning will be brought in by trucks. Off-site crews and specialised contractors will be engaged for repairs as needed.

3.4.2 Security

The proposal site will be secured by a combination of existing and new fencing. Existing perimeter rural post and wire fencing will be retained and repaired as necessary. Inside the proposal area, a new 2.4-meter-high security fencing will be installed. All access points will feature double gates with 6-meter-wide openings, maintaining consistent height with the fencing. CCTV will be installed to monitor the key infrastructure items such as the Battery Modules and Inverter.

3.4.3 Storage

A purpose-built dangerous goods cabinet will be installed on-site. This secure cabinet will store:

- Petrol and diesel fuels
- Maintenance chemicals
- Spill kits

The cabinet will be located for easy access while maintaining safety. It will comply with relevant safety standards and undergo regular inspections.

3.5 Solar Infrastructure

3.5.1 Photovoltaic Panel Arrays

The proposed solar facility will install 10,692 photovoltaic modules (LRS-72HGD-610M) with a capacity of 610W each. These panels will be arranged in arrays, with 27 modules per string and a total of 396 strings across the 40-acre development area. The site layout plan **(Figure 3-1)** indicates the alignment of the proposed arrays.

The solar panels are designed to absorb 80-90% of sunlight, converting it into electricity while minimising reflection. They will be mounted on a single-axis ground tracker system to maximise solar exposure, tilting east to west throughout the day.

Each panel measures approximately 2.3 meters x 1.2 meter and will be arranged in a 'single portrait' orientation on the steel tracking structure. The structure will be secured by pile-driven posts at the end of each string, spaced from approximately 6 meters apart.

The final height of the structure, including panels at full tilt and allowing for a ground clearance of at least 0.5 meters, will be approximately 2.8 meters from natural ground level. This height may be adjusted based on final clearance requirements. This configuration will result in a total DC capacity of 6.30 MW for the entire facility. A typical panel array is depicted in the figures below.

Figure 3-2: Example of a typical single axis tracker system with PV modules mounted in single panel portrait orientation (source: google)

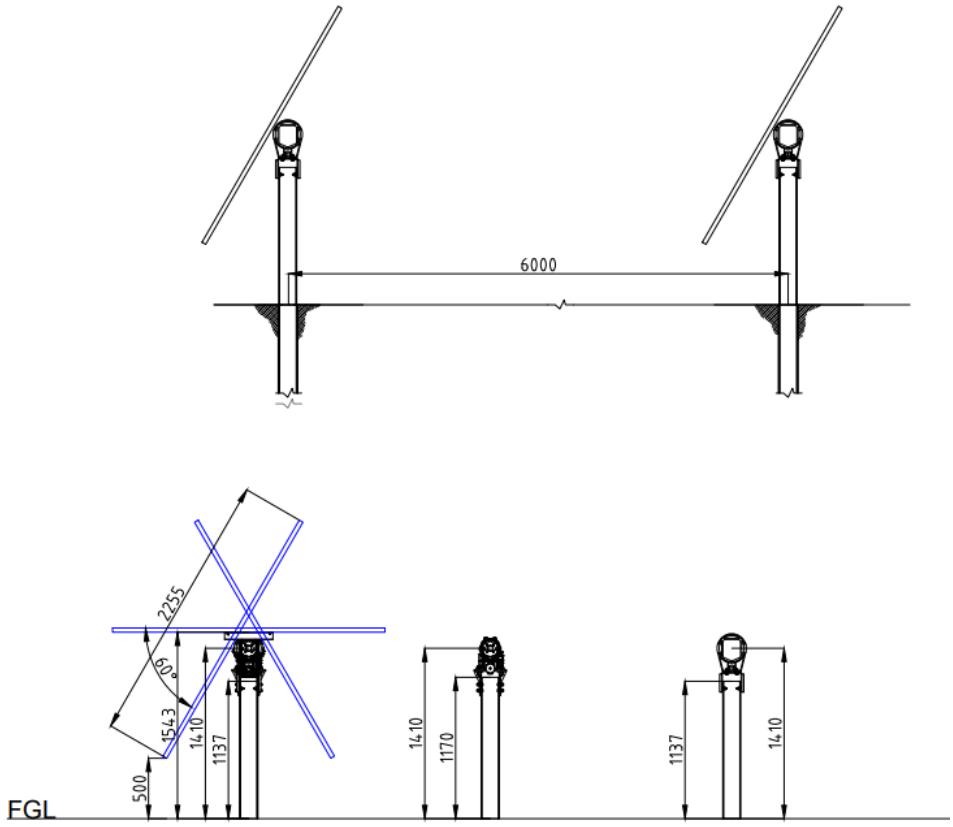
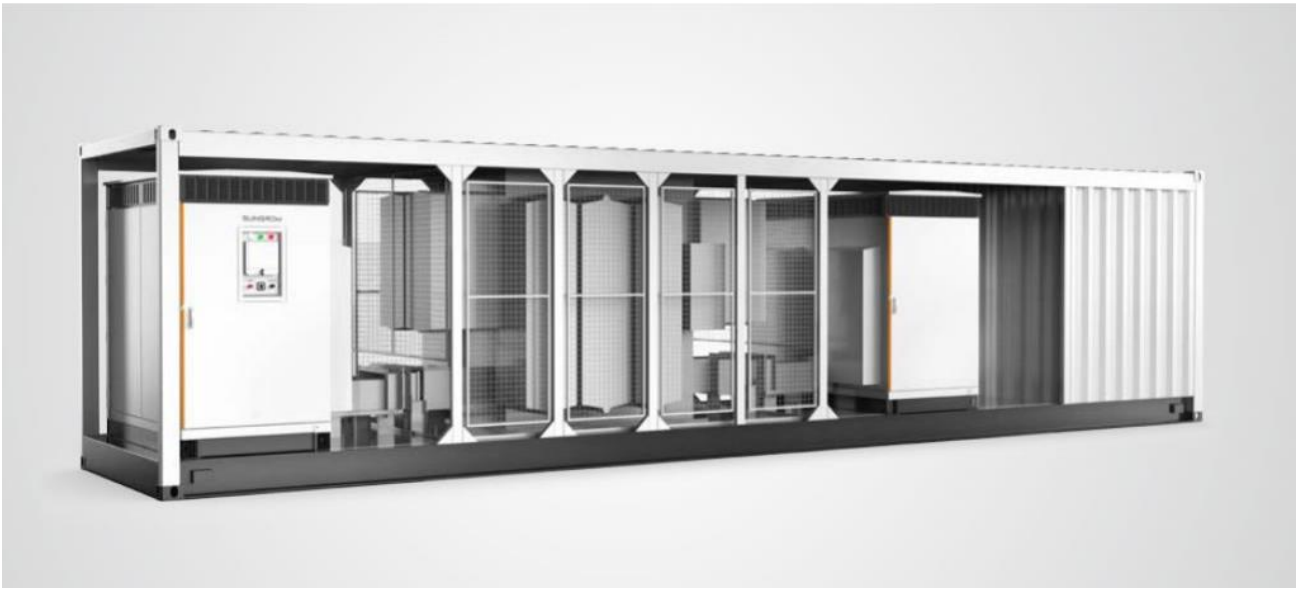


Figure 3-3: Typical design section of single axis tracker system with PV modules mounted in single panel portrait orientation

3.5.2 Power Station

The proposed development will provide 1 x Power Station Unit (SG4950HV-MV or similar) at the centre of the PV Panel array area. This will contain one inverter unit and a LV/MV transformer within a single 'container format' for placement on the site. The power station will measure approximately 12m x 3m x 2.5m and is proposed to comprise a muted natural colour to blend into the surrounding landscape.

The electricity generated by the proposed panel arrays are directed to inverters via cabling to be constructed throughout the site. The inverters are used to convert the low voltage DC power into low voltage AC power which can then be transformed to higher voltages. This allows for a step up of the voltage from the solar panels and conversion so that it can be connected to the grid. A typical power station of the proposed model is depicted in the figure below.



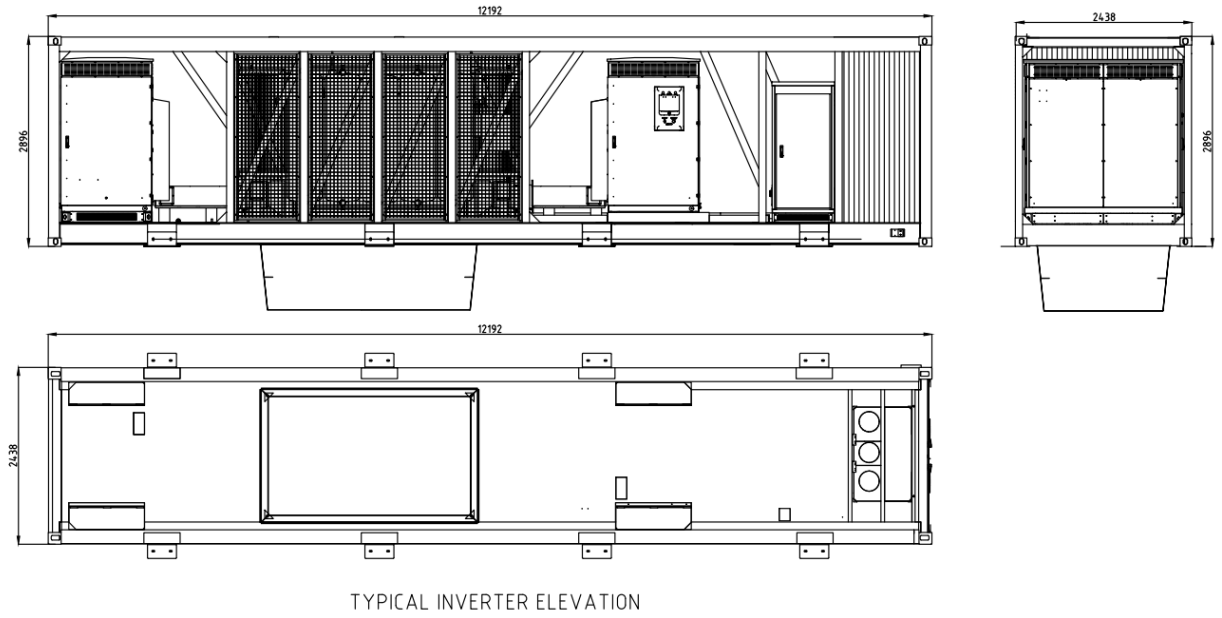


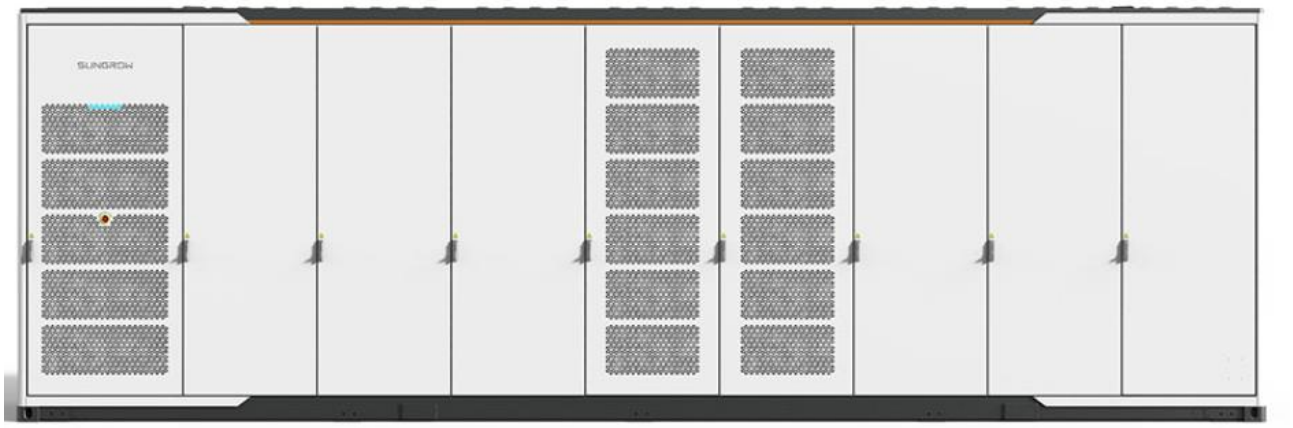
Figure 3-4: Typical Power Station Unit to be installed on site (SG4950HV-MV) (Source: Sungrow)

3.5.3 Battery Energy Storage System

The proposal will incorporate a Battery Energy Storage System (BESS) consisting of four (4) units adjacent to the power station. Key features include:

- Battery model: ST2752UX (or similar)
- Battery capacity (BOL): 2.752 MWh per unit
- Total system capacity: 11 MWh DC / 10kWh AC

Each BESS unit will be a prefabricated container with dimensions of 9.3m x 2.5m x 1.7m (LxWxH). The units will be delivered and placed on-site. The BESS will charge from the solar farm's power conversion unit via underground electrical cabling. During discharge, power flows back through the electrical connections to the power conversion unit. This BESS configuration will enable efficient energy storage and distribution, complementing the 6.30 MW capacity of the solar array. A typical BESS of the proposed model is depicted in the figure below.



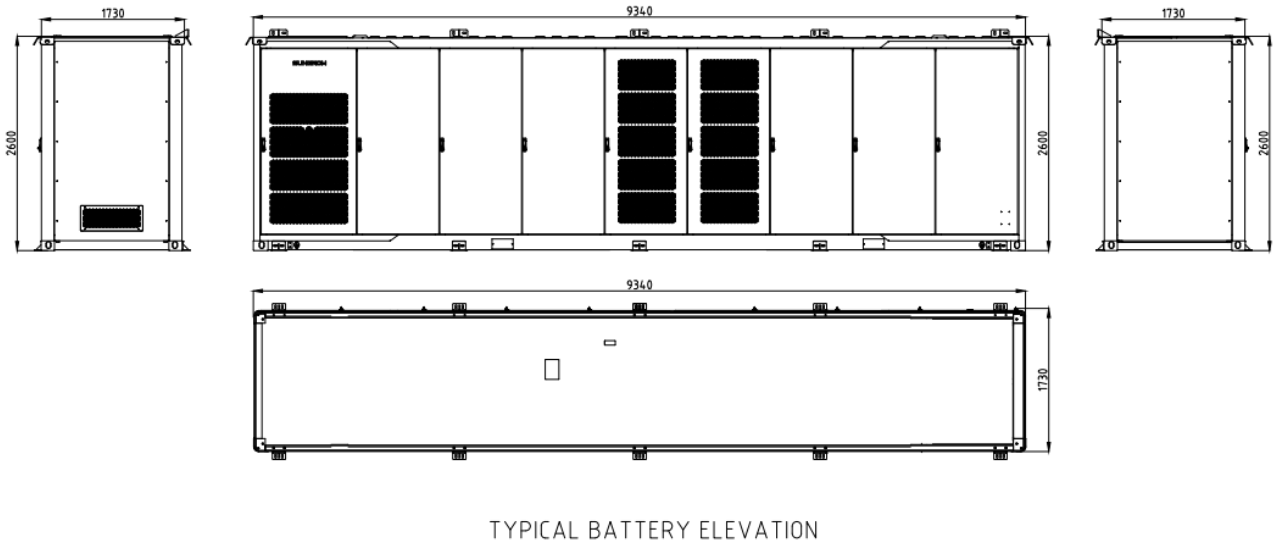


Figure 3-5: Typical BESS Unit (ST2752UX) to be installed within the facility (Source: Sungrow)

The proposal will comprise approximately a network of aboveground and underground cabling throughout the development. This will consist of DC cabling extending from the solar arrays to the inverters and AC cabling from the inverters to the HV Switchboard. Underground cabling will be installed between 0.5-1.0 metre below the surface and will be provided by trenching, installing cabling and conduit and backfilling. The disturbed area will be compacted to match the adjacent ground level.

Areas of aboveground cabling will be required at the solar panel arrays, with DC cabling being fed along the mounting structures to aboveground combiner boxes, before being fed to underground conduits.

3.6 Easements

The proposal incorporates an existing 20m wide EE easement within its design. This easement, which contains underground 22kV infrastructure, runs through the site and is crucial for the project's grid connection. In accordance with Section 2.48 of the State Environmental Planning Policy (Transport and Infrastructure) 2021, special considerations apply to development adjacent to or within electricity easements. The project design respects this easement, ensuring no permanent structures interfere with EE's access or maintenance requirements. As part of the development application process, formal notification by Council will be provided to EE, allowing them to assess potential safety risks and provide comments, particularly regarding any proposed works within or near the easement.

GGE has commenced engagement with EE and signed a Customer Service Agreement. Following this, GGE submitted a Preliminary Connection Enquiry (PCE) to EE, which has been received and processed. GGE has now initiated the Detailed Connection Enquiry (DCE) process with EE. This more comprehensive phase consists of three key components: the Connection Service Agreement (CSA), the Connection Investigation Report (CIR), and the Project Data Pack. GGE is currently awaiting the CIR from EE which will provide information for the next stages of the proposal's grid connection planning.

3.7 Stormwater and Drainage

To manage stormwater runoff, the solar facility development will include swale drainage along the internal access roads, particularly the main 6m wide road running through the site. Given the nature of the solar panel installation and the 600m of internal roads, stormwater generation is not expected to significantly increase compared to the current agricultural use. The development, including 10,692 solar modules and four BESS units, is designed to minimise impact on existing water flows.

Runoff from gravel access roads will be collected and conveyed via new swale drains, designed to discharge at pre-developed levels. This system will ensure no adverse effects on the surrounding area.

Detailed stormwater infrastructure design will be completed prior to the construction certificate issue, accounting for the specific layout of solar arrays, BESS units, and other site features. This will support efficient water management throughout the facility's 30-year operational lifespan.

3.8 Landscaping

Based on the visual impact assessment in Section 5.2, additional landscape buffering is not considered necessary as the proposal has minimal visibility from sensitive receivers. The site's existing vegetation already provides adequate visual screening of the development.

3.9 Decommissioning and Rehabilitation

The proposal is intended to remain in operation for a period of up to 30 years to contribute to the sustainable electricity power supply to the state of NSW. This period represents the useable life of a solar facility, after which the infrastructure and components would need to be upgraded to latest technologies for ongoing efficient operation.

If the facility ceases operations at this point, all infrastructure, panels, mounting frames including footings, inverters, cabling and other sub-surface materials would be disassembled and removed from the site by the proposal owner to enable the site to be re-cultivated for cropping or grazing purposes. All gravel surfacing of accessways would be removed unless required for a future use.

4. Planning Assessment

4.1 Applicable Environmental Planning Policies, Instruments and Controls

The proposed development requires development consent under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The proposed development has been assessed in accordance with the requirements of Section 4.15 of the EP&A Act and the Environmental Planning and Assessment Regulations 2021. The proposed development is consistent with both the Wagga Wagga Local Environmental Plan 2010 and Wagga Wagga Development Control Plan 2010.

Compliance with the following applicable legislation and policies is discussed below:

- Environmental Planning and Assessment Act 1979
- Environmental Planning and Assessment Regulation 2000
- State Environmental Planning Policy (Hazard and Resilience) 2021
- State Environmental Planning Policy (Transport and Infrastructure) 2021
- State Environmental Planning Policy (Primary Production) 2021
- Wagga Wagga Local Environmental Plan 2010
- Wagga Wagga Development Control Plan 2010

4.2 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) is the principal piece of legislation covering assessment and determination of development proposals in NSW. It aims to encourage the proper management, development and conservation of resources, environmental protection and ecologically sustainable development. The development assessment and approval system in NSW is set out in Parts 4 and 5 of the EP&A Act. Part 4 of the EP&A Act provides for control of 'local development' that requires development consent from the local Council. For the proposal to proceed and in accordance with Part 4 of the EP&A Act, a DA accompanied by a SEE must be prepared and submitted to Wagga Wagga City Council (WWCC).

The objectives of the EP&A Act are intended to guide land planning and management. Section 4.15 of the Act lists matters for consideration when assessing and determining a development application.

4.2.1 Consent Authority

Division 4.2 of the EP&A Act establishes the applicable consent authority. The proposal meets the thresholds for Regionally Significant Development (refer below to section 4.3). As such the development application is to be determined by the Southern Region Planning Panel who is the relevant consent authority. WWCC will however undertake the relevant assessment and administration functions.

4.2.2 Designated Development

Pursuant to Section 4.10 of the EP&A Act the development is not identified as "designated development" as the proposal does not exceed 30 megawatts of electrical power for the purposes of 'electricity generating works' clause 24(1)(c) of Schedule 3, Part 1 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regs).

4.2.3 Integrated Development

The application is not considered to be 'integrated development' for the purposes of Clause 4.46 of the EP&A Act 1979.

4.3 State Environmental Planning Policy (Planning Systems) 2021

Given its classification as "electricity generating works" with an assumed capital investment value exceeding $5 million (but less than $30 million), the project is deemed Regionally Significant Development under Schedule 6, Section 5(a) of SEPP (Planning Systems) 2021. As such, the Southern Regional Planning Panel would serve as the consent authority.

Schedule 6 – Regionally Significant Development

5 Private infrastructure and community facilities over $5 million

Development that has a capital investment value of more than $5 million for any of the following purposes—

- *(a) air transport facilities, **electricity generating works**, port facilities, rail infrastructure facilities, road infrastructure facilities, sewerage systems, telecommunications facilities, waste or resource management facilities, water supply systems, or wharf or boating facilities,*
- *(b) affordable housing, childcare centres, community facilities, correctional centres, educational establishments, group homes, health services facilities or places of public worship.*

Development that is state and regionally significant is identified in *State Environmental Planning Policy (Planning Systems) 2021*.

Private infrastructure, including electricity generating stations, that have a capital investment value of over $5 million are declared regionally significant. The proposed Solar Facility development has a CIV of about **$6.5 million and is therefore identified as a Regionally Significant Development.**

4.4 State Environmental Planning Policy (Transport and Infrastructure) 2021

4.4.1 Chapter 2 - Part 2.3 – Division 4 – Electricity generating works or solar energy systems

Clause 2.36 Development permitted with consent

The proposed solar facility at 1000 Burkes Creek Road, The Rock, NSW 2655, aligns with Part 2, Division 4, Section 2.36(9) of the State Environmental Planning Policy (Transport and Infrastructure) 2021 (“the TI SEPP”) which permits solar energy systems on any land with consent.

The 6.30 MW DC capacity solar facility is designed to be compatible with adjoining agricultural land uses, minimising potential impacts on the surrounding area. The primary consideration for solar energy facilities - visual impact and potential loss of agricultural utility - has been carefully addressed in the design process.

The facility's layout has been optimised to avoid impeding existing agriculture in the vicinity. As a low-impact use, it has been strategically sited to prevent adverse effects on rural infrastructure, particularly the existing rural road along the southern boundary and the rural arterial network to the west.

The project's design, incorporating 10,692 solar modules and four BESS units, demonstrates a balance between renewable energy generation and preservation of rural land utility. By utilising approximately 40 acres of the site, the development maintains the potential for continued agricultural use on the remaining land, supporting the policy's aim of sustainable rural development.

4.4.2 Chapter 2 - Part 2.3 - Division 5 – Subdivision 2 – Development likely to affect an electricity transmission or distribution network

2.48 Determination of development applications—other development

The proposal has been strategically sited in relation to existing EE infrastructure, aligning with Section 2.48 of the TI SEPP. The development involves ground penetration within 2m of underground electricity power lines, as well as works immediately adjacent to an easement for electricity purposes, triggering the application of this section. The site selection and design carefully consider the existing 22kV underground EE infrastructure. GGE will connect to the grid using this infrastructure, subject to finalising an agreement with EE.

In compliance with Section 2.48(2) of the TISEPP, the consent authority must provide written notice to EE, inviting comments on potential safety risks associated with the development's proximity to their underground assets. The authority is required to consider any response received within 21 days of notification before determining the application. This process ensures that safety considerations and infrastructure integration are thoroughly addressed in the development assessment.

As noted under **section 3.6**, GGE has initiated the grid connection process with EE, progressing from the Preliminary Connection Enquiry to the Detailed Connection Enquiry phase. The Connection Service Agreement has been signed, and GGE now awaits EE's Connection Investigation Report to guide further grid connection planning for the proposal

4.5 State Environmental Planning Policy (Hazard and Resilience) 2021

4.5.1 Chapter 3 - Hazardous and Offensive Development

State Environmental Planning Policy (Resilience and Hazards) 2021 (“the RH SEPP”) – Chapter 3 Hazardous and Offensive Development applies to any projects that fall under the policy’s definition of ‘potentially hazardous industry’ or ‘potentially offensive industry’. Certain activities may involve handling, storing or processing a range of substances which in the absence of locational, technical or operational controls may create a risk or offence to people, property or the environment. Such activities would be defined as potentially hazardous or potentially offensive.

The proposal has been assessed against the RH SEPP to determine whether it is considered "potentially hazardous industry" or "potentially offensive industry" by virtue of the storage and use of dangerous goods on site.

A Preliminary Risk Screening was conducted by Arup **(Appendix C)** based on the planned dangerous goods storage conditions provided by GGE for the solar farm. The screening assessment considered Class 3 (flammable liquids), Class 6 (toxic substances), and Class 8 (corrosive substances) materials, each to be stored in 250 L cabinets. The screening results show that:

- Quantity Screening: The storage quantity for each class of dangerous good is below the screening threshold identified in Applying SEPP 33.
- Transport Screening: The entire storage quantity for each class of dangerous good is substantially below the minimum threshold quantity per load listed in Applying SEPP 33.

As neither the quantity screening threshold nor the transport screening threshold is exceeded, a preliminary hazard analysis (PHA) is not required under the RH SEPP.

Regarding the lithium-ion batteries (LIBs) for the 11 MW BESS:

- LIBs are classified as Class 9 (miscellaneous) dangerous goods and are excluded from the Preliminary Risk Screening process defined in the RH SEPP.
- The industry-specific Planning Secretary's Environmental Assessment Requirements (SEARs) for large-scale solar energy states that "PHAs are not required for lithium-ion batteries below 30MW".

Therefore, based on both the RH SEPP screening process and the industry-specific SEARs, no PHA is required for the proposed 11 MW BESS.

4.5.2 Chapter 4 - Remediation of Land

The RH SEPP, specifically Chapter 4 on Remediation of Land, provides a statewide approach to managing contaminated land. This policy aims to reduce risks to human health and the environment by promoting appropriate remediation when necessary.

In accordance with Section 4.6 of this policy, the consent authority must consider land contamination when assessing development applications. The site's history of dry land agricultural activities, including cropping and livestock grazing, does not suggest significant contamination risks. While farm chemicals may have

been used, their application is not considered to contaminate soils to an extent requiring remediation. The property is not listed on any Council or EPA register of potentially contaminated land.

Given that the proposed development is for infrastructure rather than residential use, no further investigation or remediation is deemed necessary at this stage. Based on these considerations, the site is assessed as suitable for "electricity generating works" in compliance with the RH SEPP. This assessment supports the proposed development while ensuring environmental and health considerations are adequately addressed.

4.6 State Environmental Planning Policy (Primary Production) 2021

4.6.1 Chapter 2 Primary production and rural development

Based on Chapter 2 of the State Environmental Planning Policy (Primary Production) 2021 (“the PP SEPP”) , the proposal has been assessed in relation to its impact on primary production and rural development.

The proposal aligns with the policy's aims by facilitating orderly economic use and development of rural land while balancing primary production, residential development, and environmental protection. The solar facility is not classified as designated development, nor is it expected to significantly impact the ongoing use of surrounding land for primary production.

Importantly, neither the subject site nor the surrounding area is identified within the Schedule of State Significant Agricultural Land, indicating that the development is unlikely to compromise high-value agricultural resources.

The proposed solar facility represents a form of sustainable development in a rural area without unduly conflicting with agricultural activities. It does not involve artificial waterbodies or aquaculture and is not expected to affect oyster aquaculture.

Overall, the proposal is consistent with the aims of Chapter 2 of the PP SEPP, supporting economic development in rural areas while maintaining a balance with existing primary production activities and environmental considerations.

4.7 NSW Biodiversity Conservation Act 2016

The NSW *Biodiversity Conservation Act 2016* (“the BC Act”) is the NSW state legislation that seeks to maintain a healthy, productive, and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. This legislation includes the requirements considerations regarding biodiversity conservation.

In respect of Part 4 developments, the BC Act establishes a framework to avoid, minimise and offset the impacts of the proposed development and land-use change on biodiversity. It provides a scientific method for assessing the likely impacts of the proposed development on biodiversity values, for calculating measures to offset those impacts and for assessing improvements in biodiversity values. The Act aims to maintain the diversity and quality of ecosystems and to support conservation and threat abatement action to slow the rate of biodiversity loss and conserve threatened species and ecological communities in nature.

A Flora and Fauna Assessment was conducted for the proposal to demonstrates compliance with the objectives of the BC Act. In line with the Act's aim to maintain a healthy, productive, and resilient environment, the assessment found minimal impacts on biodiversity values. Refer to **section 5.6** and Appendix E for further details.

4.8 Wagga Wagga Local Environmental Plan 2010

The proposal is situated within the RU1 Primary Production zone as defined by the Wagga Wagga Local Environment Plan (WWLEP) 2010, as illustrated in the figure below. This zoning typically aims to encourage sustainable primary industry, maintain rural landscape character, and minimise conflicts between land uses. However, while electricity generation is not permissible in the RU1 zone under the WWLEP, the project gains permissibility through Section 2.36(1)(b) of the TISEPP. This provision allows for

"development for the purpose of electricity generating works" on non-prescribed residential zones, which includes RU1 under Section 2.35 of the TISEPP. These TISEPP provisions supersede the WWLEP, effectively rendering the project **permissible**.

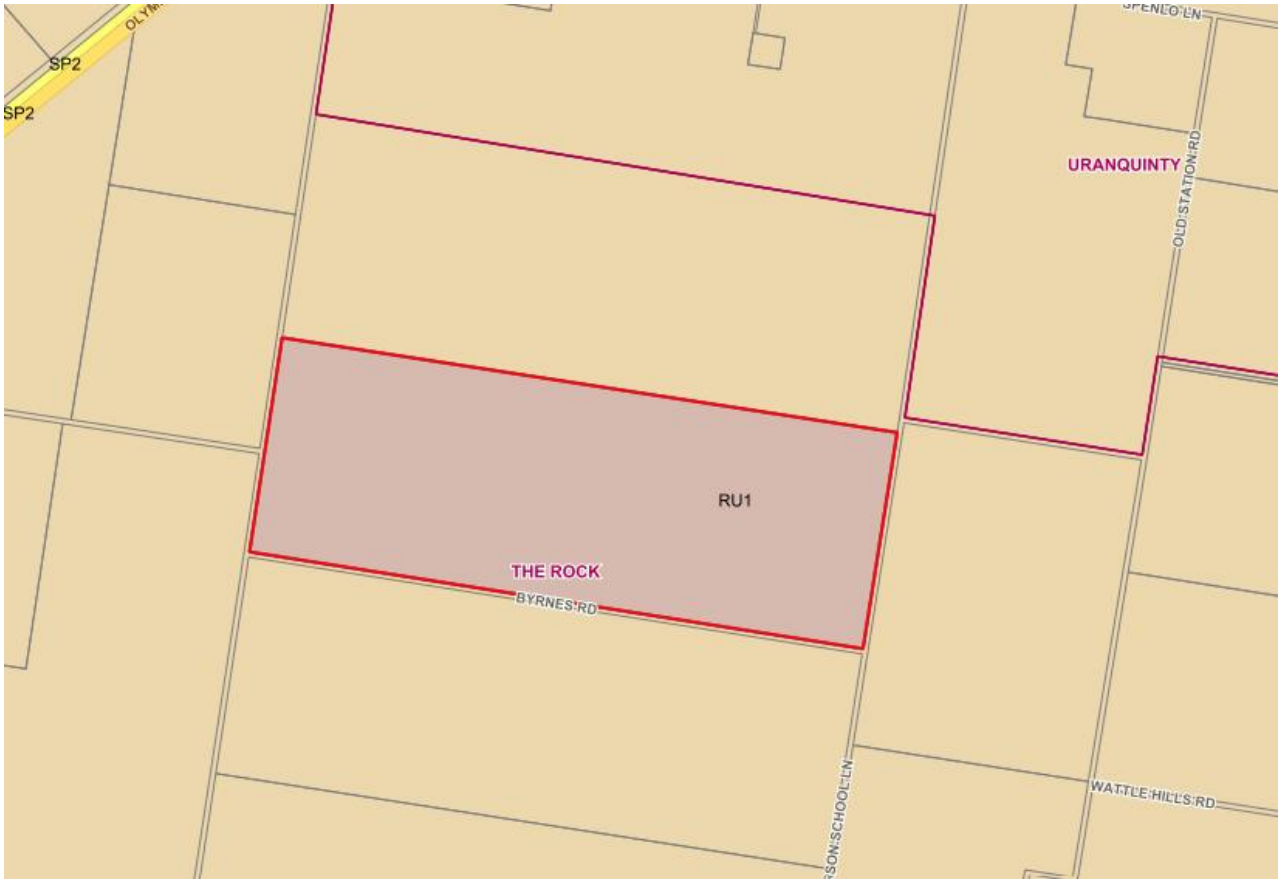


Figure 4-1: Land Use Zone of proposal site Lot 107, DP754563 (Source: WWLEP 2010 Intramap)

Under the WWLEP, "electricity generating works" are defined as buildings or places used for making or generating electricity, or electricity storage, which aligns with the proposed solar facility's function. This regulatory framework allows for the integration of renewable energy infrastructure while considering the broader objectives of rural land use planning. The following section provides an assessment of the proposal against the relevant local planning controls under the WWLEP, demonstrating how the project addresses key provisions and aligns with local planning objectives.

The applicable provisions of the WWLEP are discussed below:

4.8.1 Clause 2.3 – Zone objectives and Land Use Table

The proposal, while not directly permissible under the RU1 zoning of WWLEP 2010, gains permissibility through Section 2.36(1)(b) of the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP). This provision allows for "electricity generating works" on non-prescribed residential zones, including RU1. As TISEPP supersedes the WWLEP, the project is rendered permissible, aligning with the defined land use activities for the zone. The objectives of the RU1 land use zone are:

- **To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.**

The proposal is mapped as being Class 3 land (refer to figure below) on the Land and Soil Capability Mapping for NSW. According to Office of Environment and Heritage's 'The land and soil capability assessment scheme: second approximation', Class 3 land has limitations that must be managed to prevent soil and land degradation; however, these can be readily overcome by widely available and readily implemented land management practices. Class 3 land is especially widespread on the NSW slopes and is capable of sustaining cultivation on a rotational basis, however productivity will vary with soil fertility and

there are greater restrictions on use than for Class 1 or 2 lands due to increased limitations. The site is currently being used for cropping and grazing and whilst the development will not encourage sustainable primary industry production on the site, the development will not impact significantly on the natural resource base or the existing agricultural potential of the site. There is scope for grazing to continue on the land and across parts of the subject site that are not developed for the proposal. Upon decommissioning of the development, agricultural activities will be able to continue, with pre-development potential retained.

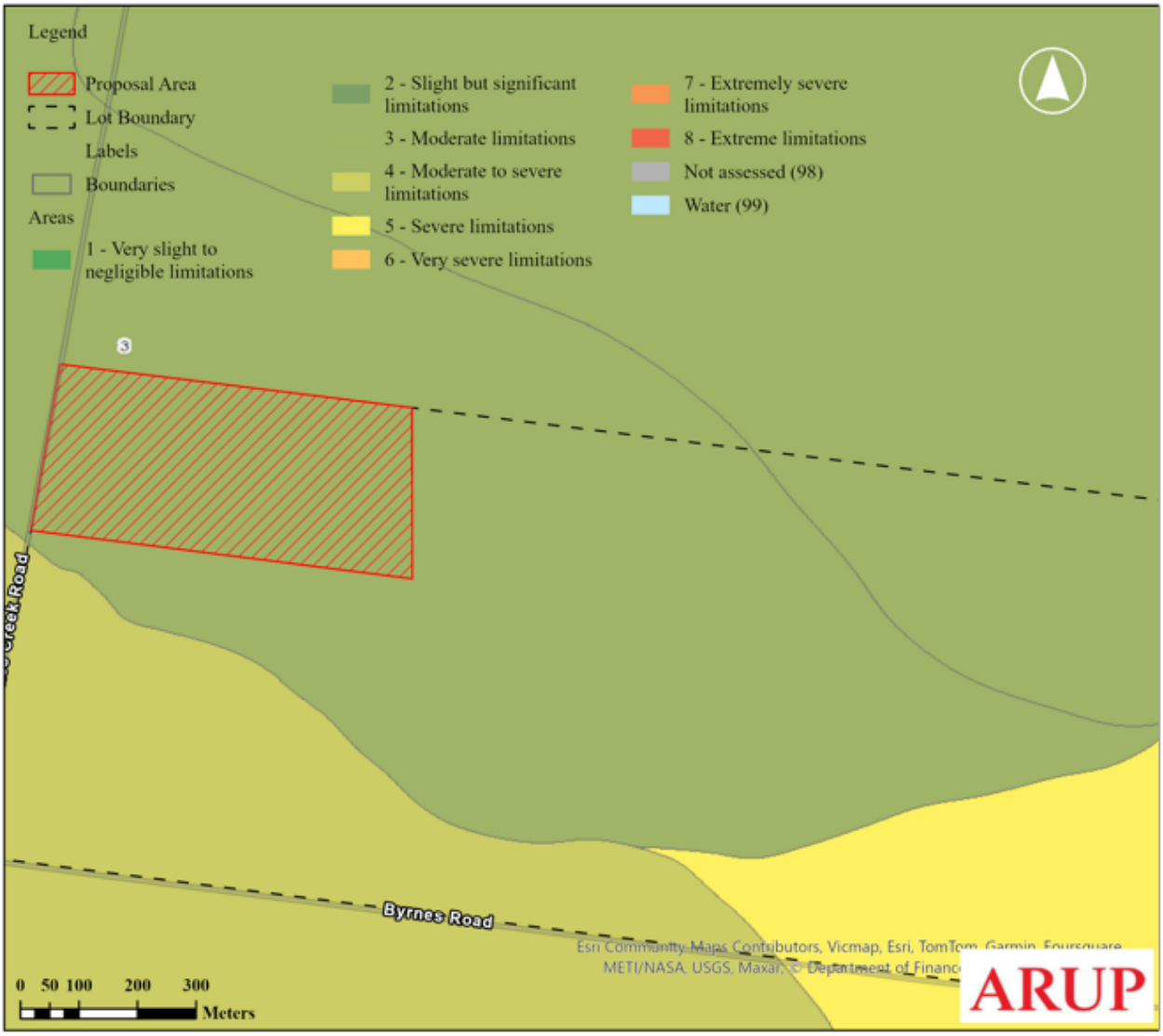


Figure 4-2: Land and Soil Capability Mapping site Lot 107, DP754563 (Source: NSW SEED Portal)

- **To encourage diversity in primary industry enterprises and systems appropriate for the area.**

The proposal is for a non-rural use which will not encourage diversity of primary industry enterprises or systems for the locality. However, the use of the land for a solar farm is diversification into an alternative land use that is considered suitable within the rural zone.

- **To minimise the fragmentation and alienation of resource lands.**

The proposal does not result in the fragmentation of land but will minimise the ability for the land to be used for agriculture. The land is not proposed to be further subdivided, with the bulk of the property to remain in agricultural production. It is the intention to return the land to agricultural use following decommissioning in 40 years.

- **To minimise conflict between land uses within this zone and land uses within adjoining zones.**

The proposal demonstrates minimal potential for land use conflicts. Its location within an area consistently zoned RU1 Primary Production ensures compatibility with surrounding land uses. The solar facility's design and operation have been carefully considered to integrate with the existing rural landscape, minimising

visual and environmental impacts. The low-impact nature of solar energy generation further supports the harmonious coexistence of the facility with neighbouring rural activities, preserving the integrity of the RU1 zone's objectives.

- **To foster strong, sustainable rural community lifestyles.**

By diversifying land use and introducing renewable energy generation, the project supports the long-term sustainability of the rural area. It offers potential economic benefits through local job creation during construction and maintenance phases, as well as possible income diversification for landowners. The facility aligns with broader sustainability goals under the Wagga Wagga 2040 (Local Strategic Planning Statement), demonstrating the area's commitment to clean energy production. This initiative can enhance community resilience by reducing reliance on non-renewable energy sources and potentially stabilising local energy costs.

- **To maintain the rural landscape character of the land.**

The proposal's layout and infrastructure have been planned to minimise visual impact on the surrounding countryside. The low profile of solar panels and associated structures ensures they do not dominate the landscape or significantly alter the area's rural aesthetic. Existing vegetation will be retained and additional landscaping measures may be implemented to further integrate the facility into the rural setting. The project occupies only a portion of the property, allowing for the continuation of agricultural activities on the remaining land, thus preserving the overall rural character. By maintaining large open spaces and respecting the existing topography, the solar facility aims to coexist harmoniously with the traditional rural landscape, demonstrating that renewable energy infrastructure can be sensitively incorporated into agricultural areas without compromising their essential character.

- **To allow tourist and visitor accommodation only where it is in association with agricultural activities**.

The proposal does not include any tourist or visitor accommodation components. As such, this objective of the RU1 Primary Production zone is not directly applicable to the project. The development focuses solely on renewable energy generation and does not propose any changes that would affect or conflict with potential future agricultural-related tourism in the area. By maintaining much of the land for continued agricultural use, the proposal preserves the possibility for future agricultural tourism activities on the property or in the surrounding area, should they be proposed.

4.8.2 Clause 5.10 – Heritage conservation

Clause 5.10 of the LEP relates to heritage conservation and seeks to conserve the environmental heritage of the Wagga LGA, the heritage significance of heritage items and heritage conservation areas, archaeological sites and Aboriginal objects and places of heritage significance.

The subject land is not identified as a heritage item nor is it located within a heritage conservation area per Schedule 5 and the Heritage Map of the LEP.

Regarding Aboriginal Cultural Heritage, an Aboriginal Heritage Information Management System (AHIMS) search was conducted on 11 September 2024. The search, which included a 1km buffer around the site, returned zero (0) records within the site development boundary and zero (0) records within the buffer zone. This indicates that there are no known Aboriginal heritage sites or places directly affected by the proposal.

4.8.3 Clause 5.21 – Flood Planning

The proposal is not identified as being within a flood planning area. As such, the specific flood-related development consent requirements outlined in the Wagga Wagga Local Environmental Plan do not apply to this development. While flood risk is not a concern for this site, the development will still adhere to general best practices for stormwater management and drainage to ensure that the project does not create or exacerbate any local water flow issues.

4.8.4 Clause 7.1A – Earthworks

Clause 7.1A(3) states before granting development consent for earthworks (or for development involving ancillary earthworks), the consent authority must consider the following:

(a) the likely disruption of, or any detrimental effect on, existing drainage patterns and soil stability in the locality,

(b) the effect of the proposed development on the likely future use or redevelopment of the land,

(c) the quality of the fill or the soil to be excavated, or both,

(d) the effect of the proposed development on the existing and likely amenity of adjoining properties,

(e) the source of any fill material and the destination of any excavated material,

(f) the likelihood of disturbing relics,

(g) the proximity to and potential for adverse impacts on any watercourse, drinking water catchment or environmentally sensitive area.

The proposal requires minimal earthworks due to the site's generally flat topography. These works primarily involve:

- Solar array and infrastructure foundations
- Utility trenching
- Internal road construction
- Small-scale excavation for ancillary structures

The limited scope of these earthworks is not expected to significantly impact drainage structures or soil stability. The works are not located in areas of instability or near main watercourses. All excavated material will be retained on-site, with no import of fill or export of excavated material planned. Given the minor scale of these earthworks, they are not anticipated to compromise the potential future return of the land to agricultural use.

4.8.5 Clause 7.3 – Biodiversity

The proposal is not mapped as “Biodiversity” on the Terrestrial Biodiversity Map and as such clause 7.3 does not apply.

4.8.6 Clause 7.4 – Vulnerable land

The proposal is not mapped as “Vulnerable Land” on the ‘Vulnerable Land Map’ and as such clause 7.4 does not apply.

4.8.7 Clause 7.5 – Riparian lands and waterway

The proposal is not mapped as “Waterway” on the ‘Water Resource Map’ and as such clause 7.5 does not apply.

4.8.8 Clause 7.6 – Groundwater vulnerability

The proposal is not mapped as “Groundwater” on the ‘Water Resource Map’ and as such clause 7.6 does not apply.

4.9 Wagga Wagga Development Control Plan 2010

The purpose of the Wagga Wagga Development Control Plan 2010 (WWDCP) is to illustrate the controls that apply to particular types of development. The WWDCP follows the EP&A Act and adds additional information not covered in the WWLEP.

The applicable provisions of the WWDCP are:

- Part B, Section 2 - Controls that apply to all development
- Part B, Section 4 – Environmental Hazards and Management
- Part D, Section 8 – Rural Development

4.9.1 Part B, Section 2 – Controls that apply to all developments

The objectives of this chapter are to provide comprehensive controls that apply to all developments within the local government area. It aims to ensure that new developments are well-designed, safe, environmentally sustainable, and compatible with the existing character of the area. The chapter seeks to address various aspects of development including vehicle access, parking, landscaping, signage, safety, erosion control, and specific considerations for developments near open spaces or high-pressure gas pipelines.

Table 4-1 Part B, Section 2 – Controls that apply to all developments

Control	Description	Comment
Part B, Section 2 – Controls that apply to all developments		
2.1 Vehicle Access and Movement	To ensure the safe and efficient operation of roads within the local government area of Wagga Wagga.	**Complies** As detailed in the Traffic Impact Assessment conducted by Arup, the project's primary access via Burkes Creek Road has been designed to meet safety standards, including appropriate sight distances and turn treatments. The assessment found that the project's traffic generation during both construction (peak of 23 vehicle movements per day) and operation (minimal maintenance visits) will have a negligible impact on the surrounding road network. Internal roads and on-site parking have been planned to facilitate safe vehicle movements and minimise on-street parking. A Construction Traffic Management Plan and scheduling of deliveries and maintenance visits during off-peak hours will further support safe and efficient road operations. Refer to **section 5.5** for further details on traffic impacts.
2.2 Off-street parking	Developments are required to provide off-street parking to meet anticipated demands.	**Complies** The proposal does not meet the off-street parking requirements outlined in Section 2.2 of the Wagga Wagga Development Control Plan 2010. The facility requires minimal on-site staff during normal operations, with maintenance activities being periodic and easily accommodated within the site's area and internal road network. As the site is not open to the public and functions primarily for electricity generation, traditional parking requirements are not applicable. Necessary parking will be adequately accommodated within the site on an as-needed basis, utilising the internal roads and attached designated parking zones without compromising safety or operational efficiency.
2.3 Landscaping	Trees, shrubs and green spaces can “soften” the impact of buildings, screen private spaces and create modified micro-climates. The importance of well-designed landscaping is also increasing in the face of climate change and is critical for attractive and useable outdoor spaces.	**Complies** The proposal aligns with the landscaping objectives outlined in Section 2.3 of the WWDCP. The proposal benefits from existing vegetation screening along the north and western boundaries, which will be retained to maintain the site's natural features and minimise visual impact. As no clearing is proposed, the development preserves the existing landscape character. Any additional landscaping will be minimal, primarily focused on re-turfing areas disturbed during construction to prevent erosion and maintain site aesthetics. The existing vegetation, combined with the low profile of solar panels, will help soften the visual impact of the development, ensuring it integrates harmoniously with the surrounding rural landscape while requiring minimal ongoing landscape maintenance.
2.4 Signage	Signs are an important part of the urban and rural environment. They are used to promote business and communicate information. The DCP encourages signs to complement their location, and not dominate or detract from the character of the area.	**N/A** The proposal does not include any signage beyond essential safety and identification markers. Therefore, this section is not applicable to the development.
2.5 Safety and security	Ensuring adequate site security while minimising	**Complies**

Control	Description	Comment
	impact on the surrounding rural environment.	The proposal will be secured by perimeter fencing and gated access points. CCTV will be installed to monitor the key infrastructure items such as the battery modules and inverter.
2.6 Erosion and Sediment Control Principles	To ensure property development stakeholders implement reasonable measures to preserve the existing vegetation, provide adequate measures to prevent soil loss and rehabilitate the site through interim and long term revegetation strategies.	**Complies** During construction, erosion and sediment control measures will be implemented. These include silt fences and sediment traps. Post-construction, disturbed areas will be promptly revegetated to prevent soil loss. A soil and water management plan could be conditioned as part of the consent to ensure appropriate management and minimisation of erosion and sediment controls to be in place during and after construction.
2.7 Development adjoining open space	Minimise risk to life, property and the environment from bush fire and ensure compliance with statutory obligations for development in bush fire prone areas.	**N/A** The proposal site does not adjoin open space.

4.9.2 Part B, Section 4 – Environmental Hazards and Management

The purpose of this chapter is to address environmental hazards and management in development, focusing on bushfire and flooding risks in the Wagga Wagga area. It aims to minimise risks to life, property, and the environment by ensuring that new developments comply with relevant regulations and incorporate appropriate design and construction measures. The chapter provides specific controls and guidelines for development in bushfire-prone and flood-prone areas, tailored to different flood risk precincts within the local government area.

Table 4-2 Part B, Section 2 – Controls that apply to all developments

Control	Description	Comment
Part B, Section 2 – Controls that apply to all developments		
4.1 Bushfire	Minimise risk to life, property and the environment from bush fire and ensure compliance with statutory obligations for development in bush fire prone areas.	**Complies** The Bushfire Assessment Report demonstrates compliance with statutory obligations for development in bush fire prone areas and minimises risk to life, property, and the environment. Key measures include implementing an Asset Protection Zone and developing a comprehensive Bush Fire Emergency Management Plan. The development satisfies the aim and objectives of Planning for Bush Fire Protection 2019, with specific considerations for solar farms addressed. A Preliminary Risk Screening has determined the development is not a "potentially hazardous industry" under SEPP 33. Refer to section 4.5.1 and 5.8 for further details.
4.2 Flooding	Minimise the risk of life during floods by encouraging construction and development that is “flood proofed” and compatible with the flood risk of the area.	**N/A** The subject site of the proposal is not identified as flood prone land. As such, no further assessments, specific flood-related design requirements or floor level restrictions are necessary for the proposal.

4.9.3 Part D, Section 8 – Rural Development

The purpose of this chapter is to address environmental hazards and management in development, focusing on bushfire and flooding risks in the Wagga Wagga area. It aims to minimize risks to life, property, and the environment by ensuring that new developments comply with relevant regulations and incorporate appropriate design and construction measures. The chapter provides specific controls and guidelines for development in bushfire-prone and flood-prone areas, tailored to different flood risk precincts within the local government area.

Table 4-3 Part D, Section 8 – Rural Development

Control	Description	Comment
Part D, Section 8 - Rural Development		
8.1 Development in rural areas	Ensure that rural developments are compatible with site context.	**Complies** The proposal has been designed to be compatible with its rural context. The facility will occupy approximately 15 hectares in the north-west

Control	Description	Comment
		corner of the property, preserving the remainder of the land for ongoing agricultural use. The low-profile nature of solar panels and the existing vegetative screening along boundaries will help maintain the rural character of the area.
	Minimise potential for conflicts between traditional and productive agricultural uses and non-agricultural uses.	**Complies** The proposal will occupy only a portion of the property, allowing for continued agricultural use on the remaining land. The proposal minimises land disturbance, and the use of single-axis trackers could allow for potential sheep grazing between panel rows, demonstrating a dual-use approach that supports both renewable energy generation and agriculture.
	Ensure that adequate buffers are provided so that dwellings do not interfere with the right to farm adjoining or adjacent land.	**Complies** The proposal includes setbacks from property boundaries and existing vegetation along the north and west boundaries will be maintained as natural buffers (refer to appendix A). These measures ensure that the proposal will not interfere with farming activities on adjacent properties.
	Ensure safe and adequate servicing and access arrangements.	**Complies** As detailed in the Traffic Impact Assessment conducted by Arup, safe and adequate access arrangements have been carefully planned. The site access on Burkes Creek Road will be designed to meet required sight distances and will include appropriate turn treatments. Internal roads have been planned to facilitate safe movement of both light and heavy vehicles. The assessment concluded that the project would have a negligible impact on the surrounding road network during both construction and operation phases. Additionally, all necessary services will be provided on-site, minimising impact on local infrastructure.

4.10 Strategic Planning Policies

4.10.1 Riverina Murray Regional Plan 2041

The Riverina Murray Regional Plan 2041, adopted by the NSW Government in 2023, provides the strategic planning framework to guide decision-making and development in the Riverina & Murray regions for the next 20 years. This plan updates and builds upon the previous 2036 version.

The Plan establishes a framework to grow the region's cities and local centres, supports the protection of high-value environmental assets, and aims to develop a strong, diverse, and competitive economy central to building prosperity and resilience in the region.

The proposal aligns with several key objectives of the Plan, particularly:

Objective 13: Support the transition to net zero by 2050

The development directly supports this objective by:

- Contributing to renewable energy generation in the region
- Supporting the region's transition to a low-carbon economy

The proposal also supports specific strategies within this objective, including:

- Strategy 13.1, which encourages the incorporation of renewable energy into urban design and planning
- Preparing the region for the transition to net zero emissions

Furthermore, the project aligns with the Plan's focus on:

- Capitalising on changing regional economic opportunities
- Promoting the region as a leader in both production and manufacturing while progressing towards the state's goal of achieving net zero by 2050

The proposal promotes best practice community engagement and maximises the ability to support local communities through a utility-scale renewable energy project. It leverages the Riverina Murray's strategic

location and will contribute to the growing and diverse economy of the region, particularly around Wagga Wagga.

By providing clean, renewable energy, the proposal will support the benefits of regional growth and provide greater opportunities for business and economic activity, aligning with the Plan's vision for a diversified economy founded on Australia's food bowl, iconic waterways, and a network of vibrant connected communities.

4.10.2 Local Strategic Planning Statement

The Wagga Wagga Local Strategic Planning Statement (WWLSPS) - Wagga Wagga 2040 (LSPS) sets the long-term strategic framework for planning and development in the City of Wagga Wagga local government area over the next 20-years. It addresses issues of strategic significance to the Council, guiding development or introduction of new planning policies, strategies or actions related to land-use and development. The WWLSPS aims to guide future land use planning and influence public and private investment so that it enhances the wellbeing of the community and environment. To achieve this, the WWLSPS sets out three main themes:

- The Environment
- Growing Economy
- Community Place and Identity

The WWLSPS also identifies planning priorities and future strategic planning activities, in the form of studies and strategies. The proposal is considered to align with the following Principles as set out in the LSPS

- Principle 3: Manage growth sustainably
- Principle 4: The southern capital of New South Wales
- Principle 5: Encourage and support investment
- Principle 7: Growth is supported by sustainable infrastructure

5. Assessment of Environmental Impacts

This section of the SEE identifies potential impacts which may occur because of the proposed development and are relevant matters for the consideration of the DA under Section 4.15(1)(b) to (e) of the EP&A Act 1979.

5.1 Soils and Hydrology

The proposal is primarily situated on the Pearson (pe) soil landscape (*Soil Landscapes of the Wagga Wagga 1:100000 Map)*. This landscape is characterised by gently undulating low tableland with thick alluvial clay sediments, likely with windblown clay additions. The soils are moderately deep (80-120 cm) Eutrophic Red Sodosols on the tableland and Subnatric Red Sodosols on marginal slopes. The site's topography features slope gradients mostly <2%, with local relief mostly <10 m. Current land use is predominantly agricultural, with the area almost completely cleared of its original tall woodland vegetation.

Key soil characteristics include:

- Strong acidity, particularly in the subsoil
- Locally hardsetting surface
- Moderate water erosion hazard, especially on steeper marginal slopes
- Low fertility
- Sodicity in some layers

The hydrology of the proposal area is characteristic of the broader Wagga Wagga region's rural landscape. The property is situated within the Murrumbidgee River catchment, with Burkes Creek, a tributary of the Murrumbidgee, located approximately 2km south of the proposal site. The area experiences a semi-arid climate with an average annual rainfall of around 573mm, predominantly falling in winter and spring (Bureau of Meteorology, 2024). The site's gently undulating topography, with slope gradients mostly less than 2%, which may influence its surface water flows. No major watercourses traverse the immediate development area.

Additionally, the proposal site is not identified as being flood prone, eliminating the need for further flood-related considerations.

Construction

During the construction phase, activities such as site preparation, installation of solar panels and associated infrastructure foundations, and construction of access roads have the potential to cause soil erosion and off site sedimentation. The moderate erosion hazard of the soil landscape necessitates management. There is also a risk of contamination from construction equipment and materials. Temporary changes to surface water drainage patterns may occur due to earthworks and the installation of proposal infrastructure. However, the proposal design minimises substantial earthworks, focusing on small-scale excavation for footings, ancillary structures, and the establishment of an unsealed perimeter road.

Operation

Once operational, the proposal is expected to have minimal ongoing impacts on soil and water resources. The presence of solar panels is unlikely to impact local rainfall- runoff patterns, because the solar array design does not significantly change ground permeability. Permeable surfaces between panel arrays will allow for infiltration and groundwater recharge. The facility does not require water for electricity generation, minimising water consumption during operation.

Mitigation Measures

To minimise soil erosion and sedimentation impacts during the construction and operation of the proposal, the following mitigation measures will be implemented:

- Water diversion or filtration measures, including sandbags, silt fencing, or straw bale sediment filter fencing, will be implemented on the downslope property boundary.
- All sediment control measures will be installed prior to commencement of work and maintained until permanent rehabilitation/stabilisation measures are completed.
- Vehicle access will be restricted during wet or muddy conditions. A single access point will be established with blue metal, gravel, or similar materials to prevent erosion and minimise mud tracking.
- Temporary fencing will be installed along boundaries adjoining roadways to prevent vehicles bypassing the designated access point.
- Stockpiles will be located wholly within the property boundary and covered to prevent wind erosion. Sediment fencing will be provided downslope of all stockpiles.
- Disturbed areas will be stabilised with seeded topsoil or turf as quickly as possible, no later than 14 days after completion of construction works.
- All erosion and sediment control devices will remain in place until the site is fully stabilised.

5.2 Visual Impacts

The Project sits within an expansive rural landscape of large rectangular field systems bordered by linear tree plantings. Potential visual receptors of the Project development are limited. From a desktop study of publicly available satellite imagery, there appears to be three (3) residential dwellings within 1km of the Project site. Two properties are located to the north (off Burkes Creek Road and Olympic Highway) and one to the south (off Burkes Creek Road) - refer Figure 5-1.

Figure 5-1: Residential receptors within 1km of Project site

Views towards the proposal from these locations will be fully or partially screened by existing vegetation that lines the northern and western proposal site boundaries (refer to Photograph **3**), as well as landscape treatments within the properties themselves.

Potential visibility of the proposal is slightly higher to the north due to its slightly elevated position (elevation falls gradually from north to south). Partially screened views towards the development will also be available to motorists travelling along Burkes Creek Road and Byrnes Road.

Photograph 3: Proposal area illustrating existing vegetation screening to northern and western boundaries

Overall, a significant adverse visual impact is not expected during construction or operation of the proposal due to the distance to visual receptors, low height nature of the built works and presence of existing screening vegetation.

5.3 3.8Glint and Glare

Glint and glare from photovoltaic (PV) panels can potentially impact surrounding sensitive receivers. Glint refers to momentary flashes of bright light, while glare is a continuous source of light, typically associated with stationary objects. In rural settings, existing glare sources are generally limited to occasional reflections from farm equipment, vehicles, and natural water bodies.

The proposed solar farm utilises PV panels designed to absorb 80-90% of incoming light, with anti-reflective coatings to minimise reflection. These panels are typically less reflective than natural elements like soils, crops, and open water. The single axis tracking system with backtracking capability further reduces potential glare by optimising panel angles throughout the day.

Potential impacts on key receptors include (refer Figure 5-1):

- Residential Receptors: The risk is considered negligible due to significant distances (>700m) to the nearest residences, existing vegetation screening at the site boundaries, additional in-property screening at the residences themselves and the use of anti – reflective coating on the solar panels. Furthermore, there is no direct line of sight between the residences and the solar panels, which are oriented east to west further reducing the potential for glare impacts.

- Road Users: Potential glare affecting drivers on Burkes Creek Road is considered low and poses minimal risk as it will be largely mitigated by the tracking system design and anti – reflective coating. The low traffic volume on Burkes Creek Road significantly reduces the likelihood of driver exposure to any potential glare.
- Aviation: Given the considerable distance to Wagga Wagga Airport (>20km), no significant impacts on aviation operations are anticipated.

Overall, the proposal is likely to have minimal to no glint and glare impacts on surrounding receptors. This assessment is based on the combination of anti-reflective panel technology, tracking system design, east-west panel orientation, substantial distances to receptors and the low traffic rural setting, lack of direct line of sight, existing vegetative screening, all contributing to a negligible overall risk of glare impacts.

5.4 Noise and Vibration

The proposal is situated in a rural area characterised by low background noise levels typical of agricultural settings. The nearest sensitive receivers are located within 1km radius of the proposal area, as shown in **Figure 5-1**:

- R1: 5232 Olympic Highway, The Rock NSW 2655 (approximately 1km from proposal site)
- R2: 1100 Burkes Creek Road, The Rock NSW 2655 (approximately 700m from proposal site)
- R3: 10 Byrnes Road, The Rock NSW 2655 (approximately 775m from proposal site)

The NSW EPA's Noise Policy for Industry (NPfI) 2017 provides guidance on minimum assumed Rating Background Levels (RBLs) for rural areas:

- Daytime (7am to 6pm): 35 dB(A)
- Evening (6pm to 10pm): 30 dB(A)
- Night-time (10pm to 7am): 30 dB(A)

These levels are considered representative of the existing noise environment at the proposal site and surrounding sensitive receivers. The rural setting and considerable distance to the nearest receivers contribute to the generally quiet ambient noise conditions in the area.

Given the relatively large distances between the proposal and the nearest sensitive receivers, noise levels have been conservatively predicted using horizontal distance-based calculations without corrections applied for ground / atmospheric attenuation effects.

Construction Impacts

Construction activities for the proposal are temporary, expected to last up to 12 months. Construction works are expected to occur during standard hours only.

The primary noise sources during construction are expected to be:

- Excavators and bobcats for site preparation
- Piling rigs for installation of mounting structures
- Trucks for material delivery and removal
- Power tools and generators
- Crane for lifting solar panels into place

Predicted Noise Levels:

Based on the similar project *(GGE DA 10.2022.56.1/ 5MW Solar Farm 55 Milgate Road, Moama)*, we can estimate the following noise levels at the nearest sensitive receivers:

1. Site Preparation/Excavation: 36-41 dB(A) $L_{Aeq(15min)}$

2. Construction: 39-44 dB(A) $L_{Aeq(15min)}$

Noise impacts from construction activities are predicted to comply with the "Noise Affected" level of 45 dB(A) set by the NSW EPA's Interim Construction Noise Guideline (ICNG) (based on the assumed background noise level of 35 dB(A) for a rural area).

Operational Impacts

The primary noise sources associated with the operation of the solar farm are expected to be:

1. Inverters (one SG4950-MV-MV inverter)

2. Battery Energy Storage System (4 battery units, total 11MWh)

3. Solar panel tracker motors (1 motor per string, total 402 units; operating 1 minute per 15-minute period)

4. Occasional vehicle movements for maintenance

The noise emissions from these sources are expected to be minimal. The inverters and battery storage systems typically generate low-level humming noises, which are generally not audible beyond the site boundaries.

Using the noise data from previous solar farm assessments as a reference *(GGE DA 10.2022.56.1/ 5MW Solar Farm 55 Milgate Road, Moama),* we can estimate the following sound power levels for our equipment:

- Inverter (SG4950-HV-MV): approximately 99 dB(A)
- Battery Energy Storage System (per unit): approximately 94 dB(A)
- Solar panel tracker motor (per unit): approximately 76 dB(A)

The project-specific noise trigger levels for our proposal, based on the NPfI, would be:

- Daytime: 40 dB(A) $L_{Aeq(15min)}$
- Evening: 35 dB(A) $L_{Aeq(15min)}$
- Night-time: 35 dB(A) $L_{Aeq(15min)}$

Based on the above equipment, operational noise levels have been predicted at the nearest sensitive receivers as follows:

- R1: 32 dB(A) $L_{Aeq(15min)}$
- R2: 35 dB(A) $L_{Aeq(15min)}$
- R3: 34 dB(A) $L_{Aeq(15min)}$

Operational noise levels are predicted to comply with project-specific noise trigger levels at all times. It is noted that these predictions are based on conservative distance-based calculations with the assumption that all equipment are operating concurrently from a single point. In reality, equipment are not likely to be operating at full capacity at all times and distributed across the whole site.

Vehicle movements during operation will be minimal, with maintenance visits expected to occur only several times per year. This infrequent traffic is not anticipated to cause any noticeable increase in local road traffic noise levels.

Vibration

Given the distance to the nearest sensitive receivers (over 700m), both construction and operational vibration impacts are expected to be negligible. During construction, vibration levels at nearby structures are likely to be less than 1 mm/s peak particle velocity (PPV), well below the 7.5 mm/s PPV cosmetic damage criterion for residential buildings (*British Standard BS 7385-2:1993 Evaluation and measurement for vibration in*

buildings Part 2 and the German Standard DIN 4150-3:2016 Structural Vibration - Effects of Vibration on Structures). The proposal's operation is not expected to generate any significant vibration, with levels at nearby receivers anticipated to be imperceptible and compliant with all relevant standards.

Mitigation Measures

While the construction and operational noise impacts are expected to be minimal, the following mitigation measures will be implemented to further reduce any potential noise impacts:

- Restrict construction hours to:
  - Monday to Friday: 7am to 5pm
  - Saturday: 8am to 1pm
  - No work on Sundays or public holidays
- Conduct a noise and vibration induction for all site staff, explaining control measures and project-specific reduction strategies.
- Use the quietest available equipment and lowest vibration generating equipment where feasible.
- Implement periods of respite for highly intensive activities producing noise levels greater than 75 dB(A) at nearby residences.
- Locate stationary noise sources (e.g., generators) as far from sensitive receivers as possible.
- Ensure all equipment is properly maintained and operated according to manufacturers' specifications.
- Use temporary noise barriers where practical, especially for stationary noise sources.
- Schedule deliveries to occur during normal construction hours and turn off truck engines if idling for more than five minutes.
- Conduct noise monitoring if complaints are received to verify compliance with predicted levels and identify any additional mitigation measures if required.
- Low-noise equipment will be selected where possible, particularly for inverters and battery storage systems.
- Noise-generating equipment will be located as far as practicable from sensitive receivers and, where possible, behind other structures that can provide acoustic shielding.
- Regular maintenance of all equipment will be conducted to ensure it operates within specified noise levels.
- While the solar farm will operate 24/7, any non-essential maintenance activities will be scheduled during standard daytime hours to minimise potential disturbance.
- A complaint management system will be established to address any noise-related concerns from nearby residents promptly.

5.5 Traffic and Access

The existing traffic environment surrounding the proposal is characterised by its rural setting and low-volume road network. The primary access to the site is via Burkes Creek Road, an unsealed rural road that connects Olympic Highway to the north with Burkes Creek to the south (refer to Figure **5-2**). Burkes Creek Road is a single carriageway with two lanes accommodating two-way traffic, and as an unmarked rural road, it has a default speed limit of 100 km/h. The Olympic Highway, a key arterial route in the region, is also a single carriageway with two lanes and a posted speed limit of 100 km/h.

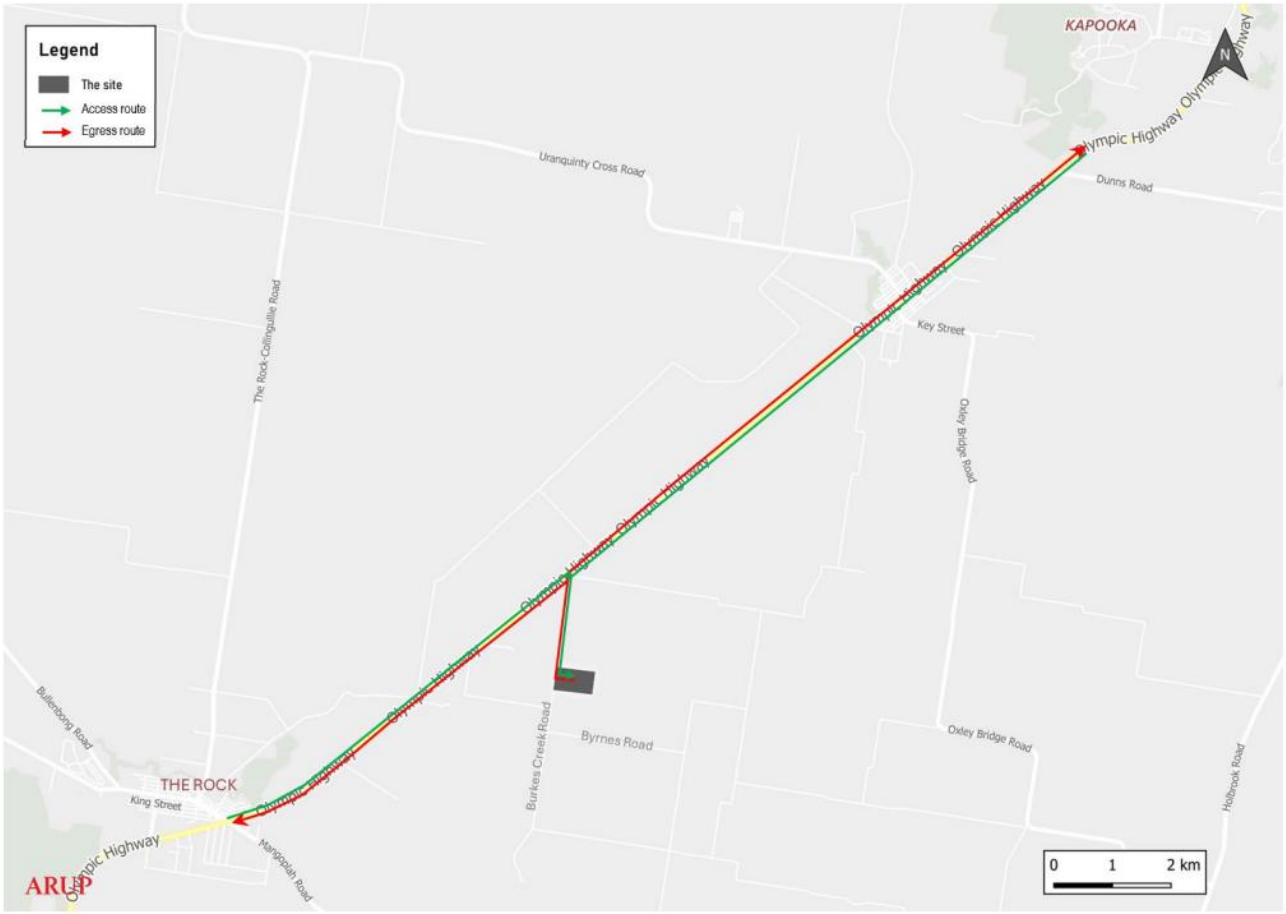


Figure 5-2: Surrounding Road network

Public transport in the vicinity is limited, with only one school bus route (S123) operating in the area, running between The Rock and Wagga Wagga High School via Olympic Highway. The rural nature of the area is further reflected in the absence of dedicated cycling paths or footpaths in the immediate vicinity of the site. Traffic volumes on Burkes Creek Road are notably low, consistent with the surrounding rural and agricultural land uses.

A review of crash data for the period 2018-2022 revealed four recorded crashes on the Olympic Highway, including one fatal collision. Significantly, no crashes were recorded on Burkes Creek Road during this period, suggesting a relatively safe traffic environment on the immediate access route to the proposed solar facility site.

Arup has completed a comprehensive Traffic Impact Assessment for the proposal. The potential impacts during both the construction and operational phases are discussed below, with the full assessment provided in **Appendix D** of this SEE.

Construction Phase

During the construction phase, expected to last 6 to 12 months starting in 2026, the site will generate a peak of up to 20 light vehicle movements during morning and evening peak hours, primarily from worker commutes. Additionally, up to three heavy vehicles per day are anticipated for equipment and material delivery, resulting in an average of one inbound and one outbound movement per hour during interpeak periods. This total peak of 23 vehicle movements per day is expected to have a negligible impact on the surrounding road network, including Olympic Highway. To mitigate potential impacts, 20 on-site parking spaces will be provided, minimising the need for on-street parking.

No impacts to school bus services are expected given the relatively low volumes of traffic being generated. Additionally, no disruptions to bus stop operations are anticipated. No impacts to pedestrians or cyclists are expected given that footpath or cycleway closures are not proposed during the construction and operational phases.

Operation Phase

The operational phase, lasting up to 30 years, will see a significant reduction in traffic compared to the construction phase. Maintenance crews will visit the site only several times a year, with no permanent staff on-site. This minimal traffic generation is expected to have a negligible impact on the surrounding road network performance. The parking space provided on-site allows for upto 20 spaces which will be more than sufficient to accommodate any operational and maintenance vehicles, ensuring no impact on local parking availability.

Mitigation Measures

Based on the TIA, the following mitigation measures will be implemented to manage traffic impacts for the proposal:

- Site Access Design:
  - Ensure Safe Intersection Sight Distance (SISD) of 286m and 291m for south and north approaches along Burkes Creek Road, respectively.
  - Provide Minimum Gap Sight Distance (MGSD) of 139m for both left and right turn movements to Burkes Creek Road.
  - Implement Basic Left Turn (BAL) and Basic Right Turn (BAR) treatments at the site access.
- Design onsite parking areas in accordance with AS2890.1 and AS2890.2 to ensure proper layout and safety.
- Schedule deliveries to minimise peak hour traffic impacts.
- Implement a Construction Traffic Management Plan to manage vehicle movements and ensure safety.
- Schedule maintenance visits during off-peak periods where possible.
- Implement dust suppression measures on Burkes Creek Road during dry periods to maintain air quality and visibility for road users.
- Implement appropriate speed limits for project-related vehicles on Burkes Creek Road and within the site.
- Notify residents of any significant traffic changes or potential disruptions.
- Regularly monitor the effectiveness of traffic management measures and review/update as necessary throughout the project lifecycle.

5.6 Biodiversity

A Flora and Fauna Assessment was conducted by Habitat Innovation and Management for the proposal **(Appendix E)**. The assessment evaluated current biodiversity, potential impacts, and proposed mitigation measures. The proposal area was noted to be primarily used for wheat cropping, with a small 0.11 ha remnant patch of Eucalyptus blakelyi (Blakely's Red Gum) identified around a historical farm dam, despite initial mapping showing no native vegetation.

These trees are estimated to be less than 80 years old, with only one tree containing a hollow, likely occupied by nesting Galahs. The ground cover within this remnant and on the margins of the cropped land primarily consisted of exotic species. Fauna recorded during the field assessment included Nankeen Kestrel, Galah, Australian Magpie, and Eastern Grey Kangaroo.

Adjacent to the western and northern boundaries, PCT 267 (White Box - White Cypress Pine - Western Grey Box woodland) was confirmed, which is considered a Critically Endangered Ecological Community under both EPBC Act and BC Act, though it lies outside the study area.

Construction Impacts

The construction phase poses minimal risks to local flora and fauna, given the current land use of cropping and absence of native vegetation within the footprint. However, potential impacts include vegetation and habitat disturbance, particularly to the remnant Blakely's Red Gum patch and adjacent PCT 267, though these are not within the development area. Soil erosion and sediment runoff present a moderate risk, especially during rain events, which could impact downstream ecosystems. The gateway upgrade may require trimming of trees in the road reserve, requiring consent from the maintaining authority. Fauna displacement is expected to be minimal, as all recorded species are highly mobile and likely use the site opportunistically.

Operational Impacts

During the operational phase, the primary concerns are stormwater management and potential soil erosion. The large impervious surfaces created by solar panels can lead to concentrated runoff, increasing the risk of soil erosion over time. This could potentially impact the stability of the land and nearby ecosystems, as well as cause sediment deposition in farm dams and receiving waterways. Wildlife movement may be affected by the presence of fencing, particularly if barbed wire is used. This could create barriers for small mammals, including the endangered Squirrel Glider, large owls, and microbats, especially given the proximity of PCT 267 which is associated with these species. Barbed wire on top strains of security fencing could pose a direct threat to these animals, potentially causing severe injuries.

Mitigation Measures

Based on the Flora and Fauna assessment, several mitigation measures are recommended:

- Install appropriate stormwater treatment systems to manage runoff from solar panels, reducing long-term soil degradation and protecting surrounding ecosystems
- Avoid using barbed wire in boundary fencing to protect wildlife, particularly the endangered Squirrel Glider and other species traversing the area from adjacent native vegetation
- Develop and implement a Vegetation Management Plan (VMP) for revegetating the site with native grasses and forbs. This will reduce the need for ongoing weed control, enhance local biodiversity, promote soil stabilisation, and reduce erosion risks

5.7 Heritage

5.7.1 Aboriginal Cultural Heritage

An AHIMS search was conducted on 11 September 2024 returning zero (0) records within the site development boundary and zero (0) records within a 1 km buffer of the site, see figure below. Given the absence of cultural heritage no further assessment or mitigation measures are required for the proposal.

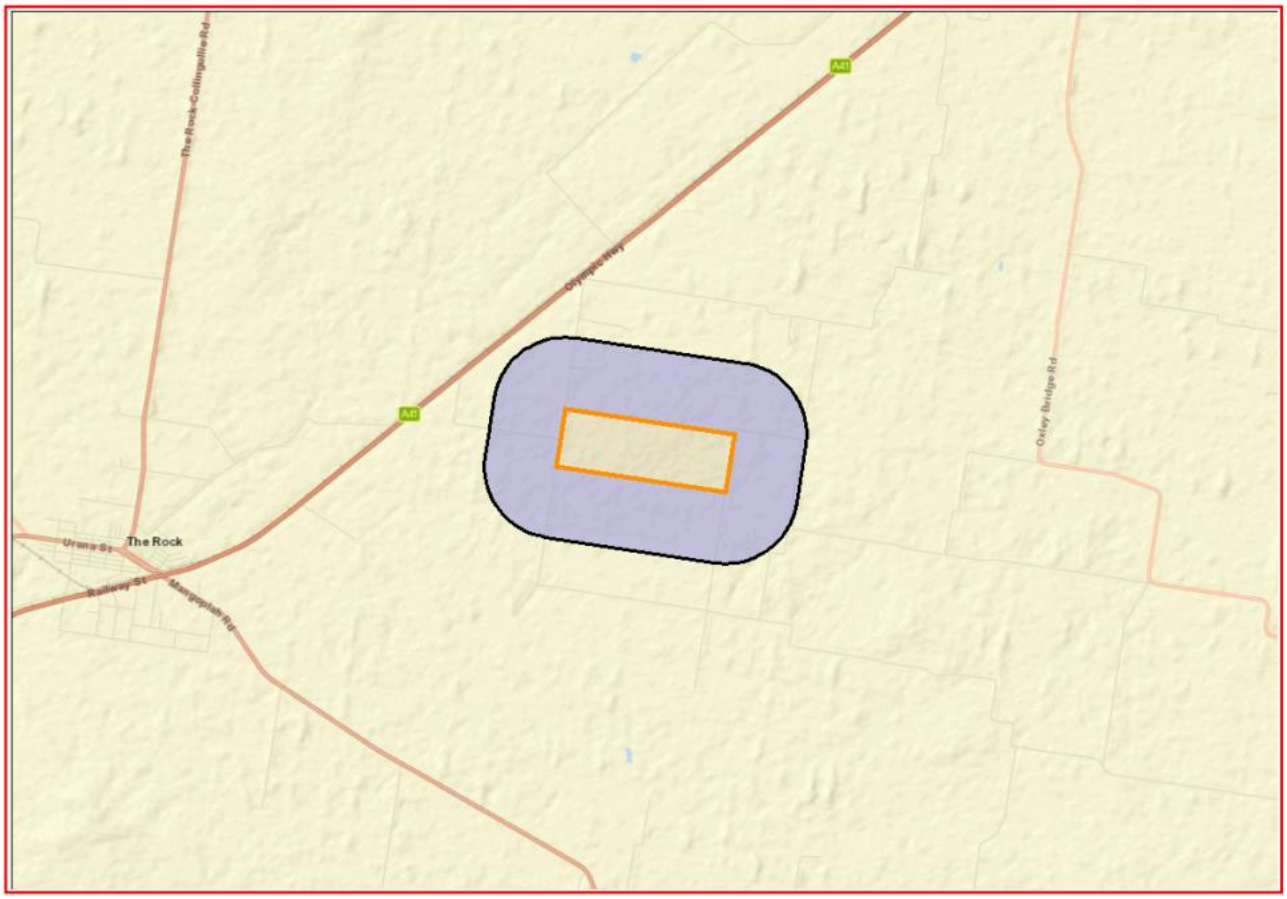


Figure 5-3: AHIMS Search

5.7.2 Historic Heritage

A search for heritage-significant items was conducted under the NSW Heritage Act and the Wagga Wagga Local Environmental Plan. While locally listed items exist in the rural areas of Pearson and Maxwell, including Old Calmsely at 314 Old Station Road, Pearson, and Gillamong at 371 Wattle Hills Road, Maxwell, none are within 3km of the proposed site. Given the absence of non-indigenous heritage and structures with potential heritage value in the vicinity, no heritage-related mitigation measures are recommended for this proposal.

5.8 Bushfire

A Bushfire Assessment (**Appendix F**) has been completed for the proposal. The assessment identifies that the site is located on bushfire prone land, with surrounding vegetation classified as Category 1 and Category 3 on the Bushfire Prone Land Map (refer to Figure **5-4**).

The primary vegetation formations affecting the proposal area are Woodland and Grassland, with the hazardous vegetation identified to the north, west, east, and south of the development area. The effective slope under the classified vegetation ranges from all upslopes and flat land (0°) to downslopes >0-5°. Given the Fire Danger Index of 80 for the Eastern Riverina Region, there is a potential risk of bushfire impact on the proposed development. The presence of electrical infrastructure and battery storage systems could potentially exacerbate fire risks if not properly managed.

The assessment addresses specific considerations for wind and solar farms as outlined in Planning for Bush Fire Protection (PBP) Part 8.3.5, including the design and housing of essential equipment to minimise bushfire impact and risk.

The assessment considered all the elements of bushfire attack and found that the proposal satisfies the aim and objectives of ‘Planning for Bush Fire Protection’ 2019, subject to implementation of the following mitigation measures made by the report.

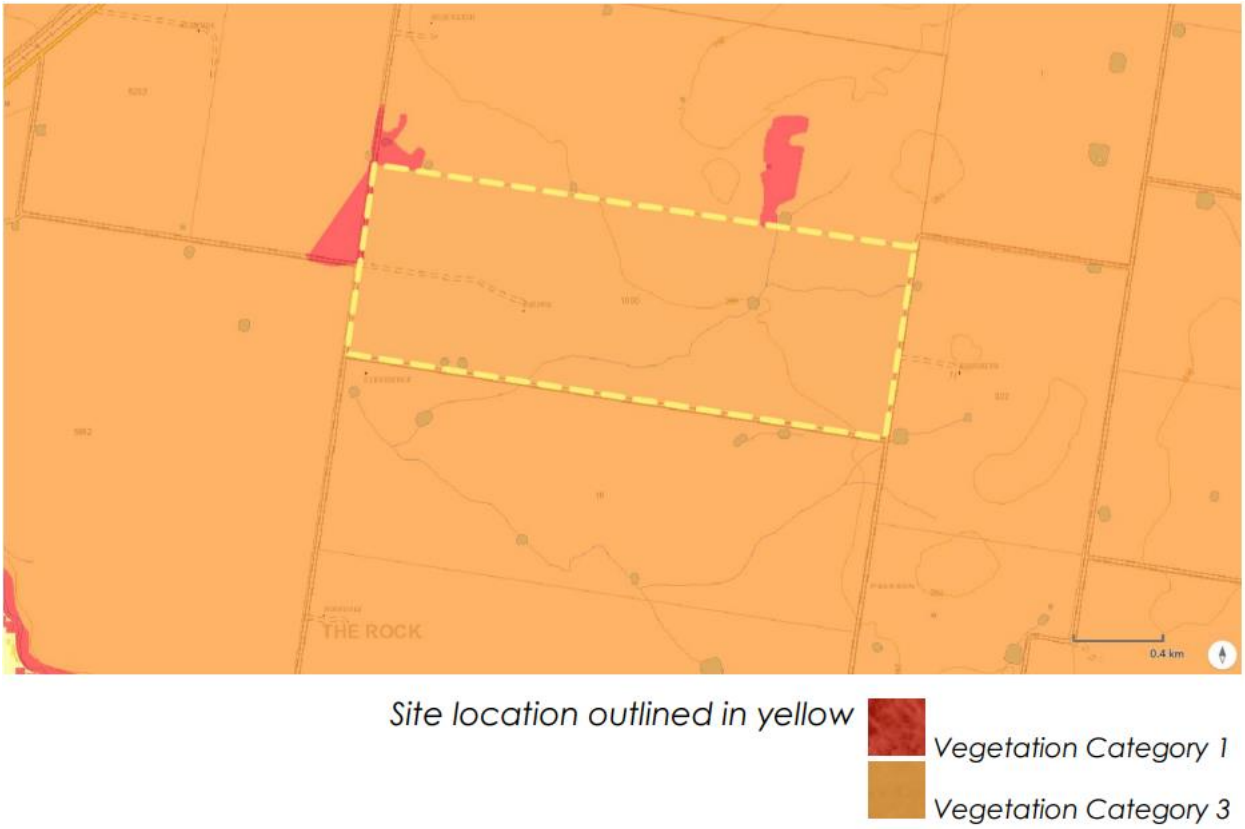


Figure 5-4: Bushfire Prone Land Map

Mitigation Measures

To mitigate bushfire risks, the assessment report recommends the following:

- **Asset Protection Zones (APZ):** At the commencement of the development, and in perpetuity, the curtilage surrounding the subject development and access way shall be managed as an Inner Protection Area Asset Protection Zone (IPA APZ) from the from the proposal for 13m in all directions.
- **Fire Fighting Water Supply:** A 40000L water supply tank is to be provided for a firefighting water supply.
- **Electricity Services:** Where practicable, electrical transmission lines are underground.
- **Storage of Hazardous Materials:** Wherever possible, the storage of hazardous materials will be away from the hazard.
- **Bush Fire Emergency Management and Operations Plan:** A Bush Fire Emergency Management and Operations Plan is to be prepared prior to the commencement of works on site that identifies all relevant risks and mitigation measures associated with the construction and operation of the development. This should include:
  - detailed measures to prevent or mitigate fires igniting
  - work that should not be carried out during total fire bans
  - availability of fire suppression equipment, access and water
  - storage and maintenance of fuels and other flammable materials
  - notification of the local NSW RFS Fire Control Centre for any works that have the potential to ignite surrounding vegetation, proposed to be carried out during a bush-fire fire danger period to ensure weather conditions are appropriate bush fire emergency management planning.

5.9 Electro-magnetic radiation

Extremely low frequency electromagnetic fields (EMF) are a byproduct of electricity generation and use. The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), responsible for monitoring emerging research on EMF exposure's potential health effects, has found no conclusive evidence linking exposure to electric and magnetic fields from powerlines, inverters, or other electrical sources to adverse health outcomes, regardless of proximity. Given this, the proposed solar facility's location is deemed sufficiently distanced from nearby dwellings. As such, no additional mitigation measures are considered necessary.

5.10 Waste Management

The proposal will generate waste predominantly during the construction phase that would typically include off cuts, excess construction material and domestic and putrescible waste (including food waste, bottles, cans and paper). The primary waste will likely result from the establishment and construction works of the facility and installation of the arrays. It is not anticipated that the works will generate substantial amounts of waste providing that the appropriate management and mitigation measures are implemented. Any waste produced through the construction stage will be collected and appropriately stored on site and disposed at a facility which can lawfully accept the waste material produced.

It is expected that the solar farm will be operational for 30 years. Waste generated during operation of the facility is expected to be relatively low given the minimal occupation of the facility and the nature of the proposed activities. Operational waste is anticipated to include occasional waste generated by staff on the site and any excess materials used during management and maintenance works. On site waste storage bins will be provided and collected as required by waste removal contractors. Upon decommissioning all infrastructure, including cabling and panels and mounting frames including footings and inverters would be disassembled and removed from the site.

A preliminary Waste Management Strategy is set out within the table below. This strategy sets out the anticipated waste that will be generated at the construction, operation and decommissioning phases of the development.

Table 5-1 Preliminary waste strategy

Stage	Anticipated Waste Material	Proposed Management
Construction	• Excess concrete from the setting of mounts and footings • Off cuts and excess construction material • Packaging materials including plastic wrapping, cardboard and wooden pallets • Cable reels and other electrical waste • Domestic and putrescible waste (including food waste, bottles, cans and paper) • Unused or spent chemicals	Construction waste will be sorted and stored in stockpiles and skip bins as required, located within a defined laydown area in accordance with the NSW EPA *Waste Classification Guidelines* for recycling and landfill, as follows: **Recycling** Steel & scrap metal Recyclable plastics Cardboard packaging Timber product (incl. cable reels & pallets **Landfill** General Waste Domestic & putrescible waste Non-recyclable plastics Recycling and landfill waste will be collected and taken to off-site waste management facilities which can lawfully accept the waste, as required.
Operation	• Waste resulting from maintenance work, including packaging, and broken equipment • Minor degree of domestic and putrescible waste (including food waste, bottles, cans and paper)	All waste will be stored in bins, which will divide landfill and recycling streams. These waste materials will then be taken to off-site waste management facilities.
Decommissioning	• Photovoltaic modules and supporting poles and mounts, and scrap metal	As with construction, waste generated from the dismantling of the proposal infrastructure will be distributed to separate streams for recycling or general waste.

Stage	Anticipated Waste Material	Proposed Management
	• Glass for panels • Inverters, batteries, transformers and electrical cables • Fencing	Recycling and landfill waste will be collected and taken to off-site waste management facilities which can lawfully accept the waste, as required. The amount of material types that will be recyclable will be determined by the development of the waste recycling industry and their future capacity to process specific materials. Given the anticipated number of operational years, it is expected that the recycling industry will development new technologies and uses, as required.

5.11 Air Quality

The proposal site is currently used for agricultural purposes, likely involving regular tilling, sowing, harvesting, or animal grazing. This agricultural use has degraded much of the groundcover vegetation, leaving the ground exposed. The existing air quality is generally good, typical of rural environments, with potential dust generation from current agricultural activities.

Construction Phase

The construction of the proposal will involve minimal earthworks, including small-scale excavation for footings, ancillary structures, and the establishment of an unsealed internal road. Potential low level dust emissions may result from:

- Limited earthwork activities
- Passage of large vehicles for panel delivery
- Driving machinery for array footings

These impacts are expected to be minimal and short-term, with dust generation primarily a concern during dry and windy conditions.

Operation Phase

The operational phase of the proposal is expected to have negligible impacts on air quality. Potential sources of dust during operation could include:

- Occasional vehicle movements on the internal road network during maintenance visits
- Potential dust from unsealed internal roads

These impacts are anticipated to be minimal and infrequent, with no significant effect on local air quality.

Mitigation Measures

To minimise air quality impacts, particularly dust generation, the following measures will be implemented:

- Minimise vehicle movements to defined paths and laydown areas
- Construct a sealed (paved) entrance/exit point where the site access meets Burkes Creek Road
- Use watering carts to suppress dust as required. Implement regular water spraying on Burkes Creek Road and internal unsealed roads, particularly during dry periods.
- Protect stockpiles of excavated material from wind and vehicle movements
- Ensure all vehicles and machinery are properly maintained to minimise emissions
- Enforce an on-site speed limit for construction vehicles
- Wash down construction vehicles to minimise mud and dirt transportation onto roadways
- Require all trucks carrying materials to and from the site to have their loads covered, preventing dust and debris from being blown off during transit on Burkes Creek Road.

- Clean any tracked dirt on adjacent roadways within 24 hours
- Revegetate and regenerate exposed areas the site with appropriate ground cover species
- Implement maintenance protocols for the internal road.

5.12 Workforce

The proposal is expected to have a positive impact on the local economy through increased workforce demand during construction. The project anticipates a workforce of approximately 10-20 persons on-site during the construction period, with GGE providing management staff and key personnel for site management.

To maximise local benefits and mitigate potential pressure on local services, the project will aim to prioritise hiring local workforce and contractors from the Wagga Wagga LGA and surrounding areas within a 30–60-minute commute. The procurement process will aim to favour local employment for non-management roles, and local businesses will be engaged to support indirect economic benefits such as accommodation and food services.

During operation, the facility will require minimal staffing for regular maintenance and monitoring, with additional local contractors utilised as needed. These measures will ensure the project contributes positively to the local economy while minimising potential strain on local resources and infrastructure. The manageable workforce size should be easily accommodated within the existing local labour market and services, supporting sustainable economic growth in the area.

5.13 Social and Economic Impacts

The social and economic impacts were anticipated based on the existing value of the land, and the anticipated social and economic effects which the proposal will have. These impacts may result from the construction, operation and decommissioning of the proposal. The anticipated potential impacts are as follows:

- Loss of productive agricultural land.
- Alteration of rural landscape character and visual amenity, noise levels and air quality.
- Temporary increase in traffic on roads from construction and delivery vehicles.
- Increased employment opportunities and ongoing benefits to local businesses and suppliers.

The capability of the land was assessed utilising the Land and Soil Capability Mapping for NSW. This mapping system grades land in a scale from 1-8 with 1 indicating slight to negligible limitation, and 8 indicating extreme limitations. The entirety of the subject land, including the development area is located with land capability class 3, indicating “moderate limitations”. Given the scale of the proposal and the minimal ground disturbance, the loss of agricultural value will be minimal.

The nature of the array will leave the majority of the site undisturbed. The proposal will generate employment opportunities and opportunity for business with local suppliers. This will bring economic benefits to the local economy through wages and contracted payments, and other indirect benefits to The Rock township for accommodation and other businesses.

The decommissioning of the facility will restore the agricultural use of the land. It will be ensured that the arrays, other infrastructure and fencing will be appropriately removed to avoid inhibiting any future farming practices.

Resources and labour will be sourced locally from within the Wagga Wagga LGA as much as possible, with a particular focus on utilising workforce and suppliers from The Rock township and surrounding areas. This approach will maximise the economic benefits to the immediate local community.

Overall, the proposal will contribute significantly to the goals of reducing emissions nationwide relating to climate change. It will enhance the local electricity supply capacity within the Wagga Wagga LGA, the

proposal’s scale is substantial enough to make a meaningful impact on local renewable energy generation while being appropriately sized for the rural context of The Rock area.

6. Summary & Conclusion

6.1 Section 4.15 Assessment Summary

6.1.1 Section 4.15 – Evaluation

Section 4.15 of the EP&A Act sets out the statutory matters for consideration against which the proposed development is to be evaluated. The Table below provides an overview of the proposal's consistency with the requirements of Section 4.15 (Evaluation) of the EP&A Act.

Table 6-1 Section 4.15 Assessment Summary

Clause No.	Clause	Assessment
(1)	Matters for consideration—general In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:	
(a)(i)	The provision of: Any environmental planning instrument, and	**Complies** The proposal appropriately responds to the relevant Environmental Planning Instruments. Refer to Section 5 for further details.
(ii)	Any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Director-General has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and	**Not applicable** There are no proposed instruments that are the subject of public consultation that are relevant to this proposal.
(iii)	Any development control plan, and	**Complies** As this proposal is within the RU1 zone, the DCP does contain planning objectives and controls for this zone. The proposal complies with the provisions of the relevant chapters of the DCP. Refer to section 4.9 for further details.
(iiia)	Any planning agreement that has been entered into under Section 7.4, or any draft planning agreement that a developer has offered to enter into under Section 7.4, and	**Not applicable** There are currently no Draft Planning Agreements or Planning Agreements applicable to the development.
(iv)	The regulations (to the extent that they prescribe matters for the purposes of this paragraph), and	**Complies** The proposal appropriately responds to the applicable regulations. Refer to section 4 for further details.
(v)	Repealed	**Not applicable**
(b)	The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,	**Consistent** The proposal will not result in unreasonable impacts on the natural and built environments, or social and economic impacts as detailed within this report. Refer to Section 5 for further details.
(c)	the suitability of the site for the development,	**Complies** The subject site is a largely cleared farming property that contains limited topographical or environmental constraints. There are no land use conflicts that would arise as a result of the proposal, as the proposed site is screened by existing vegetation to the north and west, whilst the farming land to the north, south and west contains only a limited number of dwellings. The application now submitted to Council is for a land use that will be fully contained within the subject land and has been designed in a site-responsive manner mindful of the

Clause No.	Clause	Assessment
		context of the site (i.e. site constraints and existing servicing and public infrastructure assets in the vicinity).
(d)	any submissions made in accordance with this Act or the regulations,	To be considered by Council during assessment.
(e)	the public interest.	**Consistent** The proposed development will have no adverse impact on the public interests.

6.2 Conclusion

Based on the assessment presented in this SEE, the proposal is considered to be an appropriate development for the site. The proposal aligns with relevant state and local planning objectives, particularly those related to renewable energy development and rural land use. The environmental impact assessments conducted across various domains—including biodiversity, heritage, bushfire risk, traffic, noise, and visual amenity—indicate that the project can be implemented with minimal adverse effects on the surrounding environment and community, subject to the implementation of recommended mitigation measures.

The development will contribute significantly to the region's renewable energy goals, supporting the transition to a low-carbon economy while maintaining the area's rural character. It offers economic benefits through job creation and diversification of land use, without compromising the long-term agricultural potential of the site. Given its strategic location, design considerations, and the proposed management strategies, the solar farm and battery storage facility represent a sustainable and beneficial addition to the Wagga Wagga area, balancing environmental protection with economic development.

Appendix A – Design Drawings

Appendix B – Preliminary Construction Environmental Management Plan

Appendix C – Preliminary Risk Screening

Appendix D – Traffic Impact Assessment

Appendix E – Flora and Fauna Assessment

Appendix F – Bushfire Assessment

Appendix G – Pre- lodgement DA Meeting Minutes