habitat

Statement of Environmental Effects

5MW Solar Energy Facility and Associated Infrastructure

1268 Oxley Bridge Road, Uranquinty NSW

JANUARY 2022

Submitted to Wagga Wagga City Council
On behalf of BE Pro UQ Pty Ltd

Prepared for

BE Pro UQ Pty Ltd

Contact

Habitat Planning
409 Kiewa Street
Albury NSW 2640
02 6021 0662
habitat@habitatplanning.com.au
habitatplanning.com.au

Habitat Planning Pty Ltd
ABN 29 451 913 703
ACN 606 650 837

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Contents

List of Figures

List of Tables

1. Introduction

1.1. Overview

This Statement of Environmental Effects (SEE) has been prepared by Habitat Planning on behalf of BE Pro UQ Pty Ltd and is submitted to Wagga Wagga City Council in support of a Development Application (DA) for a 4.95 megawatt electricity generating works and associated infrastructure and works, including single axis tracker solar arrays and battery energy storage system ("the proposal") at Lot 24 and 43 in DP754565 and addressed as 1268 Oxley Bridge Road, Uranquinty.

The DA and this report have been prepared in accordance with the Environmental Planning and Assessment Act 1979 ("EP&A Act") and the Environmental Planning and Assessment Regulation 2000 ("EP&A Regs").

This report addresses the relevant heads of consideration listed under Section 4.15(1) of the EP&A Act and provides an assessment of the proposed development against the relevant Environmental Planning Instruments (EPIs) and other planning controls applicable to the site and to the proposal. It also describes the site, its environs, the proposed development, and provides an assessment of the environmental impacts and identifies the steps to be taken to protect or lessen the potential impacts on the environment.

1.2. The Proponent

BE Pro UQ Pty Ltd is a subsidiary of Bison Energy leading international company specialising in renewable energy. The company has many years of experience in developing, building and operating solar power projects in different countries, such as Germany, Italy, Spain, UK, and Japan, and has been operating in Australia since 2017, with regional offices in Albury. The proponent is currently establishing a series of solar farms across NSW and Victoria.

1.3. Project Justification

The development of renewable solar energy development is well underway in NSW and across Australia. The continued growth and development of solar in regional New South Wales provides a significant boost for these economies and will lead to additional employment and investment.

This development ensures that impacts will be reduced through a number of measures, including:

- Preservation of biodiversity features through use only of heavily cleared and modified rural lands and retaining existing vegetation on the property;
- Minimise impacts to soil and water, through pile driven panel mounts rather than extensive soil disturbance and excavation;
- Preserve agricultural production values through retention of agricultural use of the subject site and enabling the land to be used for agriculture following decommissioning of the use; and
- Minimise visual impacts to neighbours by locating the facility within a smaller footprint and with large setbacks to surrounding roads.

1.4. Pre-lodgement Meeting

A pre-lodgement meeting was held with Wagga Wagga City Council staff on 18 September 2020. At the pre-lodgement meeting the following matters were raised and discussed.

- Visual Impact
- Glare
- Heritage
- Biodiversity
- Drainage
- Agricultural pasture operation
- Decommissioning

These matters have been accordingly addressed where appropriate in this report.

1.5. Supporting Plans and Documentation

This report shall be read in conjunction with the accompanying plans and documentation as listed in **Table 1** below:

Table 1: Supporting Documentation

Appendix	Description	Prepared by
A	Title Documents	N/A
B	Architectural Plan Set	Habitat Planning
C	Biodiversity Assessment	NGH
D	Aboriginal Due Diligence Assessment	NGH
E	Traffic Impact Assessment	Spotto Consulting
F	Landscape Plan & Visual Impact Assessment	Yonder Landscape Architecture
G	Glint & Glare Assessment	Habitat Planning
H	DCP Compliance Tables	Habitat Planning

2. Site Analysis

2.1. Site Location and Context

The subject land to which this application relates is described as Lot 24 & 43 in DP754565 and addressed as 1268 Oxley Bridge Road, Uranquinty. It is located approximately two (2) kilometres south east of the township of Uranquinty.

The location of the site is shown at **Figure 1**.

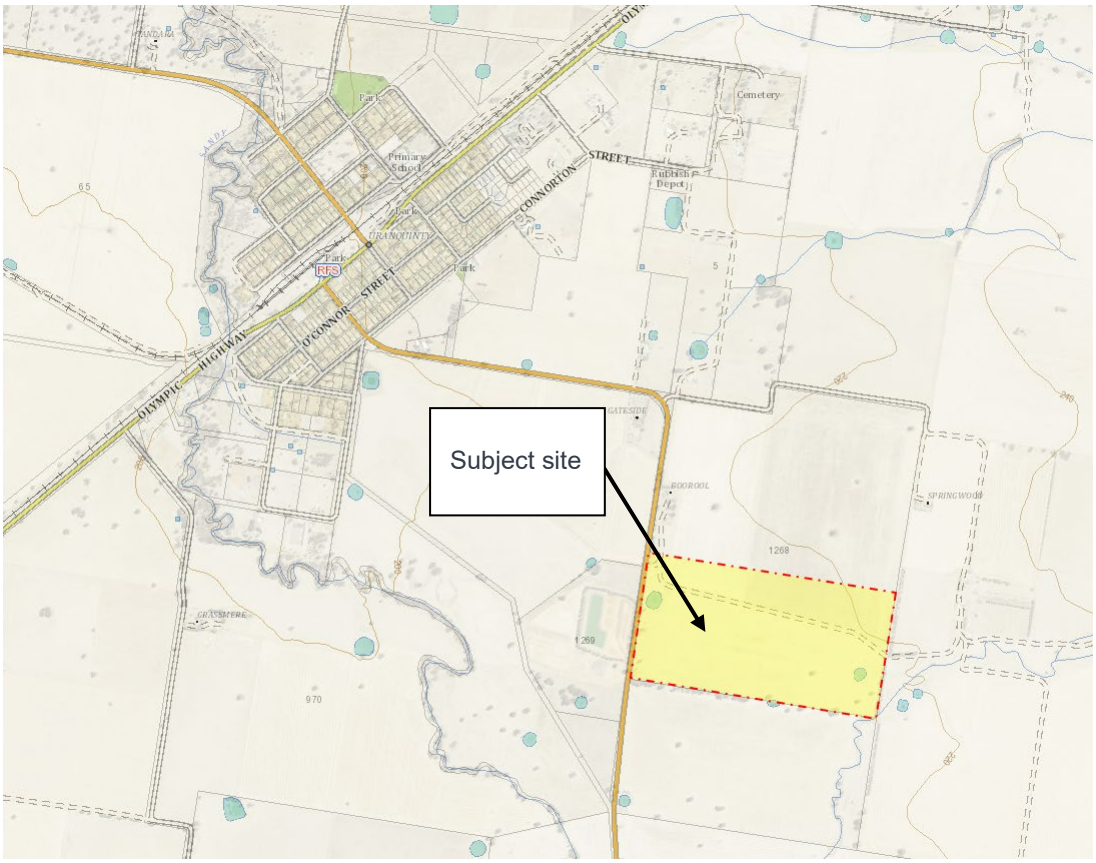

Figure 1 – Context Map

Figure 2 – Aerial Imagery of the subject site (Source: Nearmap)

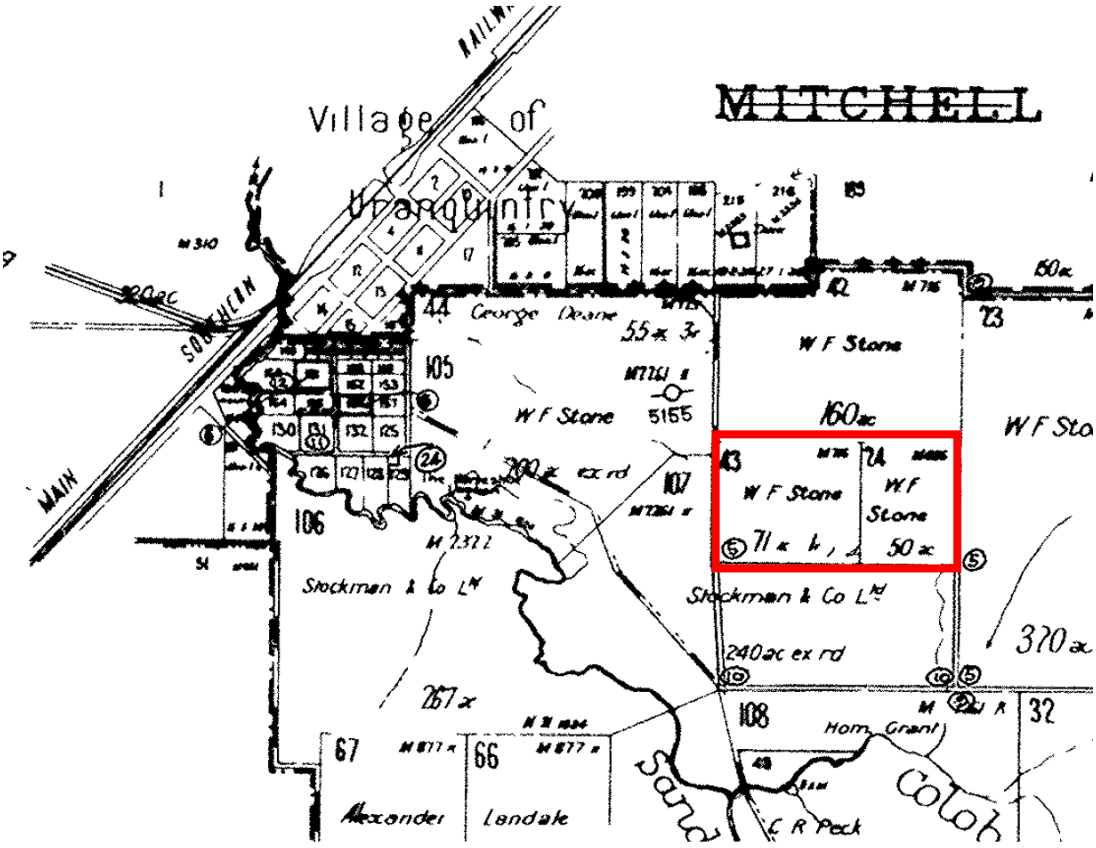

Figure 3 – Extract of DP754565

2.2. Site Description

The land forms a rectangular lot with a depth of 980m (approx.) and a width of 500m (approx.), with a total area of 49.06ha. The land does not contain any existing structures and is used

primarily for broad-acre agricultural purposes including grazing. There is no significant vegetation on the subject site with the exception of a scattered number of trees to the western frontage of the lot that faces Oxley Bridge Road that provide amenity value. The site is improved by general farming infrastructure including fencing, some livestock yards and grain silos and two dams. The site also benefits from access to Oxley Bridge Road to the north west of the lot.

The existing conditions of the property are illustrated by the images below.

Figure 4 – Subject site from the south-west corner looking north east.

Figure 5 – Oxley Bridge Road looking north (subject site to the right)

Figure 6 – Subject site looking east

Figure 7 – Subject site looking north-east (subject site to right of fence)

Figure 8 – Subject site looking south east.

Figure 9 – Southern boundary of subject site looking south west

Figure 10 – Subject site looking west toward Oxley Bridge Road.

Figure 11 – Southern boundary fence looking east

Figure 12 – North western corner of subject site looking toward Oxley Bridge Road.

Figure 13 – Existing site entry looking east from Oxley Bridge Road.

Figure 14 – Subject site looking south east from Oxley Bridge Road.

2.3. Surrounding Development

The property is surrounded by other farming zone properties with similar levels of minimal vegetation and farm infrastructure. The nearest dwelling (not in the same ownership to the subject property) is located approximately 1km to the north east of the subject site. The dwelling is unable to be seen from the site due to several vegetation buffers across other allotments and properties.

To the north of the subject site there are several rural dwellings (750-1000m from the site) and a mix of primary production zoned land used for broad-acre agriculture, cropping and livestock purposes. Similarly, to the east and south this land is also utilised for broad-acre agriculture, cropping and livestock purposes.

To the west of the subject site the land primarily consists of broad acre agricultural land and scattered vegetation. Further to the west the township of Uranquinty is located and contains a mixture of low-density village residential and large lot rural development. Opposite the site to the west on Oxley Bridge Road the Uranquinty Sewerage Treatment works are located on a 20ha allotment.

Figure 15 – Oxley Bridge Road looking south

Figure 16 – Oxley Bridge Road looking north west (sewerage treatment works in background)

Figure 17 – Oxley Bridge Road, looking west

Figure 18 – Oxley Bridge Road looking south west

3. Description of Proposal

3.1. Overview

The proposal seeks to develop a portion of the subject land for solar renewable energy development with capacity of up to 5 Megawatts ("MW") to generate renewable electricity. The proposed facility is to be established within a generally rectangular portion of the subject site of approximately 16.67 hectares, with access from Oxley Bridge Road

The facility will comprise installation of 13,620 solar photovoltaic panels to be mounted in arrays on single axis trackers, cabling from the solar arrays to panel inverters and substation and connection into the local electricity network in the centre of the development area.

The facility will also include construction of unsealed perimeter and internal access tracks, a new main access gate, parking and laydown areas, substation and perimeter fencing.

The proposed facility is expected to take approximately 6 to 12 months to complete construction. It will operate for a period of up to 30 years, after which it will be subject to further operation or decommissioning and removal of all components.

Optimisation is a key requirement in designing a solar facility, being that it will produce a desirable quantity of energy as efficiently and cost effectively as possible. The aim for this system is to efficiently use the available land to generate the most amount of power possible.

Section 3.2 below summarises the key components of the project and **Section 3.3** and **Section 3.4** details the construction and operational stages of the proposal respectively. **Section 3.5** details the components that make up the proposed solar PV system. The remaining sections at **Section 3.8** to **Section 3.13** describe the various components of the development in further detail.

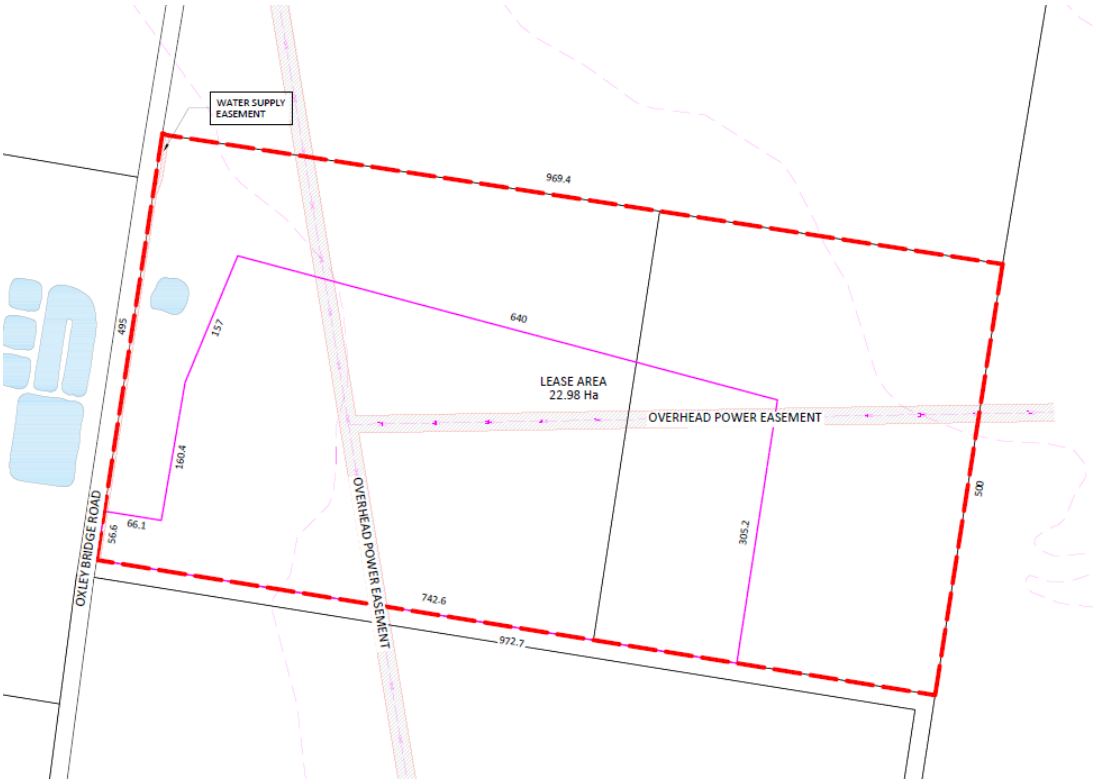

Figure 19 – Proposed Site Plan

3.2. Project Details

Specifically, the proposal involves:

- New rural-type road access point and associated works from Oxley Bridge Road at the south western boundary
- Temporary road access for construction purposes and associated works from Oxley Bridge Road at the north western boundary
- Variable width (4-6m) internal access tracks.
- Installation of approximately 13,620 solar panels, to be mounted on single axis trackers and pile driven into the ground
- Aboveground and underground cabling between panel arrays to combiner boxes and inverters
- Central inverters within the panel arrays on skids to invert DC power from the panel arrays into AC power
- Substation and underground cabling and electrical connections between the panel inverters/substation
- Laydown, construction staging, waste and parking areas at the western extent of the development;
- Relevant stormwater infrastructure;
- Provision of internal turning area sufficient for construction vehicles;
- 3-5 metre wide landscaping to sensitive perimeters of the development;
- Perimeter landscaping to the northern, eastern and western boundaries
- Perimeter security fencing (2 metre height) comprising steel posts and transparent mesh

A proposed site plan of the development is attached and reproduced at **Figure 19** above.

3.3. Construction Summary

The proposed solar panels are to be mounted on a steel structure with mounting posts to be driven into the ground using a vibrating pile driver. The piles will be driven approximately 1 to 2.5 metres into the ground, as to be confirmed by a geotechnical and structural engineer.

The internal site cabling will be installed by trenching up to 1 metre in depth, laying of electrical wiring and conduits and backfilling and compacted to natural ground level.

Combiner boxes and the proposed central power station are to be installed above ground. The inverters and combiner boxes are to be established at the end of panel arrays, with the larger inverters installed on pre-built skids that enable easy placement on the site.

During construction there is expected to be up to 50 to 100 personnel undertaking various construction processes and will vary throughout the total construction process. The works are to be carried out between the hours of 7am to 6pm Monday to Friday and 8am to 1 pm on Saturdays. The construction is expected to take approximately 6 to 12 months.

3.4. Operational Summary

The following summarises the operational matters of the proposed solar facility once constructed and energised. The operational phase of the facility is expected to be up to 30 years.

Table 2 – Operational requirements of the proposed new use.

Operational Item	
Hours of operation	The facility will generate power during daylight hours, with all infrastructure being operational at all times. Staff will only generally access the site during daytime periods. In emergency events, staff may be required to access the property.
Operations & Management	Daily inspection and monitoring of the facility by full-time employed staff. Maintenance and operational checks daily/weekly/monthly as per on-site operational guidelines Off-site maintenance crews and contractors to be employed as required to undertake repairs.
Workforce	2 persons are to be employed for ongoing operation of the site. Not all personnel will be on-site at any one time.
Traffic	On average, the operation of the facility will generate two vehicles per day, a maximum of seven days per week, resulting in 14 vehicles per week. The rate of traffic expected form the site will be one vehicle per hour in the morning peak period, travelling inbound to the site; and one vehicle per hour in the afternoon peak period, travelling outbound from the site. Very infrequent deliveries may be necessary to the site by large vehicles delivering parts, plant or equipment. Access will be required from time to time by TransGrid to the substation on site. Internal access will be enabled by the internal access track.
Car parking	A parking area is to be established adjacent to the proposed substation and will be accessible from the internal access track.
Maintenance	Solar panels may require cleaning up to two times during per year. Cleaning will be undertaken with water, to be sourced from water trucks brought to site. Any repairs to panels or other equipment or infrastructure will be undertaken on an as needs basis either by employed staff or contractors.

Operational Item	
Security	The site will be secured by fencing and gate access. A post and wire fence will be established to the external boundaries of the development area, securing the access and substation. An internal fence will be erected to secure the solar panel arrays and other equipment. The facility may utilise CCTV monitoring of access points and substation areas. Security patrols of the property may also be carried out by contractors.
Lighting	Directional flood lighting to be provided to substation and surrounding parking area.
Noise sources	Approximately 40db from solar inverters. Intermittent traffic and machinery noise as a result of movements to and from the property and maintenance works.
Storage	There will be no storage of hazardous or dangerous goods or materials on site during the operation of the Project
Waste	Minimal waste is to be generated during operation and will be limited to: General waste from site office, including paper, plastic and glass and putrescible waste including food waste, bottles, cans and paper; Waste resulting from maintenance work, including packaging, and decommissioned/removed equipment. All waste will be stored in bin or otherwise stockpile areas near the site office, which will divide waste into landfill and recycling streams. These waste materials will then be taken to off-site waste management facilities. A detailed Waste Management Plan (WMP) to be prepared and endorsed prior to works commencing on site, which will include management of any waste generated during operation.

3.5. Solar Infrastructure

3.5.1. Photovoltaic Panel Arrays

It is proposed to install approximately 13620,500 photovoltaic modules (solar panels) which will have a multicrystalline, monocrystalline, or thin film technology. The panels are to be arranged in groups which are known as arrays. The proposal will have 30 modules per string and a total of 454 strings across the development area. Proposed plans attached indicates the alignment of the proposed arrays on the property.

The solar panels primary function is to absorb the sunlight received and convert this into electricity so the panels are designed to reflect as little light as possible. The panels also absorb the majority of sunlight received (approximately 80-90%) and only reflect a small amount, resulting in a rate of reflection that is less than other common rural surfaces.

The proposed PV panels are to be installed on a single axis ground mounted tracker system to follow the sun from east to west and obtain the maximum solar exposure. The panels are proposed to tilt in a single axis for 60 degrees beyond horizontal in either direction. The structure will be fixed in placed by pile driven posts at the end of each 'string' being approximately 20 metres.

Proposed PV Panels will be arranged in 'single portrait' orientation (i.e. end to end). Each proposed PV panel type used in the facility be approximately 2.1 metres x 1 metre and will be mounted onto the steel tracking structure.

The final height of the structure, including panels (when at full 60 degree tilt) and allowing for a ground clearance of at least 0.5 metres, will be approximately 2.6 metres from natural ground level. This final height is dependent on the final clearance needed beneath the panels.

Figure 20 – Example of a typical single axis tracker system with PV modules mounted in single panel portrait orientation (1P configuration)

3.6. 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 two inverter units 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.

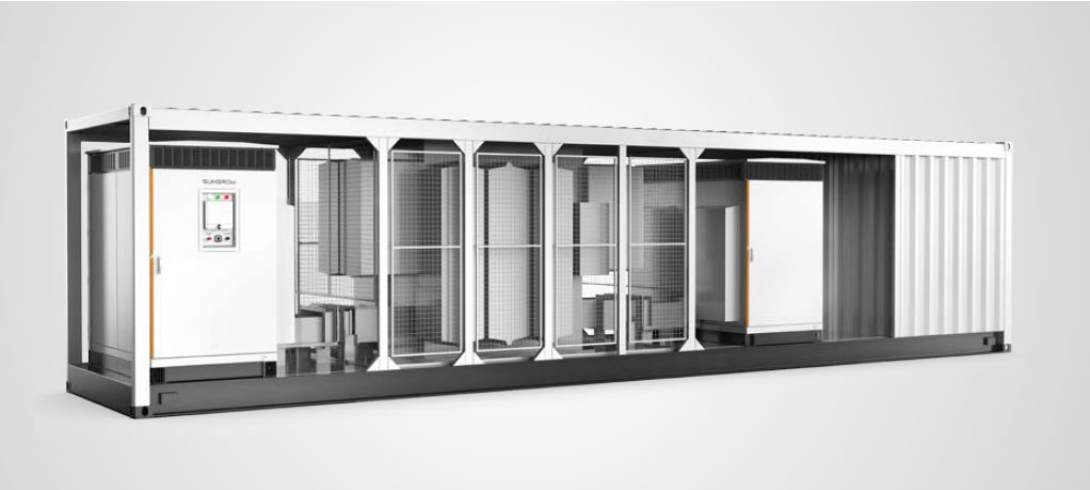

Figure 21 – Typical Power Station Unit to be installed on site (SG4950HV-MV) (Source: Sungrow)

3.7. Battery Energy Storage System

The proposal will include a Battery Energy Storage System (BESS) will consist of four (4) units placed adjacent to one another and the power station. During operation, electricity flows from the solar farm power conversion unit via underground electrical cabling to each battery container. The power flow is controlled and directed through the individual battery terminals, charging the internal battery storage cells. During discharge from the battery, the process is reversed with power flows from the battery cells back through an electrical cable connection to the power conversion unit.

The BESS units will take the form of a prefabricated container unit delivered and placed on site. Each unit will have dimensions of 12.2 metres x 2.5 metres (width) x 2.9 metres (height). The units will each have a battery capacity of 3,584 kWh and a voltage range of 1,080-1,440 V. Each unit will also include heating, ventilation and air conditioning, and will be fitted with a Novec1230 fire suppression system.

Figure 22 – Typical BESS unit to be installed within the facility

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 substation.

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.

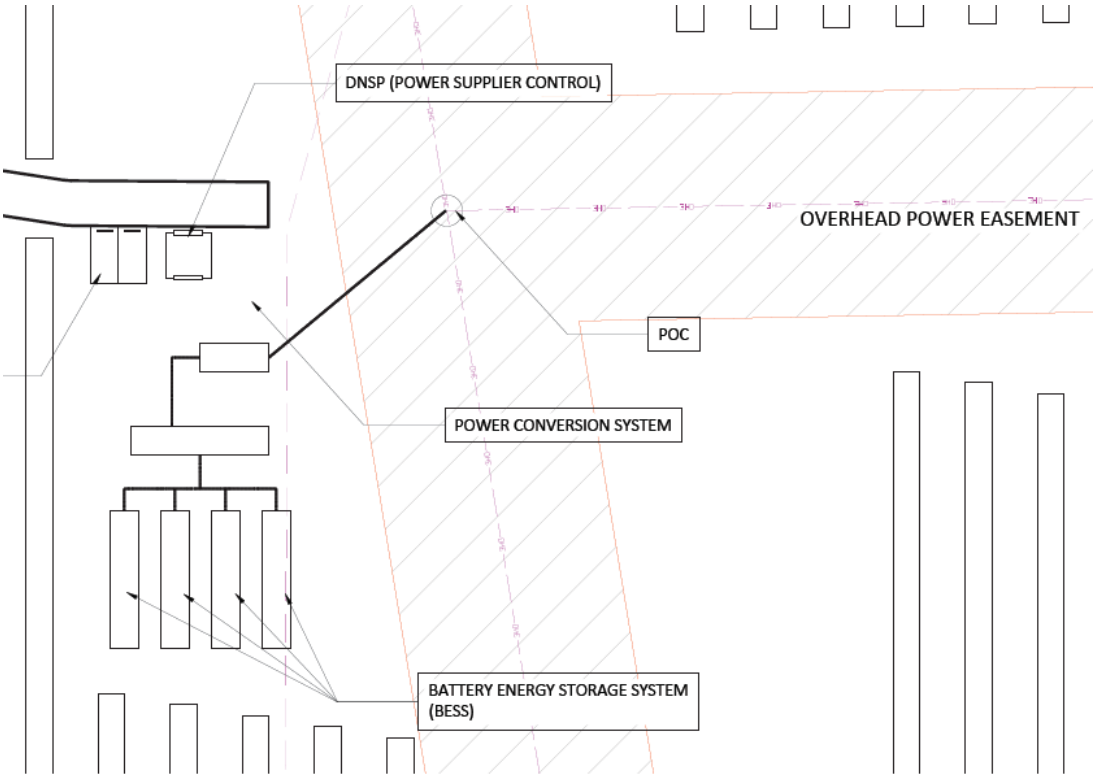

Figure 23 – Concept layout of proposed substation area and proposed point of connection

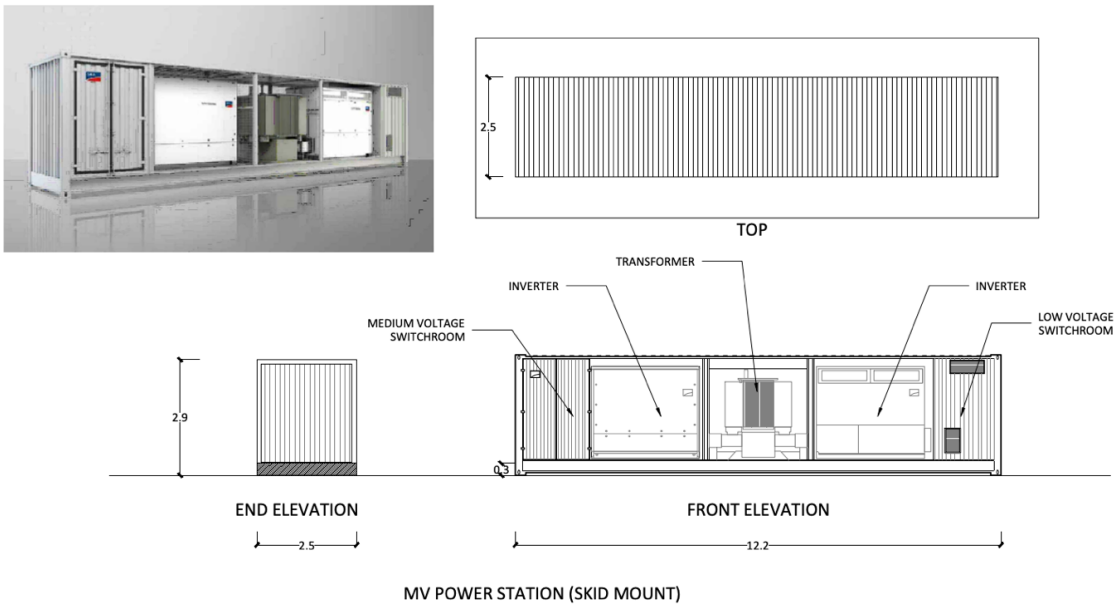

Figure 24 – Elevations showing the proposed central Power Station unit containing the transformer and inverter for connection to the 22kV power line

3.8. Property Access and Internal Movements

Primary access to the site for both construction and operational stages is to be from Oxley Bridge Road, approximately 3km south east of the Olympic Highway. This access will utilise an existing farm gate access which is used by the landowner to access the rural property. The new access point (further to the south) is to be constructed to an all-weather access rural standard crossover, capable of accommodating construction and operational vehicles to the site.

Oxley Bridge Road is a sealed rural road with a suitable sealed carriageway and a wide road reserve. It has excellent sight distances to the north and south, with a very flat and long approach in either direction. There are no visual obstructions at either approach.

Internal all-weather access tracks are to be constructed within the site, with a main access extending north to east from the Oxley Bridge Road entry towards the solar arrays. A further network of internal tracks will extend along the perimeter of the property and within the panel arrays as shown on the submitted plans.

The internal track network will be of a gravel standard and capable of accommodating heavy vehicles and ensuring all vehicles to enter and exit the site in a forward direction. The new access will be constructed to a standard capable of accommodating all construction and operational vehicles.

Access tracks will allow for two-way movements and will be unsealed and formed to allow all-weather access by site operation and maintenance crews.

3.9. Stormwater and Drainage

To adequately collect, convey and discharge any runoff from the site, the development will include swale drainage along select internal access roads, in particular the main 6m wide access road that runs north/south through the proposed site.

Stormwater generation across the site is considered to not result in any significant additional impact above and beyond the existing run-off that would have been expected across the site under its current use. The proposed development is not expected to exacerbate any substantial increase to any current flows and can be managed on site. Detailed design of the relevant stormwater infrastructure required will be undertaken prior to the issue of a construction certificate and is expected to be conditioned on any future development consent.

Any runoff from the gravel access road will be collected and conveyed via the new swale drains. This swale drain network will be designed to collect and discharge runoff from the property at pre-developed levels.

3.10. Maintenance

Once operational, the facility will involve daily monitoring of plant and all associated infrastructure which will be carried out by staff. Staff will access the site on a daily basis for monitoring and management of equipment.

Where required, minor repairs and maintenance of components of the facility will be undertaken by either staff or contractors. Other occasional maintenance tasks will include washing panels, controlling grass and weeds on site, maintaining internal access tracks, general waste collection and disposal.

Regular inspections of the site will be carried out to ensure that grassland is managed to reduce the risk of bushfire to surrounding land and to control weeds. Mowing or slashing between rows of PV panels and in the area immediately surrounding the arrays would be carried out as required

3.11. Landscaping

The proposal includes nominated landscape buffers to the north, west and southern perimeters of the site. It is proposed to establish the landscape buffers along these boundaries and integrate with an existing planting strip to the south and east of the site. The landscaping areas are intended to reduce visual impacts from potential sensitive receivers and the adjacent Oxley Bridge Road.

The proposed landscape outcome is intended to enable a long term landscaping solution whereby it will suitably accommodate the development in the short term and also enable the site to be sustainably returned to rural activities in the event that the solar facility is decommissioned in the future.

The landscaping for the site is detailed by the attached Visual Impact Assessment and Landscape Plan.

3.12. Security

Security of the solar facility will be critical to operations and ensuring safety of the public.

Existing perimeter rural post and wire fencing will be retained and repaired as necessary, to enclose the access tracks to the proposed substation. New 2.4 metre-high security fencing is to be established inside the lease area and set behind the proposed landscape buffers, to enclose the proposed solar panel arrays.

All proposed access gates will have a double gate with a 6 metre wide opening, with the fencing and gates to have a consistent height.

No security lighting will be installed for the facility.

3.13. Decommissioning & Rehabilitation

The facility is intended to remain in operation for a period of up to 30 years in order to contribute to the sustainable electricity power supply to the state of NSW. This period of time 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 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.

If necessary, a condition of consent may be imposed that requires a decommissioning plan to be prepared and approved prior to decommissioning.

4. Planning Assessment

Under Section 4.15(1) of the EP&A Act when considering an application for development, the consent authority must take into consideration the relevant environmental planning instruments. This section details and responds to the relevant planning framework applicable to the proposal.

4.1. Applicable Environmental Planning Policies, Instruments and Controls

- Environmental Planning and Assessment Act 1979
- Environmental Planning and Assessment Regulation 2000
- State Environmental Planning Policy No. 55 – Remediation of Land
- State Environmental Planning Policy (Infrastructure) 2007
- State Environmental Planning Policy (Koala Habitat Protection) 2021
- State Environmental Planning Policy (Activation Precincts) 2020
- Wagga Wagga Local Environmental Plan 2010
- Wagga Wagga Development Control Plan 2010

Compliance with the applicable legislation and policies is discussed below

4.2. 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 *Biodiversity Conservation Act 2016* (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.

The primary requirement of the BC Act is to determine if a proposed development is considered *likely to significantly affect threatened species*. According to clause 7.7(2), this is if:

a) *The development is likely to significantly affect threatened species or ecological communities, or their habitats, according to the test in section 7.3, (5-part Test) or*
b) *The development exceeds the biodiversity offsets scheme threshold if the biodiversity offsets scheme applies to the impacts of the development on biodiversity values, or*
c) *The development is carried out in a declared area of outstanding biodiversity value.*

As assessment has been conducted against the BC Act Thresholds in the supporting Biodiversity Assessment. No thresholds have been exceeded and a BDAR is not required.

The proposed development does not exceed the Biodiversity Offset Scheme (BOS) and is not expected to have a significant adverse impact on a threatened species or ecological community. Direct impacts to native vegetation have been avoided by the proposal where possible. Given the local context and small area of native vegetation to be impacted, the works are considered unlikely to have a significant environmental impact.

The Biodiversity Assessment report is attached and addresses these matters in detail.

4.3. Environmental Planning & Assessment Act 1979

The Environmental Planning and Assessment Act 1979 ("the EP&A Act") is the principal piece of legislation governing the use and development of land in NSW. The objects of the Act are:

(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,
(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,
(c) to promote the orderly and economic use and development of land,
(d) to promote the delivery and maintenance of affordable housing,
(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,
(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),
(g) to promote good design and amenity of the built environment,
(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,
(i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,
(j) to provide increased opportunity for community participation in environmental planning and assessment.

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

4.3.1. 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 matters for consideration under Section 4.15(1) are as follows:

*(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) the provisions of—

(i) any environmental planning instrument, and

(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 Planning Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and

(iii) any development control plan, and

(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

(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph),

(v) (Repealed)

that apply to the land to which the development application relates,

(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,

(c) the suitability of the site for the development,

(d) any submissions made in accordance with this Act or the regulations,

(e) *the public interest.*

The matters for consideration identified in Section 4.15(1) of the EP&A Act 1979 are addressed in the following section. Subsections (b) to (e) of Section 4.15(1) of the EP&A Act 1979 are addressed in **Section 5** of this Statement of Environmental Effects.

The proposed development requires consent under Section 4.2 of the EP&A Act. This Statement of Environmental Effects and supporting documentation addresses the matters to be considered under clause 4.15 of the Act.

4.3.2. Consent Authority

Section 4.5 of the EP&A Act establishes the applicable consent authority. The proposal meets the thresholds for Regionally Significant Development (refer below). As such the development application is to be determined by the Regional Planning Panel who is the relevant consent authority. Wagga Wagga City Council will however undertake the relevant assessment and administration functions.

4.3.3. 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 'electrical generating works' clause 18(1)(c) of Schedule 3, Part 1 of the Environmental Planning and Assessment Regulation 2000 (EP&A Regs).

4.3.4. Integrated Development

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

4.4. State Environmental Planning Policy No. 33 – Hazardous and Offensive Development

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33) 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 proposed battery units are described as ‘dry batteries’ and contain lithium ion material for storage purposes. The Department of Planning (2011) guideline “Applying SEPP 33” provides a risk screening procedure to facilitate determination of whether a proposed development is applicable under the SEPP. Clause 12 of SEPP 33 requires that any proposal which may comprise a potentially hazardous development must be supported by a Preliminary Hazard Analysis (PHA). Lithium ion batteries are identified as a (Class 9) dangerous good and there is

no threshold quantity for this category of material. Having regard to this, a PHA is not required under the guidelines of SEPP 33.

4.5. State Environmental Planning Policy No. 55 – Remediation of Land

State Environmental Planning Policy No. 55 – Remediation of Land ("SEPP 55") sets out considerations relating to land contamination across the state. The SEPP intends to establish 'best practice' guidelines for managing land contamination through the planning and development control process.

In the context of this application, clause 7 of SEPP 55 generally requires that consideration be given to whether or not land proposed for development is contaminated and fit for use for its intended purpose. The SEPP requires the consent authority to consider whether the subject land is contaminated when determining a development application. If the land is contaminated, the consent authority must be satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out.

The property has been cleared and farmed for many years and is not known to be listed on a Council register of potentially contaminated land. There has been no known historical usage that would cause the land to be contaminated. The use of farm chemicals such as pesticides and fertilisers are not considered to contaminate soils to the extent that mediation is required. It is considered that a preliminary investigation is not required for the development of a solar farm.

The proposed development is not for residential purposes and will be for an infrastructural use, therefore no remediation or further investigation is required for this application. Future change of use of the site may trigger the requirement for remediation. The proposed site is considered to be suitable for the use as 'electricity generating works' having regard to the provisions of the SEPP.

4.6. State Environmental Planning Policy (Infrastructure) 2007

The purpose of the State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) is to facilitate the effective delivery of infrastructure across the state. The policy identifies environmental assessment categories for types of infrastructure, matters to consider when assessing development adjacent to infrastructure and provides for consultation with relevant public authorities.

ISEPP contains provisions relating to approval processes and assessment requirements for infrastructure proposals according to the type or sector of infrastructure. It outlines land use zones where types of infrastructure are permissible with or without consent and identifies certain works as exempt and complying development.

The provisions of the State Environmental Planning Policy (Infrastructure) 2007 are relevant to the proposed development. Under Clause 34(1)(b), electricity generating works using solar as the fuel source are permitted with consent on land in a prescribed rural, industrial, or special use zone.

"34 Development permitted with consent

(1) Development for the purpose of electricity generating works may be carried out by any person with consent on the following land—

(b) in any other case—any land in a prescribed rural, industrial or special use zone."

The development site is zoned RU1 Primary Production, which is a prescribed zone for the purposes of clause 34(1)(b) of the ISEPP. According to clause 8 of the ISEPP, the above provisions prevail over any inconsistency in any other planning instruments, including the Wagga Wagga LEP 2010. As such, the proposed development is permitted with consent under the provisions of the ISEPP.

There are several Clauses under ISEPP that trigger referral and concurrence matters. These are addressed below for consideration.

Table 3 – ISEPP – matters for consideration

Matter for consideration	Response
Clause 45 – Determination of development applications – other development	This clause applies to a development application (or an application for modification of a consent) for development comprising or involving any of the following— *(a) the penetration of ground within 2m of an underground electricity power line or an electricity distribution pole or within 10m of any part of an electricity tower,* *(b) development carried out—* *(i) within or immediately adjacent to an easement for electricity purposes (whether or not the electricity infrastructure exists), or* *(ii) immediately adjacent to an electricity substation, or* *(iii) within 5m of an exposed overhead electricity power line,* *(c) installation of a swimming pool any part of which is—* *(i) within 30m of a structure supporting an overhead electricity transmission line, measured horizontally from the top of the pool to the bottom of the structure at ground level, or* *(ii) within 5m of an overhead electricity power line, measured vertically upwards from the top of the pool,* *(d) development involving or requiring the placement of power lines underground, unless an agreement with respect to the placement underground of power lines is in force between the electricity supply authority and the council for the land concerned.* **Comment:** Referral under Clause 45 will be required to the relevant electricity supply authority as the development proposes to connect to the existing 22kV line which traverses the subject site. Before determining a development application, the consent authority must notify the relevant electricity supply authority and take consideration of any comments made by this authority.

Matter for consideration	Response
Clause 101 – Development with frontage to a classified road	The objectives of this clause are— *(a) to ensure that new development does not compromise the effective and ongoing operation and function of classified roads, and* *(b) to prevent or reduce the potential impact of traffic noise and vehicle emission on development adjacent to classified roads.* **Comment:** The subject land does not front a classified road. It is considered that referral and consideration under Clause 101 is not required.
Clause 104 – Traffic generating development	This clause applies to development specified in Column 1 of the Table to Schedule 3 that involves— *(a) new premises of the relevant size or capacity, or* *(b) an enlargement or extension of existing premises, being an alteration or addition of the relevant size or capacity.* **Comment:** The following metrics apply to the proposed development: • *"any other development' with access to a road (generally) specifies 200 or more motor vehicles an hour.* As the proposed solar facility does not meet these thresholds, the development is not classified as 'traffic-generating development'.

4.7. State Environmental Planning Policy (State and Regional Development) 2011

State Environmental Planning Policy (State and Regional Development) 2011 ("the SRD SEPP") identifies whether a development is regarded State significant or regionally significant development.

The aim of this policy is to identify development that is state or regionally significant and to confer functions on the relevant Regional Planning Panel to determine certain development applications. Schedule 7 of the SEPP identifies circumstances to which the subject application triggers the requirement for the development application to be determined by a Regional Planning Panel.

Clause 20 of Schedule 1 identifies electricity generating works and heat and co-generation state significant development and identifies development that:

> *Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that—*

a) *has a capital investment value of more than $30 million, or*
b) *has a capital investment value of more than $10 million and is located in an environmentally sensitive area of State significance.*

The proposal does not meet the threshold for state significant development as per the above.

Part 4, Clause 20 of the SRD SEPP declares what is to be considered regionally significant development. Furthermore, Clause 20 of Schedule 7 of the SRD SEPP refers to "Private infrastructure and community facilities over $5 million" and sets out the following considerations:

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, child care centres, community facilities, correctional centres, educational establishments, group homes, health services facilities or places of public worship.*

As the proposed development has a capital investment of greater than $5 million (but less than $30 million) and comprises an electricity generating works, the proposal is identified a regionally significant development and the relevant provisions for regionally significant development therefore apply.

4.8. State Environmental Planning Policy (Koala Habitat Protection) 2020

This Policy aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline—

(a) by requiring the preparation of plans of management before development consent can be granted in relation to areas of core koala habitat, and

(b) by encouraging the identification of areas of core koala habitat, and

(c) by encouraging the inclusion of areas of core koala habitat in environment protection zones.

The policy applies to the subject land as it is located in the RU1 Primary Production zone and the Wagga Wagga Local Government Area is listed as a local government area specified in Schedule 1 of *State Environmental Planning Policy (Koala Habitat Protection) 2021.*

Part 2 of the SEPP sets out development controls relating to koala habitats. Clause 7 sets out where the part applies as specified below;

"This part applies to the land -

a) *that is land to which this Policy applies, and*
b) *that is land in relation to which a development application has been made, and*
c) *that, whether or not the development application applies to the whole, or only part, of the land—*
    i. *has an area of more than 1 hectare, or*
    ii. *has, together with adjoining land in the same ownership, an area of more than 1 hectare."*

In this instance, this clause applies as the development proposed has an area of more than 1 hectare and is also in the same ownership of adjoining land that has an area of more than 1 hectare.

Part 2 of the SEPP specifies the steps for a consent authority consideration including the identification of whether the land is potential koala habitat, core koala habitat and guidelines and matters for consideration.

Clause 8(1) states that "*before a council may grant consent to a development application for consent to carry out development on land to which this Part applies, the council must be satisfied as to whether or not the land is a potential koala habitat."* Furthermore, Clause 8(2) states that: *"The council may be satisfied as to whether or not land is a potential koala habitat only on information obtained by it, or by the applicant, from a person who is qualified and experienced in tree identification."*

The application is supported by a Biodiversity Assessment undertaken by NGH. The report is attached and concludes that there will be no impact to koala feed tree species due to the only Eucalyptus species present within the proposal area having a DBH of less than 20cm. The proposal is considered to have low or no direct impact to the Koala.

4.9. Wagga Wagga Local Environmental Plan 2010

Wagga Wagga Local Environmental Plan 2010 ("the LEP") is the principal planning instrument that guides development within the LGA. The below provides an overview of consistency and compliance of the proposal against the relevant provisions.

The applicable provisions of the LEP are:

- Clause 2.3 – Zone objectives and Land Use Table
- Clause 5.10 – Heritage conservation
- Clause 7.3 – Biodiversity
- Clause 7.1A – Earthworks

4.9.1. Land Use and Permissibility

The subject site is zoned RU1 – Primary Production under the LEP. The objectives of the RU1 zone are as follows:

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*
- *To encourage diversity in primary industry enterprises and systems appropriate for the area.*
- *To minimise the fragmentation and alienation of resource lands.*
- *To minimise conflict between land uses within this zone and land uses within adjoining zones.*
- *To foster strong, sustainable rural community lifestyles.*
- *To maintain the rural landscape character of the land.*
- *To allow tourist and visitor accommodation only where it is in association with agricultural activities.*

The objectives of the RU1 zone generally refer to productive use of the land. Although the proposed solar facility does not directly relate to a productive use, it will not compromise the agricultural potential of the broader property or the surrounding rural properties. The nature of the solar farm is such that it will only occupy a small portion of the total agricultural property and will not substantially degrade the land, which can be returned to agricultural uses after decommissioning.

The proposed development is defined as *"electricity generating works"*. Under the RU1 Primary Production land use table of the LEP, the proposal is permitted with consent in this zone.

The proposal is additionally permitted with consent under clause 34(1)(b) of the Infrastructure SEPP as described in **Section 4.6** above.

The term *"electricity generating works"* is defined in the Standard Instrument as follows;

> *"electricity generating works means a building or place used for the purpose of—*
>
> *(a) making or generating electricity, or*
>
> *(b) electricity storage."*

This definition is consistent across both the relevant LEP and the ISEPP.

4.9.2. 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.

Similarly, matters regarding Aboriginal Cultural Heritage have also been investigated. An aboriginal due diligence assessment has been prepared and is attached. The due diligence concluded that *"It is unlikely that the proposed development will impact upon Aboriginal objects. There were no mature trees located within the proposed development footprint, no areas of PAD identified and the levels of ground disturbance evident identified a low potential for stone artefacts to remain".* It is therefore considered matters regarding Aboriginal cultural heritage have been considered and satisfied.

4.9.3. Clause 7.1A – Earthworks

The proposed development would involve earthworks during the construction phase associated with installing the solar array and ancillary infrastructure, as outlined in **Section 3** of this report.

Clause 7.1A of the LEP refers to earthworks and aims to ensure that earthworks for which development consent is required will not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land.

This clause states that development consent is required for earthworks unless the earthworks are exempt development under this Plan or another applicable environmental planning instrument, or they are ancillary to development that is permitted without consent under this Plan or to development for which development consent has been given. The proposal includes the trenching of the site for installation of subsurface cabling, which may extend to a depth of up to 1 metre.

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.

Overall, the earthworks required include minimal disturbance and are not considered to result in any significant adverse impacts on drainage structure or soil stability. The site is very flat and the works are not located in an area of instability or close to main watercourses. The impacts in regard to soil, as well as the proposed mitigation measures, are addressed in **Section 5** of this report.

4.9.4. Clause 7.3 – Biodiversity

The provisions under Clause 7.3 Biodiversity under the Wagga Wagga LEP 2010 are relevant to the proposal as the land is partly identified as containing 'Biodiversity'. Two small sections immediately adjacent to the proposal area is identified on the 'Terrestrial Biodiversity Map' as "Biodiversity" (see **Figure 25** below).

Under the subject clause development consent must not be granted to development on land to which this clause applies unless the consent authority has considered the following matters—

(a) any potential adverse impact of the proposed development on any of the following—

i. a native vegetation community,

ii. the habitat of any threatened species, population or ecological community,

iii. a regionally significant species of plant, animal or habitat,

iv. a habitat corridor,

v. a wetland,

vi. the biodiversity values within a reserve, including a road reserve or a stock route,

(b) any proposed measures to be undertaken to ameliorate any such potential adverse impact.

The relevant matters of consideration of Clause 7.3 (3) and (4) were considered as part of the Biodiversity Assessment undertaken by NGH and is attached**.**

It is therefore considered that the relevant considerations of Clause 7.3 have been addressed and satisfied in Section 4.2.4 of the Biodiversity Assessment.

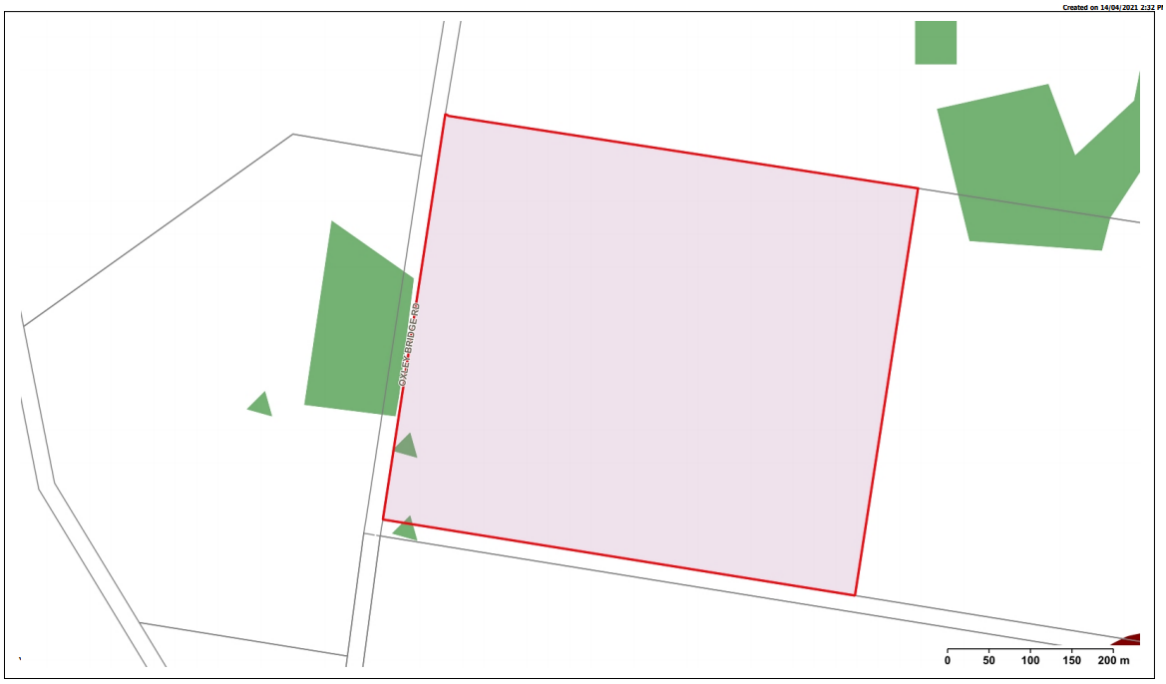

Figure 25 – Clause 7.3 - Biodiversity Mapping (Source: Wagga Mapping)

4.10. Wagga Wagga Development Control Plan 2010

The *Wagga Wagga Development Control Plan 2010* ("the DCP") provides specific requirements for development within the LGA, including the subject site.

The purpose of the DCP is to provide more detailed provisions and to support the Wagga Wagga Local Environmental Plan 2010. The DCP contains several sections which are relevant to the subject development and are outlined below.

The subject application will be required to be advertised in accordance with Section 1 (General) of the DCP. Furthermore, the application will be required to be notified for a minimum of 14 days under notification 'type B' which is defined under the DCP as follows;

"Three lots either side of the lot on which development is proposed and three immediately adjoining at the rear plus three directly opposite the frontage of the development site in the street or rear lane."

The following chapters of the DCP are applicable to the proposed works:

- Section 2 – Controls that apply to all development
- Section 8 – Rural Development

These matters are addressed in the following sections below.

4.10.1. Part A Section 2 – Controls that apply to all development

Section 2 of the Wagga DCP sets out controls that apply to all development, regardless of its classification. This section of the DCP relates to matters such as vehicle access and movements, off-street parking, landscaping, signage, safety and security, ESCP principles, and development near open space and utility infrastructure.

The proposed development complies with Part B Section 2 a full assessment of compliance is located in **Appendix H:.**

4.10.2. Part D Section 8 – Rural Development

Part D Section 8 of the DCP contains controls that apply to development on land in the RU1 and RU2 Zones. Development in the rural sector takes many shapes and forms. Conflicts can occur between uses, and potential environmental risks and harm, such as land degradation, erosion and threats to water quality, need to be carefully managed.

The proposed development complies with the relevant sections of the DCP and seeks to demonstrate responsible and sustainable use of agricultural land, ensures land use compatibility by providing buffer areas, landscaping, security and ensures that the 'non-traditional' use does not upset the balance of the existing agricultural environment. The proposed development seeks to minimise impacts on vegetation, land capability and ground water storage. The proposed development seeks to maintain and improve where possible the environmental conditions of the site and locality.

The proposed development complies with Part D Section 8 'Rural Development' a full assessment of compliance can be located in **Appendix H:.**

4.11. Strategic Planning Policies

4.11.1. Riverina Murray Regional Plan 2036

The Riverina Murray Regional Plan 2036 (Regional Plan) was adopted by the NSW Government in 2017 and is the relevant regional strategy that provides the strategic planning framework to guide decision-making and development in the Riverina & Murray regions for the next 15 years.

The Riverina Murray Regional Plan 2036 (the Plan) establishes a framework to grow the region's cities and local centres, supports the protection of high-value environmental assets and makes developing a strong, diverse and competitive economy central to building prosperity and resilience in the region.

The Minister's foreword to the document states that the Regional Plan will help support *"…investment in major services, facilities and… will distribute the benefits of growth across all centres in the region."*

The Regional Plan is underpinned by four (4) key goals including:

- Goal 1 – A connected and prosperous economy.
- Goal 2 – A diverse environment interconnected by biodiversity corridors.
- Goal 3 – Healthy and connected community.
- Goal 4 – Environmentally sustainable housing choices.

Each of these goals is supported by a number of different actions, which seek to achieve the objectives of the goal.

The development aligns with Direction 11 to promote the diversification of energy supplies through renewable energy generation. The region has significant potential for renewable energy industries.

Moreover, the development will support actions 11.1, 11.2 and 11.3 through;

- encouraging renewable energy projects by identifying locations with renewable energy potential and ready access to connect with the electricity network
- promote best practice community engagement and maximise community benefits from all utility-scale renewable energy projects.
- promote appropriate smaller-scale renewable energy projects using bioenergy, solar, wind, small-scale hydro, geothermal or other innovative storage technologies.

The proposed location has renewable energy potential and ready access to connect with the existing electrical network. The development promotes best practice community engagement and maximises the ability to support communities and villages through the utility-scale renewable energy project. The development is an appropriate smaller-scale renewable energy project that utilises solar energy to feed back into the network.

The development supports the Riverina Murray's strategic location as a major competitive advantage and will support the growing and diverse economy of Wagga. The development will support the benefits of this growth and provide greater opportunities for business and economic activity.

4.11.2. Local Strategic Planning Statement

The *Wagga Wagga Local Strategic Planning Statement - 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 LSPS 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 LSPS sets out three main themes:

- The Environment
- Growing Economy
- Community Place and Identity

The LSPS also identifies planning priorities and future strategic planning activities, in the form of studies and strategies. The proposed development 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 as a result 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. Context and Setting

The subject land is located to the south west of the Uranquinty urban area but is set within an entirely rural context. The character of the area is defined by a variety of rural properties which exist across large areas and comprise cropping and livestock grazing uses.

The site is suitable for the proposed development given it will occupy a smaller portion of the site and incorporates large setbacks from the main road frontage. The setback and partial screening of scattered vegetation softens the potential impact of the development from the surrounding receptors and main roads.

The larger landholding of the landowner, including the subject site, will continue to be used for agricultural purposes. Grazing is intended to operate as part of the normal routine by the current landowner and will assist in maintaining pasture height and ground cover, and will allow agriculture to continue on the site, although at reduced capacity. The site is considered suitable for sheep grazing and can be configured as part of the larger farm operations, utilising internal gates connecting adjoining paddocks and livestock handling facilities. Livestock will be able to be able to graze in areas between the panel arrays and within the perimeter areas, however landscaping zones would be protected by fencing or similar treatment.

The development will ensure the establishment of a high quality and positive outcome within the surrounding context, without causing detrimental impacts to the surrounding context.

To mitigate against the potential impacts of development on the surrounding area, it recommended that prior to works commencing, a suitable Construction Environmental Management Plan (CEMP) or similar is to be prepared and submitted for approval by Council. This CEM should be generally consistent with the commitments provided within this SEE and the accompanying documentation, and include matters relating to:

- Aboriginal Heritage Management;
- Construction Traffic Management;
- Site Establishment
- Bushfire Management;
- Waste Management;
- Erosion and Sediment Control;
- Noise Management;
- Dust Management;
- Site Decommissioning;
- Operation Hours;
- Emergency, safety and security; and
- Weed Management and Biosecurity

5.2. Visual Impacts

The visual impact of solar farms depends on the scale and type of infrastructure, the prominence and topography of the site relative to the surrounding environment; vegetation; and any proposed screening measures to reduce visibility of the site. In this instance, the proposal represents a

small-scale facility and has been proposed within an area of the site that maintains significant separation distances from the main road frontage and neighbouring dwellings.

Generally, solar panels will not create significant glare compared with other commonly existing surfaces. Likewise, photovoltaic solar panels are generally less reflective than other naturally occurring elements such as soils and crops.

The development will result in the placement of new solar panels and other aboveground infrastructure within a generally open landscape and presents risks to visual amenity.

The character of the landscape is predominantly an open modified agricultural landscape that has been shaped by farming and contains only scattered patches of native vegetation and other planted perimeter fencing. The landscape is very flat, with no areas of elevated viewpoints towards the site.

Further assessment and analysis can be found in the Visual Impact Assessment completed by Yonder Landscape Architecture which is attached.

5.3. Landscaping

Further to the discussion above in relation to visual impacts, the proposal includes landscape buffers to the northern, western and southern boundaries to screen and soften the development. The landscaping is proposed to be constructed around the lease area boundaries inside the proposed security fence. The landscaping areas are intended to reduce visual impacts from sensitive receivers and the adjacent Oxley Bridge Road.

The proposed landscape outcome is intended to enable a long term landscaping solution and is detailed in the attached Landscape Plan detail prepared by Yonder Landscape Architecture which is **attached**.

5.4. Traffic and Access

Impacts regarding traffic have been considered through inspection of the existing road network and the present condition of the land. A Traffic Impact Assessment (TIA) has also been prepared to review the existing conditions in the vicinity of the site, including traffic, parking and servicing, as well as the performance of the surrounding network. The TIA then evaluates the required traffic and parking requirements for the proposed development, and the impacts on the surrounding road network.

Oxley Bridge Road runs for a length of roughly 14km between East Street in Uranquinty to Holbrook Road at Maxwell. In the vicinity of the site, it is a local road under the control of the City of Wagga Wagga, and its role balances through movement with direct property access. In the vicinity of the site, Oxley Bridge Road is a two-lane, two-way rural sealed road that runs roughly north/south and lies west of the site. Contained within a 20m wide road reserve, the main carriageway consists of a 5.5m-wide seal with no line marking. No pedestrian or cyclist facilities are present, and there is no street lighting. The speed limit is the default rural speed limit of 100km/h.

Traffic will increase during the construction as delivery trucks, construction personnel and associated vehicles and contractors' vehicles are expected throughout the process. During this period, traffic volumes will vary depending on the scale and type of work being undertaken, however peak traffic volumes (during months 5-6 when the bulk of solar panels are delivered) are anticipated to be:

- Light vehicles – eight vehicles per day, primarily for construction workers who will typically arrive in the morning (four vehicles inbound) and depart in the afternoon (four vehicles outbound); and

- Medium and heavy vehicles – six vehicles per day, primarily for delivery of plant and equipment associated with the solar facility (e.g. Photovoltaic panels and frame materials), but also including some construction workers who will arrive by bus. These vehicles will generally arrive throughout the day (three vehicles inbound plus three vehicles outbound).

Light vehicles will primarily involve construction personnel, whereas heavy vehicles will involve delivery of plant and equipment associated with the solar facility. It is also intended to transport some construction personnel to the site each day by bus.

The TIA anticipates that construction activities at the site will generate. It is anticipated that construction activities at the site will generate the following additional traffic:

- 14 vehicles per day, a maximum of six days per week, resulting in 84 vehicles per week;
- Five vehicles per hour in the morning peak period (four light plus one heavy), travelling inbound to the site; and
- Five vehicles per hour in the afternoon peak period (four light plus one heavy), travelling outbound from the site.

Given the expected rate of traffic and the existing lower rates of existing traffic, it is not expected that the proposal will result in any significant impacts.

Once operational, the facility will have a very low rate of traffic generation. Primarily, traffic generated during operation of the site would be movement of staff in light vehicles to and from the site. The TIA anticipates that the operational activities of the site will result in two (2) vehicles per day on the road network, a maximum of three days per week, resulting in six vehicles per week. This comprises one (1) vehicle per hour in the morning peak period, travelling inbound to the site; and one (1) vehicle per hour in the afternoon peak period, travelling outbound from the site. This rate of traffic can be managed by the existing road network and will have no impacts on the existing network.

Overall, the TIA determines that there will be no significant impact on roads in the vicinity of the site or further afield during the operation of the proposed development, and that impacts from construction can be appropriately managed through the development and implementation of an appropriate CTMP.

A copy of the Traffic Impact Assessment is included attached.

5.5. Biodiversity

The proposal would result in the removal of approximately 16.95 ha of non-native vegetation, including exotic pastures and crops. This constitutes the removal of potential low-quality foraging habitat for some fauna species. The proposal will impact on 0.09 ha of regenerating native canopy species that occur in the Main Entrance area. Direct impacts to native vegetation have been avoided by the proposal where possible. Given the local context and small area of native vegetation to be impacted, the works are considered unlikely to have a significant environmental impact.

The Biodiversity Assessment considered it unlikely that threatened flora or fauna species would occur within the proposal area. Therefore, a significant impact to threatened species listed under the BC Act and/or EPBC Act is considered highly unlikely.

The report outlines and recommends mitigation and management measures in order to minimise impacts to threatened entities, prevent disruptions to the life cycle or harm to individual animals of these species and minimise the contribution of the proposal to key threatening processes.

Further discussion and assessment of impacts is undertaken in the Biodiversity Assessment provided attached.

5.6. Glint and Glare

Glint refers to the momentary flash of bright light that can be caused by the reflectivity of solar panels and glare refers to the continuous source of light and is generally associated with stationary objects. Glint and glare from PV panels can have potential safety or amenity impacts to surrounding sensitive receivers, including potential to impair observers through inducing an after image.

A Glint and Glare Assessment was carried out using the Glare Gauge modelling tool by Forge Solar (attached). This is an industry standard technical modelling tool, which utilises the Solar Glare Hazard Analysis Tool (SGHAT) developed by Sandia National Laboratories, to assess the potential glare to receptors around solar arrays. The Glint and Glare Assessment is included attached.

The tool enables the proposed solar facility to be mapped along with relevant data inputs and then uses the data to consider the potential for temporary after-image or more significant retinal burn. In summary, red glare refers to potential for permanent eye damage from the observation location, yellow glare indicates the potential for after image effects and green glare refers to low potential for after image impacts.

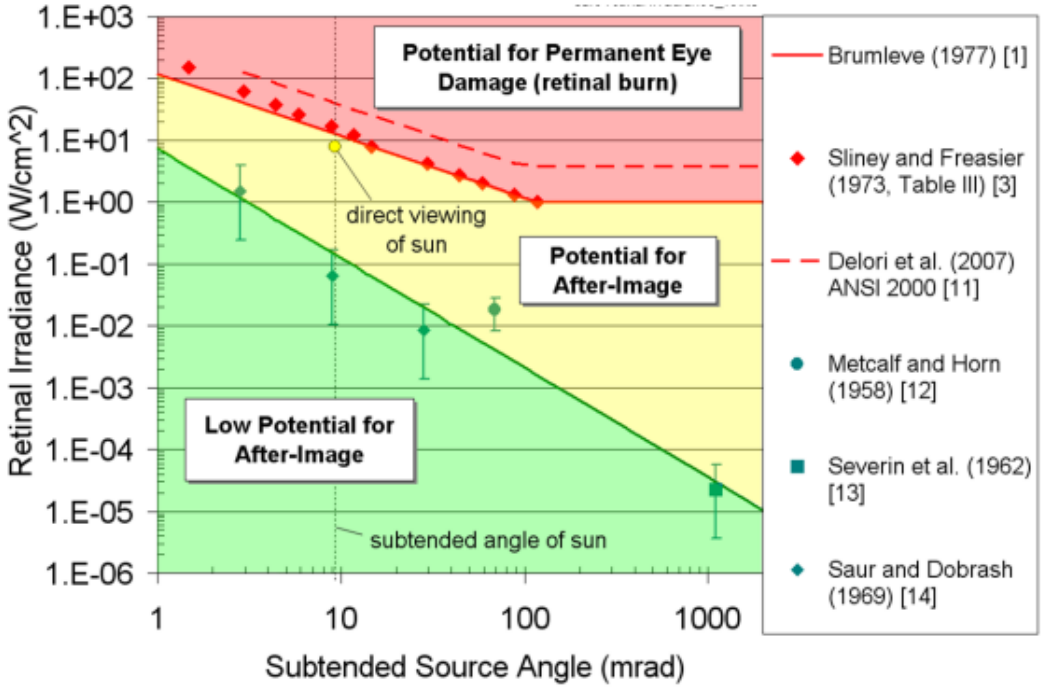

Figure 26 – Chart used to plot the total minutes of glare for each receptor.

As construction of PV panels primarily utilises glass and steel there is a perception of glint and glare from the reflectivity of solar panels. This leads to potential issues of distractions to motorists, aircraft and eye damage.

Generally, solar panels will not create significant glint or glare compared with other surfaces. PV panels are designed to collect sunlight to convert to energy and therefore absorb the majority of light received. The panels are designed using anti-reflective coatings during manufacture to reduce reflection and will typically absorb 80-90% of the light received.

PV panels are also generally less reflective than other naturally occurring elements such as soils and crops and have been found to be generally less reflective that general rural environments and far less reflective that open water[1].

The angle of incidence of the sunlight is also relevant in considering the reflection of solar development. A fixed axis solar facility will have panels that do not move throughout the day and therefore the angle incidence varies with the time of day. A tracking system, such as that proposed for this development, will follow the sun through the day and can have the angle of incidence reduced.

The results of the modelling for this development indicates that there will be no glare on the surrounding sensitivity receivers of paths. This is achieved because the panels will be single axis trackers and will follow the sun through the day and the proposed tracking system will be configured not to 'back-track'.

'Backtracking' refers to the process where the panels revert a flat resting position after sunset (when the sun left the angle of rotation of the panel) until sunrise (when the panel was in the angle of rotation of the panels). This outcome generally results in glare to surrounding properties as the panels would 'reset' to flat in the late evening and early morning. The configuration of this facility will be that at the end of the day, panels will remain fixed at 60 degree tilt facing west and will rotate back to 60 degrees facing east only when the sun is within the angle of rotation in the morning.

Landscaping is proposed to the perimeter around the PV array around all boundaries which will contribute to minimising potential for impacts from glare at these modelled locations. This landscaping is to be provided in the form of perimeter plantings as detailed by the submitted landscape plans. Forge Solar also notes that the analysis algorithm does not consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc. This means that any vegetation or obstructions (existing or proposed) that may prevent glare are not assessed.

Overall, the assessment determines that there will be no glare impacts on the surrounding receptors, providing that backtracking is not allowed by the proposal system. The applicant has committed to this outcome and it is expected that any approval will require this outcome.

5.7. Heritage

5.7.1. Aboriginal Cultural Heritage

The proposal will require earthworks required for cabling of each photovoltaic array to inverters and the substation, for piledriving of the supportive frames, and for the proposed perimeter road. As such, Aboriginal heritage was considered as part of the proposal to ensure that no harm would come from these works or the ongoing operation of the facility.

An Aboriginal Due Diligence Assessment has been carried out for the property by NGH Environmental for the land in accordance with the sequence of steps identified in the NSW Office of Environment and Heritage's Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW. A copy of the Assessment is provided attached.

[1] Spaven Consulting, Solar Photovoltaic Energy Facilities: Assessment of Potential for Impact on Aviation, January 2011

5.7.2. European Heritage

A search was undertaken for items of heritage significance in the area under the NSW Heritage Act and the Wagga Wagga Local Environmental Plan. There are a number of items within the urban area of Uranquinty, however none of these items are located within the vicinity of the subject land.

Due to the absence of any non-indigenous heritage and no buildings or structures which may have heritage potential, there are no recommended mitigation measures proposed in regard to heritage.

5.8. Natural Hazards

5.8.1. Bushfire

The subject site is not identified as being bushfire prone. As such no further consideration is necessary.

5.8.2. Flooding

The subject site is not identified as being flood prone. As such no further consideration is necessary.

5.9. Electro-magnetic radiation

The generation and use of electricity can produce extremely low frequency electro-magnetic fields (EMF). According to the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), which is the department which oversees emerging research into the potential health effects of EMF exposure, there is no established evidence of health effects from exposure to electric and magnetic fields from powerlines, substation, and other electrical sources, regardless of proximity.

The location of the proposed solar facility is considered appropriately separated from the nearby adjacent dwellings. No further mitigation measures are proposed.

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 at least 20 to 25 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 preliminary Strategy sets out the anticipated waste that will be generated at the construction, operation and decommissioning phases of the development.

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	General waste from site office, including paper, plastic and glass. 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 bin or otherwise stockpile areas near the site office, which will divide waste into 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,	As with construction, waste generated from the dismantling of the solar facility infrastructure will be distributed to separate

Stage	Anticipated Waste Material	Proposed Management
	PV boxes, skids, scrap metal. Glass for panels Silicon for wafers Inverters, batteries, transformers and electrical cables Fencing Storage containers	streams for recycling or general waste. 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.

It is recommended that a Waste Management Plan be produced to detail waste management guidelines for the construction, operation and decommissioning of the facility. This plan is to be developed prior to any works commencing on site, and is to detail the following:

- Provision and classification of waste streams including recycling and general waste in separated bins.
- Reporting procedures if any waste incident occurs.
- Waste minimisation strategies for both construction and operation of the facility.
- Location of bins, signage, and collection points.
- Considerations to recycling and/or disposal of infrastructure upon decommissioning.

5.11. Air Quality

The use of the subject land is for agricultural purposes likely consisting of regular tilling, sowing and harvesting or animal grazing. As is evident from the current condition of the land, this agricultural use has degraded much of the groundcover vegetation and left the ground exposed. The construction processes of the proposed solar farm will not involve substantial earthworks and only small-scale excavation for footings, ancillary structure including the substation, and for the establishment of an unsealed perimeter road. Other ground disturbance may result from the passage of large vehicles for the delivery of the panels and driving machinery for the array footings.

Dust emissions may be generated as a result of earthwork activities, particularly during dry and windy conditions. Excessive dust generation may impact the amenity of surrounding properties and be detrimental to human health. Some of the environmental factors that must be considered when evaluating the risk of dust generation are the following:

- Soil type & structure – clay content influences the expected dust generation, with higher percentages correlating to decreased dust generation. Degradation of soil structure increases dust generation.
- Soil moisture – wetter soil decreases dust generation.

- Rainfall – as well as contributing to soil moisture, it also influences the potential suspension and drift of dust particles.
- Wind direction and speed – determines the potential drift and direction of dust particles.

These environmental factors will be monitored for each of the construction and operational stage of the development.

The rate of dust generation from the land once the facility is operational is expected to reduce from the former agricultural use due to there being less ground disturbance required for the operation of the facility.

The following mitigation measures are proposed to minimise dust generation for the construction and operational stages of the development:

During Construction:

- Minimise vehicle movements to defined paths and laydown areas.
- Supress dust emissions using watering carts, spraying water to supress dust as required.
- Daily monitoring of weather conditions and pause works during dry and windy weather.
- Construction will cease and be rescheduled if monitoring identifies windy weather in excess of 40-50km/hr
- Minimise the driving of the footings of the arrays through an appropriately designed layout.
- Ensure stockpiles of excavated material is bunded and protected from wind and vehicle movements
- Enforce an on-site speed limit of construction and contractor vehicles to limit vehicle dust generation
- Construction vehicles will be washed down, using on-site facilities, to minimise the transportation of mud and dirt onto roadways
- Any dirt that has tracked onto the adjacent roadway, from construction vehicles, will be cleaned and appropriately disposed of within 24 hours
- Visual inspection of the construction areas will be undertaken by the HSE Coordinator and construction personnel to identify any potential management issues.

During Operation:

- Provide training as a part of site induction process to educate employees and contractors of air quality management.
- Regular monitoring of dust generation rates to ensure that low levels
- Revegetation and regeneration of site with appropriate ground cover species.
- Ensure all plant, storage areas and equipment are contained within a designated graded area.
- Grade and add gravel base to accessways and circulating roads, where appropriate.
- Ensure monitoring and maintenance protocols for the internal road network is followed to reduce dust generation
- Enforce a maximum speed limit on the internal road network to ensure operational traffic generates minimal dust.

The implementation of these mitigation measures will ensure that the impacts on air quality form dust generation is minimised. Throughout the construction and operational stages, the success of these measures will be monitored and reviewed as required.

5.12. Workforce & Accommodation

The proposal will result in an increased workforce which will be a generally positive impact positive impact on the local economy. Likewise, it is acknowledged that the increased workforce

has the potential to place pressure on local housing market and accommodation providers and other businesses and industries in the local area.

The construction works are expected to generate an expected workforce of up to 50 persons over the 6 month works period, however the applicant estimates that the peak of workforce on site to average approximately 30 persons. The number of persons on site will fluctuate due to the nature of the construction program and that not all personnel will be required for the full project, with the activities for construction being carried out over a number of phases. For reference, the phases of the construction program are generally grouped as follows:

- Site fencing and establishment – repairs to rural fencing and construction of security fencing
- Civil works – construction of new road accesses, hardstand internal roads, drainage and other works as required
- Installation of posts and rack systems – pile/screw driven into place and connection of
- Civil works and set out of substation
- Delivery and fitting of panels to racking system
- Commissioning of substation and final works
- Landscaping and final establishment works

The applicant intends to utilise local workforce for the majority of the construction work, including for specialised technical contractors, subject to availability. Utilising a predominantly local workforce will reduce the demand of workers seeking temporary accommodation in the immediate area. In addition to any workforce drawn a reasonable commuting distance from the Wagga area, such as those areas up to 30-60 minutes from the site would also travel from their place of residence rather than seeking temporary accommodating in Wagga.

It will be necessary to use non-local workers and contractors for the construction work, and it is expected that these persons would arrive from other areas and utilise short term accommodation in Wagga. There are a number of accommodation options available in Wagga that would be used by non-local workers and based on the estimated peak personnel levels during construction, these persons could be accommodated within the town.

During construction, the applicants will provide bus transport for the workforce, providing collection and drop-off from a defined location in the Wagga township and the subject site, corresponding with the construction shifts. This will enable a more efficient arrangement for workers to access the site and reduce demand on local roads and other transport services.

During operation of the facility, 2 persons are to be employed for ongoing operation of the site and will attend the site on a regular basis. Maintenance of the facility will be required from time-to-time and the applicant is committed to utilising local contractors to undertake maintenance subject to availability.

Having regard to the above, the proposed development is expected to have a generally positive impact on the local economy and will not lead to an unreasonable impact on the local housing and accommodation providers. The applicant proposes to introduce a number of strategies to mitigate potential impacts that may result from the increased workforce during construction, as detailed below.

- Preparation of a detailed Construction Schedule for discussion with local community, service providers and accommodation providers;
- Engage the majority of the construction workforce from the local area, including both specialised contractors and other workers;
- Through tender and procurement processes, the applicant will give higher weighting to these individuals and companies that employ staff from the local area;

- Undertake initial and ongoing engagement with local housing and accommodation providers to determine availability of accommodation ahead of time and ensure that peak periods of those providers are not detrimentally affected.

5.13. Social & 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 facility will have. These impacts may result from the construction, operation and decommissioning of the facility.

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.
- 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 facility and the minimal ground disturbance, the loss of agricultural value will be minimal and temporary. The nature of the array will leave the majority of the impact area undisturbed.

The proposed facility 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 Uranquinty township for accommodation and other businesses.

If necessary and appropriate, land around the arrays will be used for grazing.

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.

Overall, the land will assist towards goals to reduce emissions nationwide relating to climate change. It will also assist towards supplying land within the LGA with electricity, further contributing to its capacity and electrical infrastructure.

6. Conclusion

This application seeks development consent for a 4.95 megawatt electricity generating works and associated infrastructure and works, including single axis tracker solar arrays and battery energy storage system ("the proposal") at Lot 24 and 43 in DP754565 and addressed as 1268 Oxley Bridge Road, Uranquinty

The application seeks development consent under Part 4 of the EP&A Act and has been assessed against the provisions of Section 4.15(1) of the EP&A Act. As demonstrated by the detailed assessment above, the proposal satisfies the intent of the provisions of the applicable EPIs and will result in a positive development outcome in terms of social, environmental, and economic impacts.

The site has been selected due to the excellent solar exposure and access to the electrical transmission network. The site also has a low level of environmental impact, having been cleared and disturbed. The likely impacts of the development have been considered in this report and supporting documents and have been found to be acceptable subject to appropriate mitigation measures.

It is considered that the site is suitable given the general rural context and minimal development in the immediate surrounds. The flat profile of the land will enable the facility to have minimal impacts on nearby dwellings and urban development. The site is also flat, free of development constraints and is accessible to large delivery vehicles during the construction phase and convenient for ongoing management and maintenance.

Having regard for the content of this report, the proposal deserves the support of Council because:

- it is consistent with the relevant legislation, environmental planning instruments and development control plan;
- it is considered to be appropriate given surrounding development and the context of the area;
- it will enhance the supply of a clean, zero-emission energy source to the area, contributing to the overall sustainability of the state;
- it will not permanently remove the potential of the site for use as productive farmland, as the construction and operational processes involve minimal ground disturbance, and the area can return to a productive use after decommissioning;
- it will contribute to the economy of Uranquinty and Wagga Wagga through providing employment opportunity, business to contractors and suppliers, and indirectly through accommodation providers of the township;
- it is adequately accessible from a well-constructed and sealed rural road (Oxley Bridge Road).

In light of the above considerations, it is our opinion that the proposal is appropriate from a planning point of view and is in the public interest. The proposed development warrants support by Council.

Appendix A: Title Details

Appendix B: Development Plans

Appendix C: Biodiversity Assessment

Appendix D: Aboriginal Due Diligence Assessment

Appendix E: Traffic Impact Assessment

Appendix F: Visual Impact Assessment & Landscape Plan

Appendix G: Glint and Glare Assessment

Appendix H: DCP Compliance Tables

Table 4 – Section 2 - Controls that apply to all development

Controls	Comment
2.1 Vehicle Access and movements	
C1 Access should be from an alternative secondary frontage or other non-arterial road where possible. **C2 A Traffic Impact Study may be required where adverse local traffic impacts may result from the development. The traffic impact study is to include the suitability of the proposal in terms of the design and location of the proposed access, and the likely nature, volume or frequency of traffic to be generated by the development.** **C3 Vehicles are to enter and leave in a forward direction unless it can be demonstrated that site conditions prevent it.** **C4 Provide adequate areas for loading and unloading of goods on site. The loading space and facilities are to be appropriate to the scale of development.** **C5 Access driveways are to be located in accordance with the relevant Australian Standard at the time of lodgement of an application.** **C6 Ensure adequate sight lines for proposed driveways.**	Complies A Traffic Impact Assessment (TIA) has been prepared to review the existing conditions in the vicinity of the site, including traffic, parking and servicing, as well as the performance of the surrounding network. The TIA evaluates the required traffic and parking requirements for the proposed development, and the impacts on the surrounding road network. It is considered that the TIA appropriately addresses vehicle access and movement requirements under Clause 2.1 of Section 2 of the DCP. An assessment of the development against the performance criteria of the DCP has determined that the proposal does not result in any adverse local traffic impacts. The development utilises the existing road networks and access points, to the site. The anticipated increase in traffic movements is considered to be well within the capacity of that road network and the access points. Vehicle circulation through the site is achieved with two-way traffic movements that ensure all vehicles enter and egress the site in a forward direction. A designated loading bay is provided, and adequate sightlines are maintained.
2.2 Off-street parking	

Controls	Comment
C1 Parking is to be provided in accordance with the table below. For uses not listed, similar land uses should be used as a guide in assessing car parking requirements. **C2 The design and layout of parking is to be in accordance with the relevant Australian Standard at the time of lodgement of an application.** **C3 Not applicable** **C4 Not applicable** **C5 Not applicable** **C6 Not applicable.** **C7 Not applicable** **C8 A traffic and parking study may be required for certain proposals, including but not limited to proposals for schools and other education uses including childcare centres, business parks, hospitals, cinemas and gyms.** **C9 Not applicable** **C10 Not applicable** **C11 To ensure sightlines are maintained for drivers and pedestrians, trees used within or adjacent to car parking areas shall have a minimum clear trunk height of 2.5m, with shrubs and ground covers not to exceed**	Not applicable to the proposed development The proposed development does not require the provision of off-street carparking. A Traffic Impact Assessment has been completed to review all necessary matters relating to traffic, parking and access of the subject site.

Controls	Comment
500mm in height.	
2.3 Landscaping	
C1 A landscape plan is required for applications for: **Commercial and Industrial developments** **Residential development (other than dwelling houses).** **C2 Natural features at the site, such as trees, rock outcrops, cliffs, ledges and indigenous species and vegetation communities are to be retained and incorporated into the design of the development.** **C3 Use native and indigenous plants, especially low water consumption plants in preference to exotic species.** **C4 Trees should be planted at the front and rear of properties to provide tree canopy.** **C5 Provide landscaping in the front and side setback areas, and on other parts of the site to improve the streetscape, soften the appearance of buildings and paved areas, and to provide visual screening.** **C6 Landscaping should provide shade in summer without reducing solar access in winter. Limited use of deciduous species is acceptable where used to achieve passive solar design**	Complies Refer to Landscape Plan attached The Landscape Plan includes a combination of tree and low height and low maintenance plantings, and native species where appropriate. The proposed trees will provide canopy cover as a source of visual amenity and buffer between adjoining land uses. The proposed landscaping compliments the proposed works and use of land, protects the character and appearance, and provides a source of visual screening for nearby land uses.

Controls	Comment
2.4 Signage	
C1 All signage and structures must relate directly to the lawful approved or exempt land use being conducted on the land to which the signage or structure is to be displayed. **C2 Any sign or structure should reflect the architectural style of the building.** **C3 Signs should not obscure decorative forms or moulding and should observe a reasonable separation distance from the lines of windows, doors, parapets, piers, and the like.** **C4 Signs should be of a size and proportion which complement the scale of the existing building as well as surrounding buildings and signs. Signs should not significantly affect the presentation of the existing façade of the building.** **C5 The scale of lettering should also be proportioned to the area of the signage panel to which it will be applied.** **C6 Must be securely fixed and maintained in a structurally adequate and safe manner.** **C7 The colour used in the design of a sign or structure should complement the colour finish of the building to which it will relate.** **C8 Corporate colours should be limited to the signage or.**	Not applicable to the proposed development. No signage is proposed.

Controls	Comment
C9 The illumination of signage and structures by low set floodlighting is preferred, rather than the use of neon or boxed fluorescent lighting on buildings. **C10 The rationalisation of signage will be generally required where there is existing signage through the use of common directory pylon signs for multi-occupancy developments and by limiting the number of signs that may be erected on any one building or site.** **C11 A sign or structure must not endanger public safety or cause nuisance or a hazard by reason of its location, construction or design by either:** **Emitting excessive glare or reflection from internal or external illumination or surface materials;** **Obscuring the view of motorists or pedestrians;** **Screening potentially hazardous road features;** **Signage containing designs or messages which may either confuse or distract motorists.** **Specific controls for signage and structures** **Pole or Pylon Signs (including monolith style signs)** **C37 Maximum of one (1) pole or pylon sign per street frontage.** **C38 Minimum clearance of 2.6metres is required from the underside of the pole or pylon sign and the ground level, except where the sign structure is**	

Controls	Comment
a monolith style accommodating a panel that reaches to or close to the ground. **C39 Maximum panel area per sign (whether all used for advertising content or not) for a pole or pylon sign upon a site located within a business zone is 8m2 or 10m2 for a monolith style sign.** **C40 Maximum height for a pole or pylon sign upon a site located within a business zone is 8 metres above ground level, provided the height of the sign does not protrude above the dominant skyline (including any buildings, structures or tree canopy).** **C41 Maximum panel area per sign (whether all used for advertising content or not) for a pole or pylon sign upon land within an Industrial zone is 10m2, including monolith signs.** **C42 Not applicable.** **C43 Not applicable.** **C44 Not applicable.** **C45 Not applicable.**	
2.5 Safety and security	
C1 Use good site planning to clearly define public, semi-public and private areas.	The site will be secured by fencing and gate access. A post and wire fence will be established to the external boundaries of the development area, securing the access

Controls	Comment
C2 Entries are to be clearly visible and identifiable from the street and are to give the resident/occupier a sense of personal address and shelter. For non-residential uses, administration offices or showroom are to be located at the front of the building. **C3 Minimise blank walls along street frontages.** **C4 Avoid areas of potential concealment and 'blind' corners.** **C5 Provide lighting to external entry areas, driveways and car parks in accordance with the relevant Australian Standards. The lighting is to be designed and sited to minimise spill and potential nuisance to adjoining properties.** **C6 Planting and fencing is not to reduce the safety of users or compromise areas of natural surveillance.** **C7 Where a site provides a pedestrian through route the access path is to be clearly defined and sign posted, appropriately lit, and have satisfactory visibility.** **C8 Locate public toilets and rest areas to promote their use and maximise public surveillance without creating visual intrusion.**	and substation. An internal fence will be erected to secure the solar panel arrays and other equipment. The facility may utilise CCTV monitoring of access points and substation areas. Security patrols of the property may also be carried out by contractors.
2.6 Erosion and Sediment Control Principles	
All controls in relation to Section 2.8 are located in Appendix 2 – Erosion	The proposed works include site disturbance in establishing and augmenting civil infrastructure, new building works and parking areas. These construction works will

Controls	Comment
and Sediment Controls.	be appropriately secured and managed by the appointed contractors to avoid any significant impact on drainage infrastructure. Potential erosion to exposed areas of the site is low and will be further minimised by use of sediment control and stabilisation measures before and after construction. To ensure all potential impacts are minimised, appropriate Soil and Water Management techniques will be implemented during construction in accordance with Council's guidelines. 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.

Table 5 – Section 8 - Rural Development

Controls	Comment
8.1 Development in rural areas	
C1 Uses are to be compatible with the character of the locality in terms of buildings, structures and the nature of operations. **C2 Provide adequate buffer areas and setbacks to minimise potential conflicts with adjoining lawful land uses. Where there is potential for a conflict between land uses, priority will be given to the existing productive use.** **C3 Use landscaping and other screening options to help integrate new uses and developments into the rural landscape.** **C4 Uses must be capable of operating within capacities of available existing services.** **C5 Provide adequate facilities for additional traffic in terms of vehicle access and movements, parking areas, and loading and unloading of goods.** **C6 In the case of larger projects Council may require the applicant to demonstrate that the roads in the locality are of satisfactory construction and condition to accommodate the size, weight and volume of vehicles that could be generated by the use, and that the local traffic conditions are suitable.**	Refer to Section 5 for a detailed overview of the proposed development and its potential impacts and how the proposed development satisfies the requirements of this DCP. Overall, the development seeks to ensure that development such as the proposed electricity generating works are compatible with the site and local context. The development seeks to minimise the potential for conflicts between the traditional and productive agricultural uses through a range of mitigation measures. Furthermore, specific consideration has been undertaken to understand the subject sites constraints and potential impacts resulting from this type of development. The site and its surrounding context have been taken into consideration during the development of the plans and design, through the information and expert information provided within the supporting technical studies and other similar projects carried out by Bison Energy both in NSW and Victoria. It is therefore considered that the proposed development complies with this section of the DCP.

Controls	Comment
C7 Provide satisfactory arrangements for storage and disposal of waste. **C8 Not applicable** **C9 Not applicable** **C10 Not applicable** **C11 Not applicable** **C12 Variations to the minimum setback can be considered where it can be shown that the agricultural potential of the land will be protected taking into account alternative measures such as landscaping or other relevant factors.**	
8.2 Rural produce sales and ancillary tourism	
Not applicable to the subject application	
8.3 Rural dwellings	
Not applicable to the subject application	