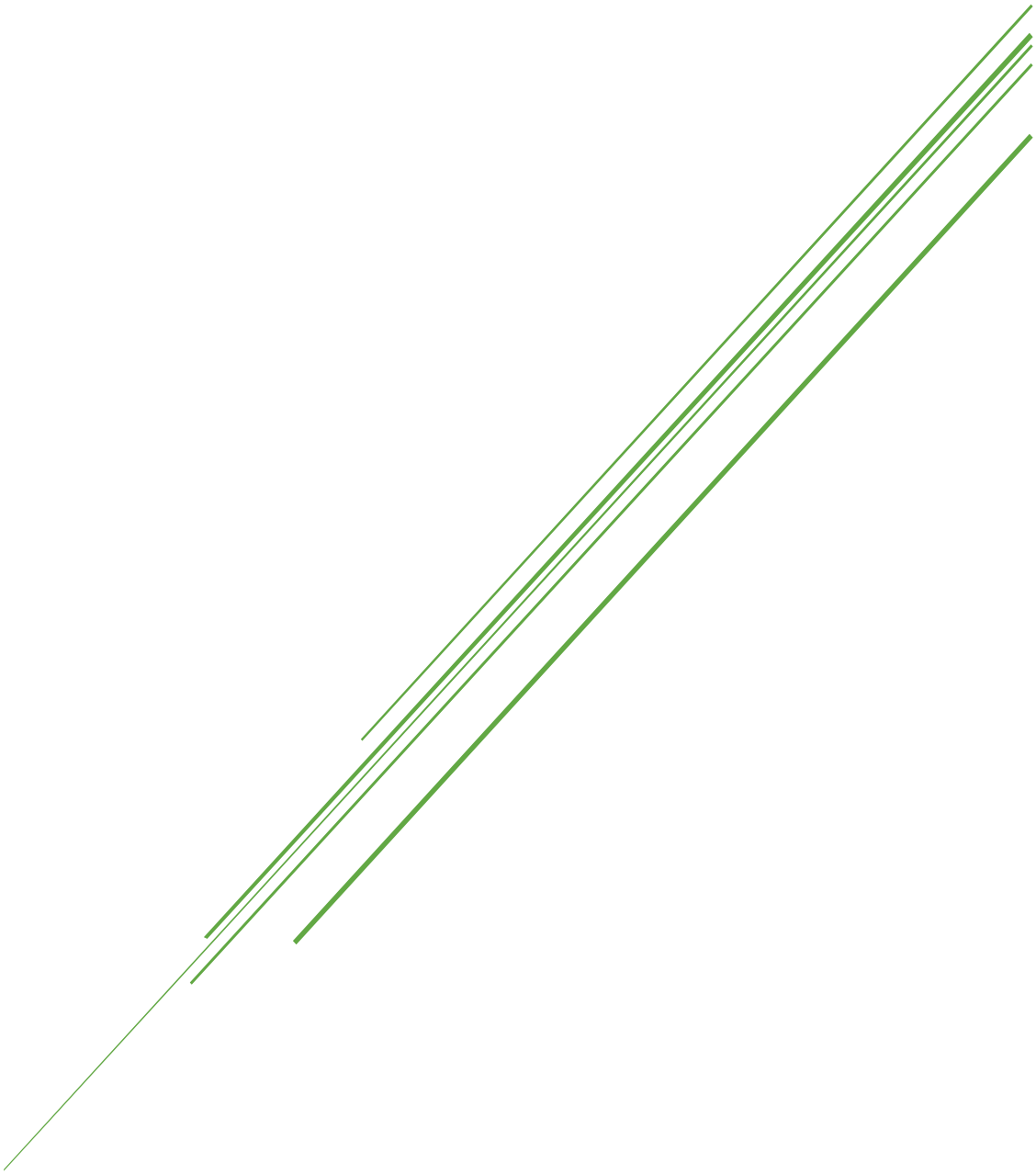
# STATEMENT OF ENVIRONMENTAL EFFECTS

West Wyalong Solar Farm

3 September 2021



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# TABLE OF CONTENTS

## Attachment A: AHIMS Search Results

**Document Details & History**

| | |
|---|---|
| Project number | 2620 |
| Project title | West Wyalong Solar Farm |
| Document title | Statement of Environmental Effects |
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| Version | Draft: 31 August 2021<br>Final: 3 September 2021 |

# EXECUTIVE SUMMARY

This Statement of Environmental Effects supports an application to Bland Shire Council to develop a solar farm at Lot 563 DP 753135 No 364 Wargin Road, Wyalong. It is referred to as the West Wyalong Solar Farm due to the need to connect to the Essential Energy West Wyalong Zone Substation. The proponent is ITP (Development) Pty Ltd. The site is located 2.8 kilometres south of Wyalong town centre and occupies 16 hectares of the 35 hectare property. The application is for regionally significant development that needs consent and is to be determined by the Western Regional Planning Panel.

The proposed development comprises the following:

- 12,000 solar modules ranging in height from 1.5 metres to 2.75 metres installed in rows running north to south with approximately 6.25 metres centre to centre spacing between each row,
- Two 3.4MW inverter stations that are 3 metres high and each mounted on a 12.2 metre long skid,
- A 2.9 metre high kiosk to convert high and medium voltage to low voltage electricity suitable for connection to the local system,
- A battery storage system that is 12.2 metres long, 2.4 metres wide and 2.9 metres high,
- A temporary car parking and materials laydown area,
- A 1.8 metre high security fence topped with three rows of barbed wire to give a total height of 2.3 metres, and
- Landscaping on the inner side of the security fence on the southern and western sides of the array with shrubs that will grow to a height of 3 metres.

The site selection process has involved liaison with Bland Shire Council officers; identification of environmental and topographical constraints; existence of necessary infrastructure including accessways, power lines and sub-stations; proximity to the settlement of Wyalong to enable supply of power direct to the township; sufficient cleared land area; willingness of the land owner to develop the property and enter lease arrangements to facilitate the solar farm; and the availability of solar resources.

Documentation is submitted in accordance with *Schedule 1 Forms Part 1 Development Applications* of the *Environmental Planning and Assessment Regulation 2000.* It is not integrated development as there are no separate approvals required to be issued under section 4.46 of the *Environmental Planning and Assessment Act 1979*.

The development is satisfactory to the objects of the *Environmental Planning & Assessment Act 1979* and applicable environmental planning instruments.

The land is zoned RU1 Primary Production under *Bland LEP 2012*. The development is defined as *electricity generating works* which means a building or place used for the purpose of making or generating electricity. The proposed development of the West Wyalong Solar Farm is to be located on land zoned RU1 and the use is prohibited in that zone. However, it is made permissible by provisions of *SEPP (Infrastructure) 2007*.

The proposed development is consistent with the strategic planning framework that applies to the local government area, the site itself and to the development of electricity generating works. Goals, objectives and actions of the *Riverina Murray Regional Plan 2036*, the *Bland Shire Local Strategic Planning Statement* and the *NSW Renewable Energy Action Plan* are satisfied.

Key issues are potential impacts on biodiversity, access to the site and traffic impacts, noise emissions, and impacts on the rural landscape and scenic amenity. The likely impacts of the development have been considered and measures recommended to avoid, minimise or mitigate these impacts.

The use is suited to a rural location due to the need for a large land area and the ability to connect to the local electrical transmission network. The addition of a solar farm to the rural area of Wyalong would not detract unreasonably from local amenity or the natural environment and will be screened from future development of the neighbouring large lot residential zone by existing roadside vegetation. The landscaping to be provided along the southern and western boundaries of the array will screen the facility from properties to the south and to Wargin Road.

The cumulative impacts of the proposed development are minor. There have been two other large scale solar farms approved in West Wyalong and Wyalong. However, there is sufficient capacity in the electricity grid system to accommodate the proposed West Wyalong Solar Farm as evidenced by prior arrangements made by ITP Development Pty Ltd to connect to Essential Energy infrastructure.

Electricity generated by the system will be directed to the settlement of Wyalong via existing infrastructure to contribute to the supply of electricity for use by households and businesses. The solar farm will generate community economic benefits through local employment opportunities during the planning and construction phases as well as maintenance and inspection jobs once operational. The land may continue to be used for agriculture and returned to its current condition once the facility is decommissioned. It will assist Commonwealth and NSW Governments to achieve targets and objectives relating to emissions to address climate change.

# 1. INTRODUCTION

## 1.1 Overview

The purpose of this Statement of Environmental Effects is to support an application to Bland Shire Council to develop a solar farm at Lot 563 DP 753135, No 364 Wargin Road, Wyalong. It is referred to as the West Wyalong Solar Farm due to the need to connect to the Essential Energy West Wyalong Substation. The application is for regionally significant development that needs consent and is to be determined by the Western Regional Planning Panel.

This Statement has been prepared having regard to information that has been sourced from the Council's website, the NSW legislation website, SIX Maps, the website of the Department of Planning, Industry & Environment, the Planning Portal and SEED (Sharing and Enabling Environmental Data). All information referenced in this Statement has been sourced from publicly available documents or websites and from expert reports produced to support the application that are listed in Table 1. A site visit and meeting with Council's Manager of Development and Regulatory Services took place on 11 November 2020.

The purpose of this report is to assist Council's assessment of the proposal against the matters for consideration listed in section 4.15 of the *Environmental Planning and Assessment Act 1979*. There are no separate approvals required to be obtained under section 4.46 of the *Environmental Planning and Assessment Act 1979* therefore the application is not integrated development. Table 1 below is a checklist of this application against relevant sections of legislation that may generate the need for a separate approval.

**Table 1: Integrated development checklist**

| Act | Provision | Approval | The proposal | Integrated (Y/N) |
|---|---|---|---|---|
| Coal Mine Subsidence Compensation Act 2017 | s 22 | approval to alter or erect improvements, or to subdivide land, within a mine subsidence district | The land is not designated a mine subsidence district | No |
| Fisheries Management Act 1994 | s 144 | aquaculture permit | It is not proposed to carry out aquaculture | No |
| | s 201 | permit to carry out dredging or reclamation work | It is not proposed to carry out dredging or reclamation work | No |
| | s 205 | permit to cut, remove, damage or destroy marine vegetation on | It is not proposed to remove, damage | No |

| | | | | |
|---|---|---|---|---|
| | | public water land or an aquaculture lease, or on the foreshore of any such land or lease | or destroy marine vegetation | |
| | s 219 | permit to—<br>(a) set a net, netting or other material, or<br>(b) construct or alter a dam, floodgate, causeway or weir, or<br>(c) otherwise create an obstruction,<br>across or within a bay, inlet, river or creek, or across or around a flat | It is not proposed to carry out any works across or within a bay, inlet, river or creek, or across or around a flat | No |
| Heritage Act 1977 | s 58 | approval in respect of the doing or carrying out of an act, matter or thing referred to in s 57(1) | The application does not relate to an interim heritage order or an item listed on the State Heritage Register | No |
| Mining Act 1992 | ss 63, 64 | grant of mining lease | The development does not involve an application for a mining lease | No |
| National Parks and Wildlife Act 1974 | s 90 | grant of Aboriginal heritage impact permit | Due diligence indicates that there is no item or place of Indigenous significance and an application is not being made for permit | No |
| Petroleum (Onshore) Act 1991 | s 16 | grant of production lease | The development does not involve an application for a petroleum production lease | No |
| Protection of the Environment Operations Act 1997 | ss 43(a), 47 and 55 | Environment protection licence to authorise carrying out of scheduled development work at any premises. | The application does not involve scheduled development | No |
| | ss 43(b), 48 and 55 | Environment protection licence to authorise carrying out of scheduled activities at any premises (excluding any activity described as a “waste activity” but including any activity described as a “waste facility”). | The application does not involve scheduled activities | No |
| | ss 43(d), 55 and 122 | Environment protection licences to control carrying out of non-scheduled activities for the purposes of regulating water pollution resulting from the activity. | The application does not involve non- scheduled activities that would generate water pollution | No |

| | | | | |
|---|---|---|---|---|
| Roads Act 1993 | s 138 | consent to—<br>(a) erect a structure or carry out a work in, on or over a public road, or<br>(b) dig up or disturb the surface of a public road, or<br>(c) remove or interfere with a structure, work or tree on a public road, or<br>(d) pump water into a public road from any land adjoining the road, or<br>(e) connect a road (whether public or private) to a classified road | There are no works required to be carried out on a classified road | No |
| Rural Fires Act 1997 | s 100B | authorisation under section 100B in respect of bush fire safety of subdivision of land that could lawfully be used for residential or rural residential purposes or development of land for special fire protection purposes | The application does not involve subdivision for a residential use or a special fire protection purpose | No |
| Water Management Act 2000 | ss 89, 90, 91 | water use approval, water management work approval or activity approval under Part 3 of Chapter 3 | The proposed development is located approximately 47 metres from the nearest watercourse at the closest point and does not necessitate a controlled activity approval. The application does not involve a water use approval or water management work approval | No |

## 1.2 Scope of the report

The contents of this Statement have been prepared in accordance with *Schedule 1 Forms Part 1 Development Applications* of the *Environmental Planning and Assessment Regulation 2000 w*hich specifies that a statement of environmental effects must indicate:

*(a) the environmental impacts of the development,*

*(b) how the environmental impacts of the development have been identified,*

*(c) the steps to be taken to protect the environment or to lessen the expected harm to the environment,*

*(d) any matters required to be indicated by any guidelines issued by the Planning Secretary for the purposes of this clause.*

This statement is accompanied by the documents listed in Table 2 which support the development application and have been submitted under separate cover. This documentation is submitted in accordance with *Schedule 1 Forms Part 1 Development Applications* of the *Environmental Planning and Assessment Regulation 2000.*

Note that the findings and recommendations of expert reports that accompany the application are summarised in this Statement. Further information about these matters should be sought from the original documents.

**Table 2: Development application documents**

| Plan/Doc No. | Plan/Doc Title | Prepared by | Issue | Date |
|---|---|---|---|---|
| WWL1C-G-0100 | Wyalong 5MW Solar Farm Development Application | ITP Renewables | - | - |
| WWL1C-G-0400 | Location Plan, Site Plan | ITP Renewables | 3 | 24/08/21 |
| WWL1C-G-2100 | General Arrangement Plan | ITP Renewables | 3 | 24/08/21 |
| WWL1C-G-2200 | Site Elevations | ITP Renewables | 1 | 23/08/21 |
| WWL1C-C-4300 | Inverter Footing Details | ITP Renewables | 1 | 23/08/21 |
| WWL1C-C-4310 | BESS Footing Details | ITP Renewables | 1 | 23/08/21 |
| WWL1C-C-5300 | Fencing Details | ITP Renewables | 1 | 23/08/21 |
| WWL1C-C-5301 | Gate Details | ITP Renewables | 1 | 23/08/21 |
| WWL1C-C-6300 | Access Path Details | ITP Renewables | 1 | 23/08/21 |
| WWL1C-C-7300 | Landscape Details | ITP Renewables | 1 | 23/08/21 |
| WWL1C-E-3400 | Nextracker Array Detail | ITP Renewables | 1 | 23/08/21 |
| WWL1C-E-4300 | Inverter Station Details | ITP Renewables | 1 | 23/08/21 |
| WWL1C-E-5300 | BESS Station Details | ITP Renewables | 1 | 23/08/21 |
| WWL1C-E-5310 | DC-DC Skid Details | ITP Renewables | 1 | 24/08/21 |
| MAC180781-18RP1 | Noise Assessment | Muller Acoustic Consulting Pty Ltd | - | 13/08/21 |
| TX15839.00-01.rpt | Traffic Assessment Report | Triaxial Consulting Ltd | 3 | 07/08/21 |
| 18105488-024-Rev0 | Water Assessment | Golder Associates Pty Ltd | 1 | 05/08/21 |
| - | Glare and Glint Assessment | ITP Renewables | 1 | 25/08/21 |

| Plan/Doc No. | Plan/Doc Title | Prepared by | Issue | Date |
|---|---|---|---|---|
| - | Waste and Decommissioning Assessment | ITP Development Pty Ltd | 1 | 20/07/21 |
| - | Fire Assessment | ITP Development Pty Ltd | 1 | 20/07/21 |
| - | Biodiversity Inspection Report | Red-Gum Environmental Consulting Pty Ltd | - | 12/08/21 |
| - | Landscape Character and Visual Impact Assessment | Zenith Town Planning Pty Ltd | - | 31/08/21 |
| - | Project cost estimate | ITP | - | 18/08/21 |

## 1.3 The proponent

The proponent for the proposed solar farm is ITP (Development) Pty Ltd. ITP (Development) is a private sector organization based in Canberra and Sydney, which was established in 2003. It is part of the IT Power Group which was formed in 1981 in the UK to bring together specialists in renewable energy, energy efficiency and carbon markets. IT Power offers expertise in renewable energy and energy efficiency, including research, development and implementation, managing and reviewing government incentive programs, high level policy analysis (including carbon markets), engineering design and project management.

## 1.4 Justification

Solar energy is energy created by the heat and light of the sun. Solar power is produced when this energy is converted into electricity or used to heat air, water, or other substances. Australia has the highest average solar radiation per square metre of any continent in the world. Despite uncertainty regarding energy policy, the Commonwealth and NSW Governments have recognized the need to supplement energy derived from fossil fuels with energy generated from renewable sources. Alternative energy supply may be sourced from solar photovoltaic, geo-thermal, solar thermal, wave and tidal action, and wind.

The development of solar photovoltaic power is well underway in NSW and across Australia. This growth in the local solar PV sector continues to provide a significant boost for Australia's regional economy with renewable infrastructure development estimated to create upwards of 2,300 direct jobs plus indirect employment.

According to the Australian Renewable Energy Agency (ARENA), the deployment of household solar PV that generates about 5 kW is expected to continue and at the same time an increase in

rooftop solar PV installations on commercial premises generating around (10-100 kW) is expected. Large scale solar PV is also rapidly expanding in Australia with several solar farms being constructed that will have the capacity to generate over 50MW. The proposed solar farm aims to fill the gap in the mid-sized plants. It will generate 5MW of AC power and contribute to renewable energy supply to supplement electricity generation from coal, oil and gas.

The proposed development is in accordance with relevant objects of the *Environmental Planning and Assessment Act 1979* in that it will assist to generate power to be distributed to residents of NSW thereby promoting the social and economic welfare of the community in a manner that manages and conserves natural resources. The West Wyalong Solar Farm will further the goals of sustainability, and the orderly and economic use of land.

## 1.5 Electromagnetic radiation

The information presented in this section has been sourced from the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA). It includes a description of the type of electromagnetic radiation that may be produced by the generation and distribution of electricity.

The generation, distribution and use of electricity can produce extremely low frequency (ELF) electromagnetic fields (EMF) from electrically charged particles. The electric field is produced by the voltage whereas the magnetic field is produced by the current. The strength of the electric field is measured in units of volts per metre whilst the strength of the magnetic field is expressed in units of tesla (T), microtesla (μT), gauss (G) or milligauss (mG).

ELF EMF is produced by both natural and artificial sources. Naturally occurring ELF EMF is associated with atmospheric processes such as ionospheric currents, thunderstorms and lightning. Artificial sources are the dominant sources of ELF EMF and are usually associated with the generation, distribution and use of electricity at the frequency of 50 or 60 Hz. The widespread use of electricity means that people are exposed to ELF electric and magnetic fields in the home, in the environment and in the workplace.

According to the Australian Radiation Protection and Nuclear Safety Agency, which maintains continual oversight of emerging research into the potential health effects of the EMF exposure, there is no established evidence of health effects from exposure to electric and magnetic fields from powerlines, substations, transformers or other electrical sources, regardless of proximity.

# 2. SITE DESCRIPTION AND CONTEXT

## 2.1 Description

The site of the proposed West Wyalong Solar Farm is described as Lot 563 DP 753135, No 364 Wargin Road, Wyalong, NSW. The property is located approximately 2.8 kilometres south of Wyalong town centre and about 2.9 kilometres from the centre of West Wyalong. The development site is irregular in shape with a total area of 34.92 hectares. The location of the site relative to the towns of Wyalong and West Wyalong is shown in Figure 1 below.

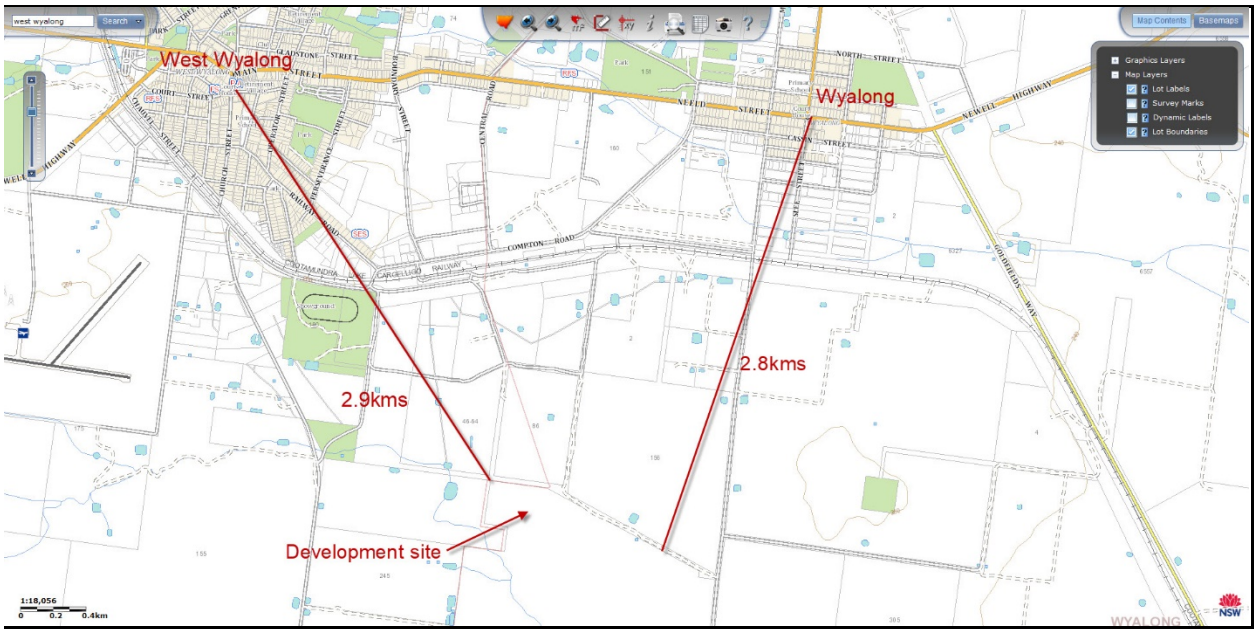



**Figure 1: Locality map. Source: SIX Maps, 2021**

The property has been fully cleared other than a cluster of paddock trees near the south-western corner. It is currently under crop. There are no structures on the site. Entry is off Wargin Road at the eastern end of the site. Trees line a road reserve along the northern boundary and the eastern half of the southern boundary. An unformed road reserve adjoins the western boundary. Yiddah Creek crosses the adjoining lot at the south-western corner of the development site but does not encroach on Lot 563. The topography of the development site is relatively flat with a very slight cross fall to the south towards Yiddah Creek.

A 22kV power line runs north-south within the reserve of Wargin Road which connects to the Essential Energy West Wyalong Zone Substation.

**Plate 1: Looking west towards the development site from the entry gate at the north-east corner**

**Plate 2: Looking west towards the development area**

## 2.2 Context

Bland local government area is located in the Central West region of NSW. It is 8,557.7 square kilometres in area and includes the administrative centre of West Wyalong located on the Newell Highway and the towns and villages of Wyalong four kilometres to the east, Barmedman, Mirrool, Naradhan,, Tallimba, Ungarie and Weethalle. The following history and description of the area has been sourced from the Bland Shire Council website https://www.blandshire.nsw.gov.au/Visitor-Information

*The original occupants of the district were the Wiradjuri people.*

*Explorer John Oxley was the first European to investigate the area in 1817, proclaiming that "From want of timber, grass and water, it would never be inhabited by civilised man".*

*Despite this statement squatters began to settle the district in 1833 recognising the area's agricultural potential. Vast sheep and cattle runs were introduced and the area became known as "The Blands" after a Sydney doctor.*

*It was not until Joseph Neeld discovered gold in 1893 that a centralised settlement developed. The town of Wyalong was laid out in 1894 to service the new population of up to 10,000. However a settlement to the west at the 'Main Camp' had already developed which also boasted the 'White Tank', the only established water supply. Hence in 1895 West Wyalong was officially laid out.*

*West Wyalong's crooked Main Street reflects these early days as it follows the original bullock track that curved around trees and gold diggings. The Wyalong fields were reported as one of the most productive gold fields in the NSW until the 1920s.*

The character of the landscape near the site of the West Wyalong Solar Farm has been significantly modified since European settlement for the purposes of agriculture and rural industry. The landscape in the immediate vicinity of the development site is generally flat and cleared of vegetation. Some regrowth or remnant native vegetation exists along road reserves, creek lines and property boundaries.

Neighbouring development comprises rural lifestyle dwellings, farm dwellings and outbuildings, agricultural uses, an extractive industry and crop silos.

The development site is about 2,.5 kilometres from the edge of the urban area of Wyalong. Some rural lifestyle dwellings are located between the Cootamundra-Lake Cargelligo rail line and the site with a large area of unsubdivided rural residential land to the north-west of the site.

**Plate 3: looking towards the quarry and ancillary buildings to the south-east**

**Plate 4: Silos in Wyalong**

**Plate 5: Rail line crossing on Wargin Road**

Figure 2 is an extract from the topographic map for land in the vicinity of Wyalong that shows the location of settlements, transport infrastructure, dams, cadastre and waterways. The location of the development site is indicated by a blue star. The West Wyalong aerodrome is located approximately 3 kilometres west of the development site.

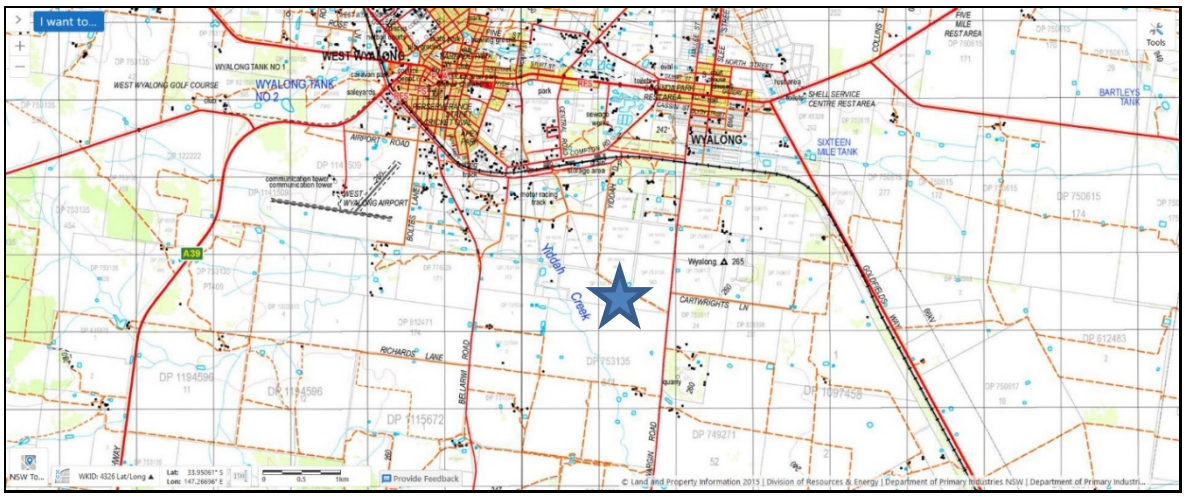



**Figure 2: Extract from the topographic map. Source: Land & Property Information 2015**

An aerial image of the site and surrounding land is shown in Figure 3 below which is dated 25 April 2011. The development site is edged red.

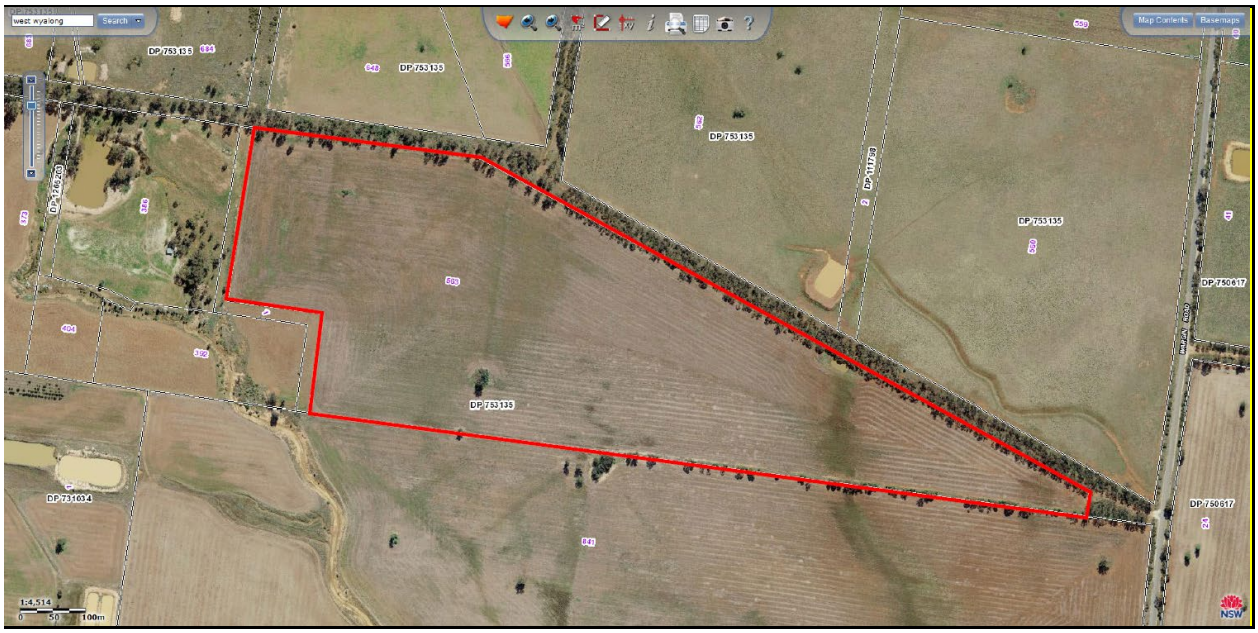



**Figure 3: Aerial image. Source: SIX Maps, 25 April 2011**

## 2.3 Climate

Global solar exposure is described by the Australian Bureau of Meteorology as being the total amount of solar energy falling on a horizontal surface. The daily global solar exposure is the total solar energy for a day. Typical values for daily global solar exposure range from 1 to 35 MJ/m$^2$ (megajoules per square metre). The values are usually highest in clear sun conditions during the summer, and lowest during winter or very cloudy days. Global solar exposure coincides with seasons – the longer the daylight hours the greater the solar radiation due to the tilt of the earth during summer months. Rainfall is spread relatively evenly across the year and so does not appear to impact on the level of solar radiation.

Solar exposure estimates are important for a wide range of applications, including for agriculture, power generation and solar heating system design and use. This climatic information sourced from the Australian Bureau of Meteorology indicates that the global solar exposure, or solar radiation, is sufficient to support power generation in the proposed location which benefits from the presence of electricity power lines in the vicinity of the development site. The map below (Figure 4) shows the average daily hours of sunshine across Australia. Bland LGA receives an average of between 7 and 8 hours of sunshine each day.

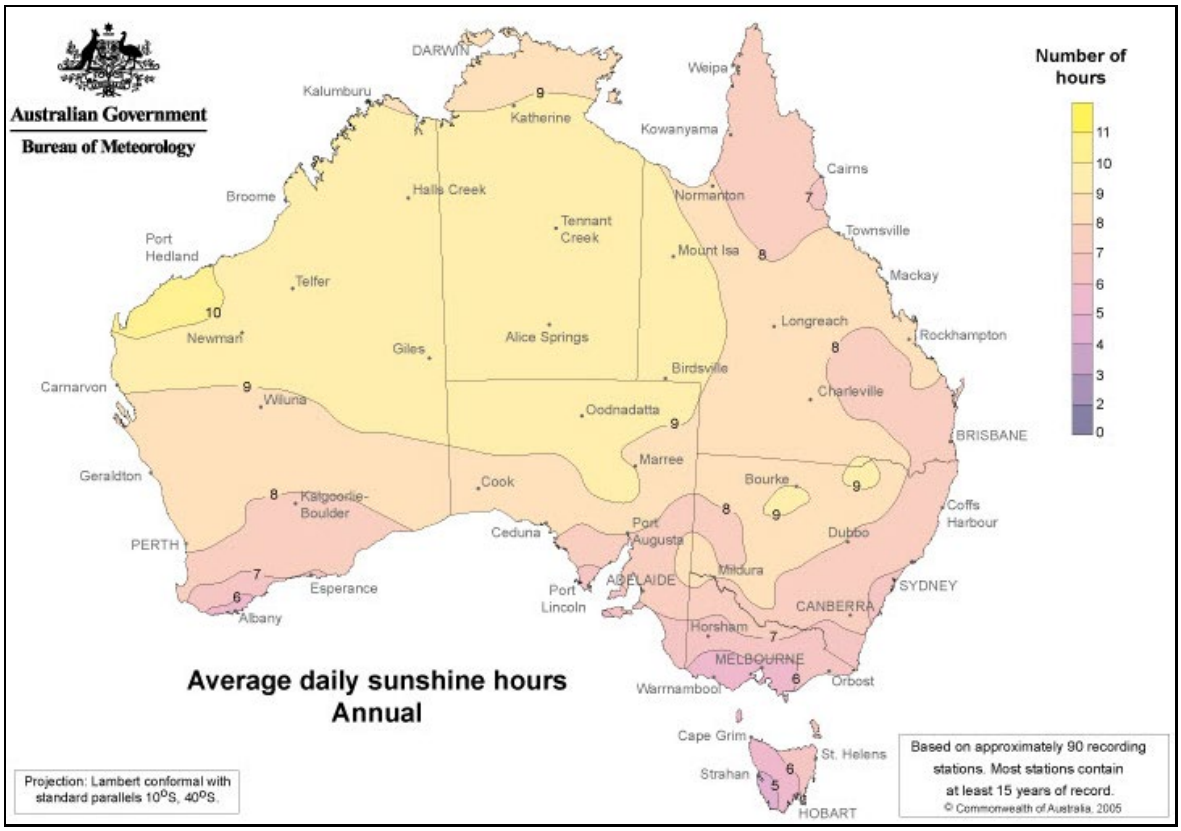



**Figure 4: Average daily sunshine hours. Source: Australian Bureau of Meteorology**

The mean monthly global solar exposure measured at the Wyalong Post Office station (station number 073054), the closest measuring station to the solar farm site, is given in Table 3 below. The annual mean daily global exposure for 2020 was 17.6MJ/m$^2$.

**Table 3: Mean monthly global solar exposure at Wyalong Post Office, 2020**

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Monthly mean | 27.3 | 22.6 | 18.6 | 12.5 | 11.5 | 9.3 | 10.2 | 12.7 | 16.8 | 19.5 | 24.9 | 25.5 |

This data demonstrates that Wyalong receives adequate solar energy to harness and convert to clean electricity and is eminently suitable for the development of a solar photovoltaic farm.

# 3. DETAILS OF THE PROPOSED DEVELOPMENT

## 3.1 Overview

The proposed development comprises a solar farm and ancillary facilities with an AC capacity of 5MW on 16.17 hectares, giving a coverage of 46% of the total site.

The capital investment value of the solar farm is estimated to be $8.67 million.

## 3.2 The array

There are proposed to be approximately 12,000 solar modules installed in 138 rows that are 105 metres long and 2.2 metres wide running east to west. There is approximately 6.25 metres spacing between each row. The array is proposed to be placed at the western section of the property.

The array is to be contained within an area with perimeter dimensions of 449 metres across the northern side, 446 metres stepped along the southern side, 380 metres stepped along the eastern side and 417 metres stepped along the western side.

Each row of PV modules will rotate to track the sun across the sky from east to west each day. The hub height of each tracker is 1.5 metres with the peak of the modules reaching an approximate height of 2.75 metres when the array is fully tilted to 60 degrees from horizontal, i.e. in the early morning and late evening.

The layout and exact placement of the array is shown on General Arrangement Plan (Drawing No WWL1C-G-2100).

## 3.3 Inverters and ancillary items

Two 3.4MW AC inverter stations and a converter-DC coupler will be installed at the western end of the array and mounted on a 12.2 metre long skid. The inverter stations incorporate high and medium voltage switchgear. Allowance is made for a 2.9 metre high battery energy storage facility (BESS) alongside the inverter stations. A 2.5 metre high kiosk is to be located at the south-eastern corner of the array. Underground high voltage cables will connect to the kiosk which typically includes additional switchgear, a transformer and busbars to connect high and medium voltage cables to the existing grid.

The inverter will be connected by way of an overhead power line to the existing 22kV power line that runs north-south along the western side of the reserve of Wargin Road to inject power to the electricity grid at the Essential Energy West Wyalong Zone Substation. Dial-before-you-dig investigations would be carried out prior to commencing all subsurface work.

## 3.4 Construction and maintenance

The mounting system for the PV panels is constructed on piles that are driven into the ground using a vibrating pile driver. The piles will be driven approximately 1.5 to 3.5 metres into the ground, as to be confirmed by a geotechnical and structural engineer.

During construction there is expected to be 50 personnel on site working from 7.00am – 4.00pm Monday to Friday. The construction is expected to take approximately three months. Should it be necessary to carry out work outside these hours then activities would be limited to those generating low noise emissions.

Once operational the site will be unmanned. Maintenance is expected to be carried out quarterly by a crew of 2 to 3 people. Maintenance workers would not be required to remain on site. Cleaning of the PV panels would be carried out on an annual basis to maximise the performance of the system. This is done using water brought into the site and a sponge mop.

## 3.5 Services

Reticulated water and sewer services are not required to be provided to the solar farm as there are no permanent offices or amenities proposed on site. Portaloos for wastewater disposal (see https://www.kennards.com.au/site-equipment/showers-toilets.html ) and water supply by way of a portable tank or cart (see https://www.kennards.com.au/site-equipment/water-tank.html ) are proposed to be installed during the construction phase.

## 3.6 Access and car parking

Existing access is by way of a driveway off Wargin Road at the eastern end of the property. Once within the property the western section of the site is to be accessed using an existing track that runs parallel to the southern boundary. This will be enlarged to be 4 metres wide.

A temporary materials laydown area and temporary car parking area will be located at the centre west of the array. It is expected that car parking for up to 40 small vehicles will be needed to cater for the 50 construction workers at the rate of 0.8 spaces per worker.

Expected traffic generation is given in Table 4 below. It is proposed that heavy vehicles only access the site between 10.00am and 2.00pm.

**Table 4: Expected traffic generation**

| Phase | Description of vehicles | Expected vehicle movements |
|---|---|---|
| Establishment | 10-15 trucks and trailers to deliver gravel with 4 to 5 workers with 2 persons per vehicle | 5 vehicle trips per day for 2 to 3 days |
| | Light vehicles | 6 to 8 vehicle trips per day |
| Construction | 45 articulated trucks (maximum 26m length) to deliver equipment | 4 vehicle trips per day non-peak |
| | 40 light vehicle one-way trips for 50 construction workers (worst case without shuttle bus and one person per vehicle) | 40 vehicle trips per day |
| | Potential shuttle bus service to and from the site | 2 vehicle trips per day |
| Commissioning | Light & 12 metre heavy rigid vehicles for 10 workers with 2 persons per vehicle | 5 vehicle trips per day |
| Operational | 1 light vehicle for maintenance contractor | 1 vehicle trip every 2 to 3 months |

## 3.7 Landscaping

It is proposed to plant a 3 metre wide vegetated screen using a mix of native shrubs and ground covers that grow to a maximum height of 3 metres on the inner side of the security fence for ease of maintenance on the western and southern sides for the full extent of the array. The plants would provide a continuous screen upon maturity. Existing vegetation along the road reserve to the north of the site and along part of the southern boundary would provide adequate screening for properties to the north and south-east and from Wargin Road.

Land that is disturbed during construction of the solar farm and not to be used for access or other maintenance purposes will be sown with grasses following completion of construction. Planting will also assist to minimise site disturbance and contribute to the rural landscape and character of the immediate area.

Plantings will be maintained and watered by maintenance crew on a regular basis. The planting will be carried out whilst construction takes place to enable use of the hired portable tank or cart that will provide water supply to the site. Construction will take approximately 3 months so

regular watering during that period would ensure the establishment of plants. The use of native plants means that watering requirements once established would be minimal and would be done once every 2 or 3 months by the maintenance crew. There would be nil impact on Council's infrastructure and no augmentation of services is proposed. Bore water would be sourced to maintain the plants if available, otherwise water would be brought onto the site in tanks fixed to utility trays.

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. Livestock grazing is being trialled elsewhere and may be carried out around and beneath panels in the future.

## 3.8 Security

The solar farm is to be enclosed within a 1.8 metre high security fence The proposed fence is to be chain mesh steel topped with three rows of barbed wire giving a total height of 2.3 metres.

The security fence is to be placed along the northern, southern and western boundaries for the extent of the array. The array is to have a setback to the northern boundary of 65 metres, 10 metres from the eastern edge of the security fence which is 895 metres from the eastern boundary, 21 metres from the southern boundary and 13 metres from the western boundary at the north-western corner. The fence is to be setback approximately 47 metres from the top of the bank of Yiddah Creeek.

The solar array is to be setback 10 metres from the landscaping giving a total setback of 13 metres from the security fence. This will act as an asset protection zone ad provide access between the array and the security fence for fire-fighting vehicles in the event of bushfire.

The setbacks and positioning of the array are shown on the Site Plan (Drawing No BBI1A-G-0400).

Security lighting is not proposed to be installed.

**Plate 6: Example of security fencing**

## 3.9 Waste management and decommissioning

A *Waste and Decommissioning Assessment* of the waste generated during construction and operation of the proposed solar farm has been carried out by ITP Renewables to determine the appropriate means of waste disposal and recycling. The findings of the assessment are summarized below. Reference should be made to the *Waste and Decommissioning Assessment* that is submitted with the development application for further information or clarification of any matter concerning the assessment and recommendations.

The largest amount of waste will be generated during the construction phase and be classified as general solid waste (non-putrescible). Wastes would include wooden pallets, cardboard,

plastics, green waste and domestic waste. Construction of a solar farm would not generate any putrescible waste products. Minimal waste would be generated when the farm is operational other than small amounts of replacement parts and packaging required for maintenance and repair works.

Local waste management facilities and capacities are identified in the assessment. Technology for recycling of PV panels is advancing rapidly worldwide and while recycling options currently exist, they are likely to be more advanced and readily available at the time of decommissioning. Options for recycling of PV panels should be reviewed as the project progresses.

Estimates of waste materials and proposed management arrangements for each phase of the development project are provided in Table 5 below.

**Table 5: Estimated waste materials and waste management arrangements**

| Phase | Waste material | Proposed management |
|---|---|---|
| **Construction** | • Packaging waste such as cardboard, wood pallets, plastic wrap, scrap metal, general waste including approximately 860 wooden pallets and carboard packing boxes<br>• Concrete waste during setting of footings and mounts<br>• Electric cable waste and cable reels<br>• Plastic pipe offcuts/scrap<br>• Empty drums and containers (minimal quantities)<br>• Minimal used lubricating oil and filters<br>• Unused or spent chemicals | Waste products will be sorted and stored separately in skip bins located in the materials laydown area in accordance with EPA Waste Classification Guidelines. This will facilitate disposal through appropriate waste streams as follows:<br><br>Recycling:<br>• Steel and scrap metal (recycled)<br>• Timber/cardboard (recycled)<br>• Recyclable plastics<br><br>Landfill:<br>• General wastes and plastic (other than where recyclable)<br><br>All recycling and general waste would be collected and taken to off-site waste management facilities for disposal<br><br>Fluids would be recycled where possible or taken to off-site waste management facilities for disposal |

| Phase | Waste material | Proposed management |
|---|---|---|
| **Operational** | • Minimal volumes of domestic wastes such as office consumables, paper, plastics and glass<br>• Waste resulting from maintenance or replacement of equipment | All waste materials would be taken to off-site waste management facilities for recycling or disposal |
| **Decommissioning** | • PV modules (12,000 panels) and supporting poles and mounts<br>• Glass for panels (270 tonnes)<br>• Silicon for wafers (40 tonnes)<br>• Inverters / transformers / batteries<br>• PV boxes, skids, scrap metal (860 tonnes)<br>• Electrical cables<br>• Fencing<br>• Storage containers (two 40-foot containers) | The solar farm infrastructure would be dismantled into separate waste products such as metals, glass, plastics and concrete.<br><br>All products would be sorted on site into recyclable and general waste streams in accordance with the EPA Waste Classification Fencing and storage containers would be removed from the site and reused |

Waste management should be predicated on the international hierarchy of waste management to avoid/reduce, reuse, recycle, recover, treat and dispose of waste products to avoid or reduce waste materials where possible, and to re-use, recycle and recover the majority of waste materials generated during each of the construction, operational and decommissioning phases.

It is recommended that a waste management plan be developed to provide detailed procedures to manage the waste stream. The plan should contain:

- Strategies to reduce waste during all project phases,
- Recycling, re-use and recovery strategies and opportunities,
- Classification of all waste streams with a tracking register and details,
- On site recycling management,
- Allocation of responsibilities for recycling, re-use and disposal, and
- Reporting and notification procedures if a waste incident occurs and there is a threat to the environment.

The expected operating life of the West Wyalong Solar Farm excluding the construction and decommissioning phases is projected to be 35 years. Upon decommissioning all infrastructure,

including cabling and panels and mounting frames including footings and inverters would be disassembled and removed from the site. The bulk of materials that are used in solar panel manufacturing include glass (75%), aluminium (8%), silicon (5%) and copper (1%). There are also small amounts of silver, tin and lead. These materials are recoverable.

Decommissioning will involve:

- Notification of stakeholders (e.g. Essential Energy, Bland Shire Council) of proposed de-energisation,
- De-energisation of the solar farm and disconnection of assets,
- Removal of PV modules and associated infrastructure,
- Removal of electrical wiring,
- Remediation of land.

Relevant equipment will be brought on to site to facilitate decommissioning, including amenities for site crew for the duration of the works. This equipment may include mobile cranes, excavators, skid steers, loaders, rollers/compactors, pile drivers, telehandlers, skip bins, water carts, temporary shipping containers for storage, site office and site ablution blocks.

Full details of the process are provided in the *Waste and Decommissioning Assessment* prepared by ITP Renewables. Reference should be made to that report for an explanation of each step in the decommissioning process.

# 4. STATUTORY FRAMEWORK

## 4.1 Legislation

### 4.1.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment (EPA) Act 1979* 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 EPA Act are intended to guide land planning and management. Section 4.15 of the Act lists matters for consideration when assessing and determining an application for development.

### 4.1.2 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* introduced the *Biodiversity Offsets Scheme* which is used to determine whether the *Biodiversity Assessment Method* is necessary to assess the impacts of a development proposal on threatened species, endangered ecological communities and habitats. Determining whether a *Biodiversity Development Assessment Report* is required under the

*Biodiversity Conservation Act 2016* and subsequently whether the *Biodiversity Offsets Scheme* would apply to the proposed works is subject to three steps.

- The first step is to identify whether the site is mapped on the *Biodiversity Values Map*.
- The second step is to estimate whether the extent of native vegetation to be cleared for the proposed development is above the threshold which in this case is 1 hectare.
- The third step is to carry out a test of significance to predict whether impacts on biodiversity are likely to be significant.

Under the *Biodiversity Offsets Scheme* offset obligations may apply whereby the biodiversity assessment finds that the removal of vegetation to facilitate the development will have significant impacts on flora. These offsets are in the form of credit obligations whereby payment is made to a biodiversity conservation fund which enable vegetation removal and provides funds to assists to preserve the same vegetation community elsewhere. Credit obligations also apply to fauna species where particular species are likely to be living in or frequenting the property. These matters are addressed in section *5.1 Biodiversity* of this Statement.

#### 4.1.3 Water Management Act 2000

The *Water Management Act 2000* includes provisions to control or permit works near a watercourse or stream. Works within specified distances of the top of the bank of a watercourse may necessitate issue of a *controlled activity approval* by the Natural Resources Assessment Regulator. Impacts on surface and groundwaters are addressed in *5.3 Water resources* of this Statement.

#### 4.1.4 Local Land Services Act 2013

The *Local Land Services Act 2013* regulates the clearing of native vegetation on rural land and where an activity is permitted without Council consent. There are two broad categories of land under the LLS Act - Category 1 (Exempt) land and Category 2 (Regulated, Vulnerable or Sensitive) land which are shown on the Native Vegetation Regulatory Map .

Clearing may be authorised on Category 1 (Exempt) Land but only where the activity is permitted without consent and when no other permit is required under other legislation. The onus is on the applicant to ensure they are not committing an offense under other legislation. If located on Category 2 (Regulated, Sensitive or Vulnerable) Land, the clearing may be authorised as an Allowable Activity or under the Land Management (native vegetation) Code within the *LLS Act*. If the clearing on Category 2 Land is not an Allowable Activity or is not authorised under the Land Management (native vegetation) Code, the clearing will need to be offset under the Biodiversity Offset Scheme. This means a Biodiversity Development Assessment Report is needed and the

clearing will need to be approved by the Native Vegetation Panel. The LLS Act does not apply to the proposed solar farm as development consent is required to be obtained to enable the works to proceed.

### 4.1.5 National Parks and Wildlife Act 1994

The objectives of the *National Parks and Wildlife Act 1974* are to conserve and protect habitat, ecosystems, biodiversity, landforms, landscapes and objects, places or features of cultural value in NSW. Under the NPW Act, it is an offence to knowingly harm or desecrate an Aboriginal object. Harm includes destroy, deface or damage an Aboriginal object or Aboriginal Place, and in relation to an object, move the object from the land on which it has been situated. Aboriginal objects include sites, relics or cultural material such as scar trees, middens and ancestral remains.

The NPW Act can also protect areas of land that have no Aboriginal objects, that is, they may have no physical evidence of Aboriginal occupation or use. These areas can be declared 'Aboriginal places' if they have spiritual, natural resource usage, historical, social, educational or other type of significance.

Anyone who exercises due diligence in determining that their actions will not harm Aboriginal objects has a defence against prosecution for the strict liability offence if they later harm an object. The *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* provides a process whereby a reasonable determination can be made as to whether or not Aboriginal objects will be harmed by an activity, whether further investigation is warranted and whether the activity requires an application for an Aboriginal Heritage Impact Permit. Due diligence has been carried out and is explained in section *5.8 Heritage* of this Statement.

### 4.1.6 Heritage Act 1977

The aims of the *Heritage Act 1977* are to identify, protect and conserve items of State heritage significance. Provisions of the Heritage Act facilitate the establishment of a State Heritage Register for the listing of items of State significance and the preparation of conservation management plans for these items. The Heritage Act also sets out the procedures for the approval of works relating to items listed on the State Heritage Register. Impacts on listed heritage items are addressed in section *5.8 Heritage* of this Statement.

### 4.1.7 Noxious Weeds Act 1993

The aims of the *Noxious Weeds Act 1993* are to prevent the establishment, reduce the risk of spread and minimise the extent of noxious weeds within NSW. The extent of noxious weeds and

procedures to eradicate weed infestation from the development site are addressed in section *3. Details of the proposed development* in this Statement.

#### 4.1.8 Roads Act 1993

Under section 138 of the Roads Act 1993, consent is required to carry out works in, on or over a public road, remove or interfere with a structure, work or tree on a public road or connect a road to a classified road. The consent of Transport for NSW is required in the case of works relating to a classified road. Traffic impacts are addressed in section *5.6 Traffic and access* of this Statement.

#### 4.1.9 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* aims to protect nationally and internationally important flora, fauna, ecological communities and heritage places. The approval of the Commonwealth Minister for the Environment is required for actions that may have a significant impact on matters of national environmental significance. The *EPBC Act* also requires Commonwealth approval for certain actions on Commonwealth land.

An assessment of the potential impact of the proposed works on any matters of national environmental significance under the *EPBC Act* and the need for referral to the Commonwealth is provided in section *5.1 Biodiversity* of this Statement.

### 4.2 State Environmental Planning Policies

#### 4.2.1 State Environmental Planning Policy No 55 – Remediation of Land

*SEPP 55* requires Council to consider whether land is contaminated and to determine whether the proposed use is suitable with or without contamination. Council can require an applicant for development to conduct a preliminary investigation and a subsequent more detailed investigation if warranted. Where contamination exists and remediation is necessary, Council must be satisfied that the remediation will take place before the land is used for the proposed purpose. It is noted that should the preliminary investigation identify contamination on the site then the NSW *Contaminated Land Planning Guidelines* apply to subsequent investigations.

#### 4.2.2 State Environmental Planning Policy (Infrastructure) 2007

The aims of *SEPP (Infrastructure) 2007* are to ensure a consistent and flexible planning system to facilitate the delivery of services. 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. The policy applies to the whole of NSW.

*SEPP (Infrastructure)* 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.

Part 3 Division 4 of the policy relates to electricity generating works and solar energy systems. Section 34(7) enables development for the purpose of a solar energy system to be carried out by any person with consent on any land. The proposed development is permitted with consent by *SEPP (Infrastructure) 2007*.

Clause 45 of *SEPP (Infrastructure) 2007* requires the consent authority to consult with the electricity supply authority where development occurs near electricity infrastructure. If an electricity line runs within an easement on or near the development site, Council is to consult Essential Energy prior to determination of the application.

*Clause 104 - Traffic-generating development* also applies. Schedule 3 triggers a referral to Transport for NSW if the proposed development generates vehicle movements within a specified threshold.

### 4.2.3 State Environmental Planning Policy (Primary Production and Rural Development) 2019

The aims of *SEPP (Primary Production and Rural Development) 2019* are:

*(a) to facilitate the orderly economic use and development of lands for primary production,*

*(b) to reduce land use conflict and sterilisation of rural land by balancing primary production, residential development and the protection of native vegetation, biodiversity and water resources,*

*(c) to identify State significant agricultural land for the purpose of ensuring the ongoing viability of agriculture on that land, having regard to social, economic and environmental considerations,*

*(d) to simplify the regulatory process for smaller-scale low risk artificial waterbodies, and routine maintenance of artificial water supply or drainage, in irrigation areas and districts, and for routine and emergency work in irrigation areas and districts,*

*(e) to encourage sustainable agriculture, including sustainable aquaculture,*

*(f) to require consideration of the effects of all proposed development in the State on oyster aquaculture,*

*(g) to identify aquaculture that is to be treated as designated development using a well-defined and concise development assessment regime based on environment risks associated with site and operational factors.*

The policy applies to *State significant agricultural land,* farm dams and other artificial waterbodies, livestock industries and aquaculture. There is no *State significant agricultural land* listed in the schedule to the policy. It is noted that, separately, the Department of Primary Industries are in the process of preparing mapping of *Important Agricultural Land* in NSW to assist decision-making regarding development on rural land.

### 4.2.4 State Environmental Planning Policy (State and Regional Development) 2011

Development that is state and regionally significant is identified in *SEPP (State and Regional Development) 2011*. Electricity generating works including solar farms which have a capital investment value of more than $30 million, or a capital investment value of more than $10 million and are located in an environmentally sensitive area of State significance, are declared state significant development. Private infrastructure, including electricity generating stations, that have a capital investment value of over $5 million are declared regionally significant and are to be determined by a Regional Planning Panel.

### 4.2.5 State Environmental Planning Policy No. 33 – Hazardous and Offensive

State Environmental Planning Policy No. 33 – Hazardous and Offensive and the Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis require that a Preliminary Hazard Assessment be prepared for potentially hazardous or offensive development. Although SEPP No 33 does not apply to the development of solar farms, ITP Development Pty Ltd has carried out a hazard analysis and risk screening, submitted separately and entitled *Fire Assessment*.

The results of risk screening are that a PHA is not required for dangerous goods to be stored on the site. However, the following management measures have been recommended to be implemented:

- Installing reliable, automated monitoring and control systems, with an alarm and shutdown response capability,
- Taking reasonable and safe measures to prevent the risks of external heat effects in the event of a bushfire,

- Designing appropriate separation and isolation between battery cubicles, and between the BESS and other infrastructure, in accordance with the manufacturers' recommendations, and including gravel set-off areas around the facility,
- Compliance with all applicable Australian codes and standards,
- Preparation of a BESS-specific fire response plan, in conjunction with the NSW Rural Fire Service,
- Installing an adequate automatic fire suppression system integrated into the detection and control system,
- Disposal (and where possible, recycling) of any potentially hazardous material in accordance with the best international practices available at that time, and
- Fuels and pesticides/herbicides in use at the site will be stored at the laydown area in appropriately bunded areas designed in accordance with AS1940-2004.

In terms of fire safety including the threat of bushfire, the report recommends that the facility with battery storage can be made safer through the integration of safety in design principles from bushfire standards including APZ clearances, internal protection areas, comprehensive system fault monitoring, automated fire detection and suppression systems and safety procedures built into WHS policies and procedures to ensure these farm assets and the surrounding area are protected from the risk of fire.

## 4.3 Local Environmental Plans

### 4.3.1 Bland Local Environmental Plan 2011

The property is zoned RU1 Primary Production under *Bland LEP 2011*. The objectives of zone RU1 are:

- *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 ensure that development on land within this zone does not unreasonably increase the demand for public services or public facilities.*

The development is defined as ***electricity generating works*** which means a building or place used for the purpose of making or generating electricity. This use is prohibited in zone RU1.

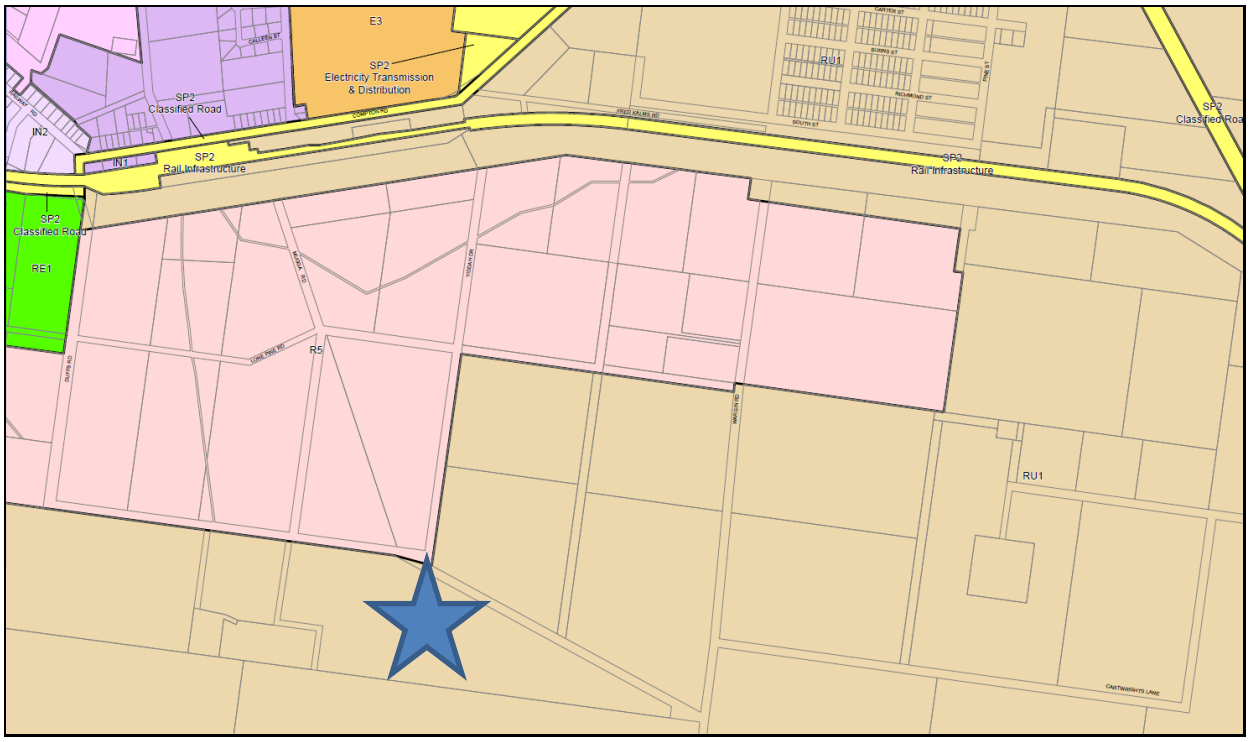



**Figure 5: Land zoning Wyalong. Source: Bland LEP LZN_007F**

Adjoining land is zoned RU1 Primary Production and R5 Large Lot Residential. A minimum lot size of 2 hectares applies to the land that is zoned R5. Subdivision of the adjoining parcel to this MLS has not yet occurred.

The following clauses of *Bland LEP 2011* apply to the proposed development:

*Clause 6.1 Essential services*

This clause requires a consent authority to be satisfied that any of the following services that are essential for the development are available or that adequate arrangements have been made to make them available when required:

*(a) the supply of water,*
*(b) the supply of electricity,*
*(c) the disposal and management of sewage,*
*(d) stormwater drainage or on-site conservation,*
*(e) suitable road access.*

The supply of reticulated water and sewerage services is not required for the proposed development. However, portaloos for wastewater disposal (see

https://www.kennards.com.au/site-equipment/showers-toilets.html ) and water supply by way of a portable tank or cart (see https://www.kennards.com.au/site-equipment/water-tank.html ) are proposed to be installed during the construction phase.

Electrical services are available to the site. Stormwater management is proposed to be addressed by controls recommended in this Statement with full details to be provided with the application for a construction certificate. Adequate road access is available off Wargin Road.

*Clause 6.2 Earthworks*

The objective of this clause is 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.

Development consent is required for earthworks unless the earthworks are ancillary to development for which development consent has been given. In deciding whether to grant development consent for development involving ancillary earthworks, the consent authority must consider:

*(a) the likely disruption of, or any detrimental effect on, drainage patterns and soil stability in the locality,*
*(b) the effect of the 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 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 waterway, drinking water catchment or environmentally sensitive area.*

Earthworks associated with the development comprise minor excavation to 150mm to install road base for accessways, 750mm footings for the inverters and security fence strainer posts, 1,000mm footings for the access gate and 1,500mm to 3,500mm footings for the panel mounting frames. Cable trenching of 600mm for low voltage cables and 1,200mm deep trenching is also to be carried out.

All of these earthworks are ancillary to the development of a solar farm and are not expected to impact adversely on drainage, future use of the land if the facility if decommissioned, relics, the natural environment or adjoining developments.

There are no draft environmental planning instruments that are on exhibition or have been exhibited but not yet published that apply to the site, or that relate to the proposed development of electricity generating works.

## 4.4 Development Control Plans

### 4.4.1 Bland Shire Development Control Plan 2012

*Bland Shire DCP 2012* provides guidance for development, however, the DCP does not contain any provisions that apply to the development of a solar farm. Power generation using solar photovoltaic panels is essentially a primary production use that meets the objectives of the rural zone RU1 and that requires a rural location in the same way as mining or extractive industries. Solar panels simply harvest sunlight (solar radiation) and convert that resource to electricity in the same way that farming harvests sunlight and water to grow crops. There is no secondary industry or manufacturing involved in the generation of power by sunlight.

Chapter 9 Primary Production aims to protect agricultural land and to remove threats to ongoing agricultural uses. Certain acceptable solutions of Chapter 9 Primary Production apply to non-agricultural development in zone RU1 Primary Production. The performance criteria and acceptable solutions of chapter 9 are given in Table 6 with a comment regarding compliance of the proposed solar farm with each acceptable solution.

**Table 6: Chapter 9 Primary Production of Bland Shire DCP 2012**

| Performance Criteria | Acceptable Solution | The Proposed Development |
|---|---|---|
| **SITE INTEGRATION** | | |
| ***Adjoining Uses***<br>Consideration is given to the nature of adjoining uses so as to obtain optimum amenity and privacy. | Set back dwellings and other buildings at least 150 metres from adjoining boundaries, where possible;<br>Allow for ample buffers between possible sources of noise, odour and air emissions, dust generating uses and potential pollutants such as aerial spraying etc (see Table 3.1 Chapter 3 for additional information on buffers). | There are no dwellings or buildings associated with the proposed solar farm. The inverter, BESS and kiosk are housed within a metal structure mounted on a skid. There will be nil emissions or pollutants produced by the solar farm. |
| ***Prevailing Winds***<br>Developments are located and designed to address prevailing winds | Orient and design developments to reduce the impact from hot summer winds and cold winter winds; | Winds are not a negative element in the context of a solar farm and sunlight access it to be maximised. Landscaping proposed is to screen |

| | | |
|---|---|---|
| | □ Locate potentially odorous uses down wind of the main residential part of the property and adjoining properties;<br>□ Be aware of neighbouring uses such as feedlots and plan to locate new residential uses so as to address potential impacts; and<br>□ Use trees as windbreaks around development to mitigate adverse effect of prevailing winds. | the solar farm from neighbouring developments |
| ***Existing Opportunities***<br>Developments are located in order to make best use of existing infrastructure and resources. | □ Locate development in close proximity to existing development where appropriate;<br>□ Locate development upon the poorer quality agricultural land, keeping the remaining land for agricultural production;<br>□ Locate development in close proximity to existing services, access road, etc. | The site of the solar farm has been selected to enable connection to the 22kV power line that feeds into the Essential Energy West Wyalong Zone Substation. It is located within the property to minimise visual intrusion to neighbouring properties and Wargin Road and will be serviced by an internal access road. It is located at the western end of the property so that the remainder of the property can continue to be utilised for agriculture without interference |
| ***Natural Hazards***<br>The impacts of natural hazards, such as fire, flood and wind storms are reduced. | □ Design buildings to comply with Planning For Bushfire Protection, where applicable;<br>□ Avoid siting buildings near obvious depressions and watercourses or on flood prone land;<br>□ Identify evacuation and alternative evacuation paths. | The site is not mapped as being bushfire prone, however, defendable space is available within the 10 metre setback between the array and the security fence. It is also proposed that a fire emergency management plan be prepared through liaison with Council, Essential Energy and the Rural Fire Service. |
| **SERVICING** | | |
| ***Water***<br>Water supply capable of servicing the needs of the proposed development in terms of domestic, stock, fire fighting and other needs is available. | □ By providing each dwelling with at least 45,000 litre potable rain water storage, or 20,000 litre potable rain water storage if supplemented by an alternative reliable water supply;<br>□ Using alternative water supplies such as bores and wells for uses other than drinking, cooking and ablution purposes;<br>□ Using other buildings as catchment for freshwater tanks, and connecting water reticulation. | The supply of reticulated water is not required for the proposed development. However, water supply by way of a portable tank or cart (see https://www.kennards.com.au/site-equipment/water-tank.html ) is proposed during the construction phase and to water the landscaping. |

| | | |
|---|---|---|
| ***Electricity***<br>Access to an electricity supply capable of servicing the proposed development. | □ By locating development where ready access to an electricity supply is available; or<br>□ By demonstrating self sufficiency with alternative power sources (e.g. wind, solar power generation systems). | Electricity is available to the site, however, the purpose of the facility is to generate power to feed into the system and directly to the settlement of Wyalong. |
| ***Telecommunications***<br>Access to telecommunications capable of servicing the proposed development is available. | □ By locating proposed developments where they can be serviced by a telecommunication provider; or<br>□ By demonstrating self sufficiency with alternative telecommunication equipment (e.g. satellite technology). | It is not necessary to provide telecommunications to the solar farm which will be unmanned during operations. Maintenance crew can rely on mobile phones. |
| ***Service Corridors***<br>The location of proposed service corridors are chosen to minimise the impact on the environment and the agricultural use of the land. | □ By locating proposed service corridors so as they avoid stands of native vegetation and thus remove the need for land clearing;<br>□ By locating proposed service corridors along fence lines to reduce the impact on the agricultural use of the land. | Underground power lines are proposed to feed to the 11kV power lines. No vegetation is to be removed. |
| **ACCESS** | | |
| ***Sight Distance***<br>There is adequate sight distance to allow safe manoeuvring to and from the property. | Sight distance of at least 150 – 200 metres in each direction is provided for each standard rural access;<br>□ Access roads join the main road at 90°;<br>□ Entrances are located so vehicles do not queue onto the public road (eg setback of gateway). | The new access point off Wargin Road has in excess of 300 metres SISD. It will be designed to enable an internal access track within the property that runs parallel with the southern boundary and does not create queuing on Wargin Road. |
| ***All Weather Access***<br>There is all weather access provided from the development to the public road. | Access is granted and gravelled to a standard where wet weather does not impede two wheel drive vehicles. | The internal access track will be 4 metres wide and graded so that two wheel drive vehicles can gain access for maintenance purposes. |
| ***Access in times of flood***<br>Access is flood free where possible to allow safe transit during and after periods of heavy rain. | □ Establish access roads upon flood free land where possible;<br>□ Provide an alternative route for access in times of flood. | The site is not mapped as flood prone, however, may be subject to inundation during major flood events. Construction and maintenance activities will not be carried out during times of flood. |
| ***Emergency Vehicles***<br>Access for emergency vehicles is available in times of fire, flood and other emergencies. | □ Ensure access is unimpeded by thick timber where possible to enable emergency vehicle | The internal access track will run in a straight line to the array and parallel to the southern boundary. The proposed track will be |

| | | |
|---|---|---|
| | access in fire/high wind situations;<br>□ Access should have an unobstructed width of at least 3 metres; and<br>□ Accesses passing through closely timbered areas should also be provided with 6 metre wide passing bays approximately every 100 metres. | maintained to be accessible to emergency vehicles and kept free of vegetation. |
| ***Property Identification***<br>Property access must clearly identify the property address | The installation of a Rural Address sign as per Council's Rural Addressing Policy. | The site is not to be used for residential purposes. Council may condition that a rural road number be displayed at the entrance. |

There are no variations proposed to *Bland Shire DCP 2012*.

## 4.5 Land use strategies

### 4.5.1 Riverina Murray Regional Plan 2036

The *Riverina Murray Regional Plan 2036* was released in March 2017. It establishes a framework for growth over the next 20 years for the Riverina Murray Region which includes Bland LGA.

The plan supports the protection of high-value environmental assets and aims to develop a strong and diverse economy with supportive communities. The plan contains the following four goals:

1. A growing and diverse economy
2. A healthy environment with pristine waterways
3. Efficient transport and infrastructure networks
4. Strong, connected and healthy communities

A series of directions and actions are to guide land use planning priorities and decisions. Direction 11 is to *promote the diversification of energy supplies through renewable energy generation*. Actions associated with this direction are:

*11.1 Encourage renewable energy projects by identifying locations with renewable energy potential and ready access to connect with the electricity network.*

*11.2 Promote best practice community engagement and maximise community benefits from all utility-scale renewable energy projects.*

*11.3 Promote appropriate smaller-scale renewable energy projects using bioenergy, solar, wind, small-scale hydro, geothermal or other innovative storage technologies.*

Direction 21 is to *align and protect utility infrastructure investment.* It is noted that there are opportunities to provide cost-effective extended and upgraded services for stand-alone alternative energy generation and the use of renewable options such as solar generation.

### 4.5.2 Bland Shire Local Strategic Planning Statement 2040

The *Bland Shire Local Strategic Planning Statement* sets the framework for Bland Shire's land use needs over the next 20-years. The LSPS gives effect to the *Riverina Murray Regional Plan 2036* by implementing the directions and actions at a local level. It comprises priorities and actions to improve economic, social and environmental development. In relation to infrastructure, Council is committed to working with state agencies to promote investment and guide infrastructure improvements to ensure the capacity to facilitate large scale developments such as solar farms.

### 4.5.3 NSW Renewable Energy Action Plan

The *NSW Renewable Energy Action Plan* supports the achievement of the national target of 20% renewable energy by 2020. It aims to position NSW to increase the use of energy from renewable sources at least cost to the energy customer and with maximum benefits to NSW. The plan is predicated on the following three goals:

- Attract renewable energy investment and projects
- Build community support for renewable energy
- Attract and grow expertise in renewable energy technology

These goals are supported by 24 actions which include considering a more strategic and integrated approach to assessment of renewable energy projects and promoting NSW as a leader of research and innovation in renewable energy.

The plan notes that the NSW Government is in the process of streamlining the state planning system and advocates new planning legislation founded on the principle of sustainable development that meets the needs of the current generation without compromising the ability of future generations to meet their needs. Renewable energy projects are a good example of sustainable development in action. Streamlining will focus public participation on strategic planning in order to provide greater certainty for applications and the community in development assessment.

# 5. ENVIRONMENTAL EFFECTS

## 5.1 Biodiversity

### 5.1.1 Assessment of impacts

A biodiversity assessment has been carried out by Red-Gum Environmental Consulting Pty Ltd to determine the potential impact on any threatened species and endangered ecological communities that are present on the development site and in the vicinity of the site. The findings of the assessment are summarized below. Reference should be made to the *Biodiversity Inspection Report* that is submitted with the development application for further information or clarification of any matter concerning the assessment and recommendations.

Methodology for the biodiversity assessment involved desktop research and a site inspection. The assessment covered details of recorded sightings of threatened species including koalas and identification of vegetation communities in the vicinity of the development site. The *Biodiversity Inspection Report* provides a test of significance in accordance with requirements of the *Biodiversity Conservation Act 2016,* a voluntary assessment of potential koala habitat, and also satisfies requirements of the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*.

### 5.1.2 Findings

Red-Gum contends that the project requires no loss of native grass and zero remnant native trees if the vegetation on the roadside along the northern boundary is avoided. Therefore, the proposed activities are unlikely to have an adverse effect on the foraging ability or the life cycle of threatened species that may be opportunistically using the site or surrounding areas.

Given the zero loss of native vegetation, the development will not endanger or have a significant effect on any existing native vegetation, habitats within the site, or fauna species that may be using the site. This project will not displace any rare or threatened species. While the proposed works are unlikely to introduce noxious weeds, vermin, feral species or genetically modified organisms into an area, the movement of vehicles, plant, equipment and people on and off the development site has the potential to introduce such impacts. Wherever possible, removal of weeds should be undertaken prior to seed developing, which for most species occurs during summer months.

The typical home ranges of Koalas are from 2 hectares of connected vegetation to hundreds of hectares. Koala feed almost exclusively on a few preferred tree species which are of primary and

secondary importance. The occurrence of both primary and secondary tree species varies widely on a regional, local and even a seasonal basis, meaning that koalas are unevenly distributed across their range. In the study area, one species was designated as a regional high use species, river red gum (*E. camaldulensis*) and seven other species (six eucalypts from the red gum and box sections and white cypress-pine (Callitris glaucophylla)) were designated high use species.

A few existing scattered trees are due to remain on site, therefore not designated for removal/loss and there are connected vegetation zones surrounding the site which represent areas of viable Koala habitat – particularly to the west along Yiddah creek and north along Duffs Road. The site is highly unlikely to be traversed or used by the species who are much more likely to stay within the connected canopy of the riparian vegetation corridor along Yiddah creek to the west of the site, or the surrounding roadside vegetation corridors.

The report concludes that the activities as proposed will not have a significant effect on any threatened species and ecological communities and/or their conservation.

#### 5.1.3 Mitigation measures

By way of a clearing process that minimizes the risk to threatened species that may be opportunistically using the site, it is recommended that:

I. Construction limits and exclusion zones clearly identified prior to work, especially along the northern boundary,
II. A visual inspection is conducted by environmental staff before construction commences to identify any areas of the site that might be supporting native fauna,
III. Vehicle movements around the site will be restricted to the construction footprint and away from any existing planted trees and flagging exclusion fencing to be installed,
IV. Soil disturbance by vehicle and pedestrian access is to be kept to a minimum outside the construction footprint, and
V. Any weeds removed (particularly those bearing seeds) are to be disposed of appropriately at the nearest waste management facility.

### 5.2 Natural hazards

#### 5.2.1 Flooding

There is no Flood Planning Map in *Bland LEP 2011*. Lyall & Associates is currently preparing the Wyalong and West Wyalond Flood Study on behalf of Bland Shire Council. The development site is not within the area under consideration for that study. An analysis of flood potential is

summarised and mitigation measures are provided in section *5.3 Water resources* of this Statement.

### 5.2.2 Bushfire

The site is not mapped as being affected by bushfire hazard on the bushfire prone land map. Infrastructure comprising electricity generating works is not a habitable building and is not listed as a *special fire protection purpose* under section 100B of the *Rural Fires Act 1997*.

However, defendable space is available within the 10 metre setback between the array and the security fence. It is also proposed that a fire emergency management plan be prepared through liaison with Council, Essential Energy and the Rural Fire Service. That plan would establish procedures to respond to a fire event and other measures such as maintenance of ground fuels, access arrangements, on site fire-fighting equipment and isolation of electrical infrastructure.

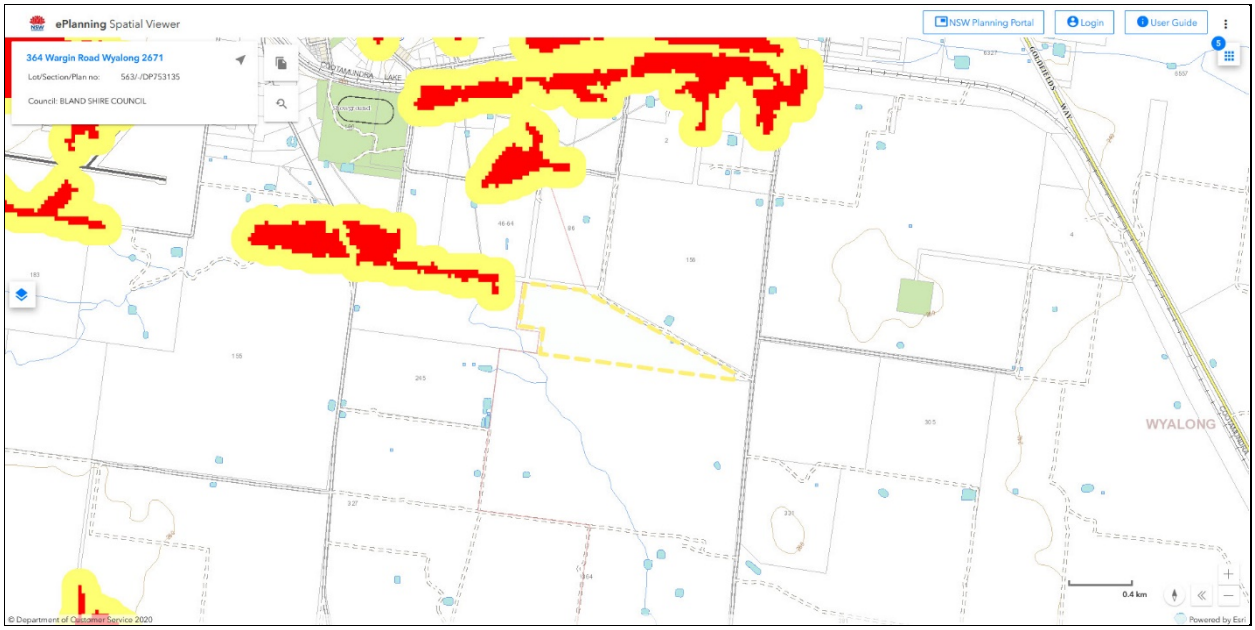



**Figure 6: Bushfire prone land map. Source: NSW Planning Portal**

### 5.2.3 Land contamination

The development site is not identified as contaminated land and is not listed on a register of contaminated land or noted as such on a Council file. The property has been cleared and farmed for crops for many years. There has been no known historical usage that would cause the land to be contaminated. It is considered that a preliminary investigation is not required for the development of a solar farm.

### 5.2.4 Mitigation measures

See section *5.3 Water resources* for recommended mitigation measures to address flooding, surface water and groundwater issues.

Prepare a fire emergency management plan and include that plan in the environmental management plan.

There are no mitigation measures recommended in relation to land contamination.

## 5.3 Water resources

### 5.3.1 Assessment of impacts

A *Water Assessment* of potential impacts on groundwater and surface water flows and flooding has been carried out by Golder Associates Pty Ltd. The findings of the assessment are summarized below. Reference should be made to the *Water Assessment* that is submitted with the development application for further information or clarification of any matter concerning the assessment and recommendations.

### 5.3.2 Findings

There are no watercourses present on the development site and the land slopes towards the nearest watercourse, Yiddah Creek, at the south-western corner of the property. However, based on elevation data and land use mapping it is the considered that the site is at low risk from flooding. Heavy rainfall during storm events or flash flooding may disrupt construction activities or material deliveries. Lyall & Associates is currently preparing the Wyalong and West Wyalong Flood Study on behalf of Bland Shire Council, however, the development site is not within the area under consideration for that study.

Potential adverse surface water-related impacts to the site relate to site accessibility and managing downstream sedimentation. There will be no extraction of groundwater or interference with the groundwater table and the works are not expected to contribute to any regional groundwater issues.

The development has the potential to alter existing water quality conditions within the site. The impervious area of solar facilities is typically only marginally increased owing to associated hardstand and building areas. However, the panels may impact the nature of vegetation/grass coverage on the site, which has the potential to increase surface runoff and peak discharge.

Increased flow concentration off the panels also has the potential to erode soil at the base of solar panels.

As the site has been historically used for cropping there is very little natural ground cover vegetation. Soils are characterized as grey sodosols which as texture-contrast soils with impermeable subsoils due to the concentration of sodium. Generally sodosols have a low nutrient status and are very vulnerable to erosion and dryland salinity when vegetation is removed. There is the potential that site runoff will contain sediments and increased turbidity downstream.

The top of the bank of Yiddah Creek is located approximately 47 metres from the nearest point of the security fence. A controlled activity approval is therefore not required to be obtained under the *Water Management Act 2000*.

### 5.3.3 Mitigation measures

After completion of the Wyalong and West Wyalong Flood Study by Lyall & Associates it is recommended that the findings of that study be reviewed to confirm that the flood risk to the development site is low.

The potential for site accessibility and the potential for inundation issues during flood events should be reviewed and procedures developed to halt construction during heavy rainfall to reduce potential impacts to the development and to increases in downstream sedimentation.

Impacts associated with erosion and sedimentation resulting from construction activities can be minimised by undertaking works in accordance with *Managing Urban Stormwater: Soils and Construction* (DECC, 2008). The following mitigation measures given in Table 7 are recommended to manage downstream sedimentation.

**Table 7: Proposed mitigation measures to manage downstream sedimentation**

| Stage | Measure | Activities/approach |
|---|---|---|
| Design | Site drainage and water quality controls | Design Basis<br>• Undertake hydrological assessment of the site's catchment in accordance with relevant methods outlined in Australian Rainfall and Runoff<br>• Determine sediment management targets and drainage control standards in accordance with Managing Urban Stormwater: Soils and Construction Vol 1 (Blue Book) (DECC, 2008).<br>• Develop a site erosion and sediment control plan in accordance with the Blue Book.<br>• Develop site drainage design incorporating detention basins and sedimentation management structures where relevant. |

| Stage | Measure | Activities/approach |
|---|---|---|
| | | • Permanent site drainage should coincide with temporary arrangements where possible |
| Construction and/or demolition | Site drainage and water quality controls | General site works:<br>• Catch drains to be located downslope of any proposed road works.<br>• Install location appropriate sediment fences or other applicable control measures depending on whether the feature is upstream or downstream of a disturbed part of the site or will need to be trafficable.<br>• All stormwater collection points need to have appropriate sedimentation and erosion controls.<br>• Undertake ongoing inspections of stormwater facilities and water control measures to assess their effectiveness.<br>• Vibration grids or wash bays at all construction exits.<br>• Level spreaders at locations where concentrated flow is discharged offsite to ensure sheet flow like conditions are maintained.<br>• Flat land erosion control options include erosion control blankets, gravelling, mulching, soil binder, turfing and revegetation |
| Construction and/or Demolition | Stormwater point source control | In the event of concrete works:<br>• Do not undertake works if chance of heavy rain.<br>• Store rinsate water, if applicable, separately to other water on site and dispose of offsite as appropriate.<br>• Block on site drains in the area of the works and remove any contaminated runoff.<br><br>In the event that dewatering practices are required:<br>• Elevate pump hose intakes for withdrawing water from excavations to minimise sediment pumping and direct hose to a containment area for settling prior to discharge of water.<br>• Limit direct discharge off site (consistent with the design requirements for sediment pond discharge).<br>• Stormwater collected on site should be reused where possible. Controls should be inspected and maintained on a regular basis. All water released from sediment basins should be clear or disposed of off site by vehicle.<br>• Material and waste storage areas should be designed and operated to minimise interaction with surface waters.<br>• Vehicle washdown areas should be located away from water courses |

## 5.4 Air quality

### 5.4.1 Assessment of impacts

The Department of Planning, Industry and Environment maintain air quality monitoring stations across rural NSW. The instruments used at most rural network sites are low cost indicative particulate monitors that respond to all aerosols including smoke and fog.

Total suspended particles are solid particles and liquid droplets 100 micrometres or less in diameter. They come from natural and human-made sources, such as pollen, bushfires and motor vehicle emissions. Dust emissions are also a source of air pollution and can cause poor air quality. The pollutants measured by the Department are nitrogen dioxide, sulphur dioxide and ammonia.

Particles are also measured as $PM_{10}$ and $PM_{2.5}$. $PM_{10}$ are particles less than 10 micrometres in diameter. Sources include crushing or grinding operations and dust stirred up by vehicles on roads. $PM_{2.5}$ are fine particles less than 2.5 micrometres in diameter. Sources include all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes.

Table 8 gives average hourly readings of $PM_{10}$ particles and $PM_{2.5}$ particles and the DPIE rating for the nearest monitoring station to the development site.

**Table 8: Average hourly air quality readings**

| **Monitoring station** | **Wagga Wagga North** | |
|---|---|---|
| Period | 23 August 2021, 9.00am-10.00am | |
| Particles | Reading | Rating |
| $PM_{10}$ | 23.2 | Good |
| $PM_{2.5}$ | 3.2 | Good |

Activities that disturb the earth's surface and that are carried out with the use of machinery have the potential to generate dust emissions. This may be exacerbated by wind exposure to an exposed ground surface. The previous use of the land for farming may have involved regular tilling, sowing and harvesting that may create dust and impact on air quality. Similarly, grazing would generate dust as animals trample the ground surface. The land has been modified for agriculture with the consequent loss of most native vegetation leading to exposed soil surfaces.

The construction of the solar farm will not involve extensive earthworks. Pile driving for footings for the array framework and excavation for roads and ancillary structures will be carried out. Along with the delivery of materials using heavy vehicles, these construction works may generate dust, however, once operational the change of use of the land from agricultural to solar photovoltaic electricity generation is expected to reduce particulate emissions and lead to an improvement in local air quality. Vehicle movements would be restricted to internal access roads and the majority of the site would be revegetated with native or pasture grasses.

### 5.4.2 Mitigation measures

To minimize dust generation during the construction the following mitigation measures are proposed:

- Limit vehicle movements to areas necessary to deliver panels, ancillary structures and equipment,
- Suppress dust emissions using watering and cease works during dry and windy condition,
- Ensure ground disturbance is limited to areas necessary to place footings or to be used for access,
- Ensure minimal handling of excavated materials, and
- Ensure stockpiles of excavated material is bunded and protected from wind and vehicle movements.

To minimize dust generation during the operational phases the following mitigation measures are proposed:

- Grade and add road base to internal accessways,
- Revegetate the site with suitable groundcover immediately construction works are completed, and
- Ensure all plant and equipment operates in accordance with specifications.

## 5.5 Noise

### 5.5.1 Assessment of impacts

A *Noise Assessment* of the impacts of noise emissions has been carried out by Muller Acoustic Consulting. The findings of the assessment are summarized below. Reference should be made to the *Noise Assessment* that is submitted with the development application for further information or clarification of any matter concerning the assessment and recommendations.

The purpose of the *Noise Assessment* is to quantify potential environmental noise emissions associated with the construction and operation of the project. Where impacts are identified, recommendations are made to mitigate and manage noise. The location of noise sensitive receptors are shown in Figure 6.

### 5.5.2 Findings

The results of the Noise Assessment demonstrate that noise levels are expected to exceed Noise Management Levels at three receivers by up to 5dB when works are at their closest proximity

during standard construction hours. These receivers are located at 46-64 and 86 Lone Pine Road to the north-west of the development site. Exceedances are expected from all construction activities (piling, trenching and assembly), however, would be of a temporary nature and short duration.

Operational noise management levels are satisfied at all identified receiver locations. Sleep disturbance is not anticipated, as there are no operational noise sources that generate significant maximum noise events and noise emissions from the project are predicted to satisfy the EPA maximum noise level criteria.

Road noise emissions associated with the project are anticipated to satisfy the relevant Road Noise Policy criteria at any receiver along the proposed transportation route and not increase noise levels by more than 2dB.

A qualitative assessment of potential vibration impacts has been completed. Due to the nature of the works proposed and distances to potential vibration sensitive receivers, vibration impacts from the project would be negligible. Based on the Noise Assessment results, there are no noise related issues which would prevent approval of the proposed project.

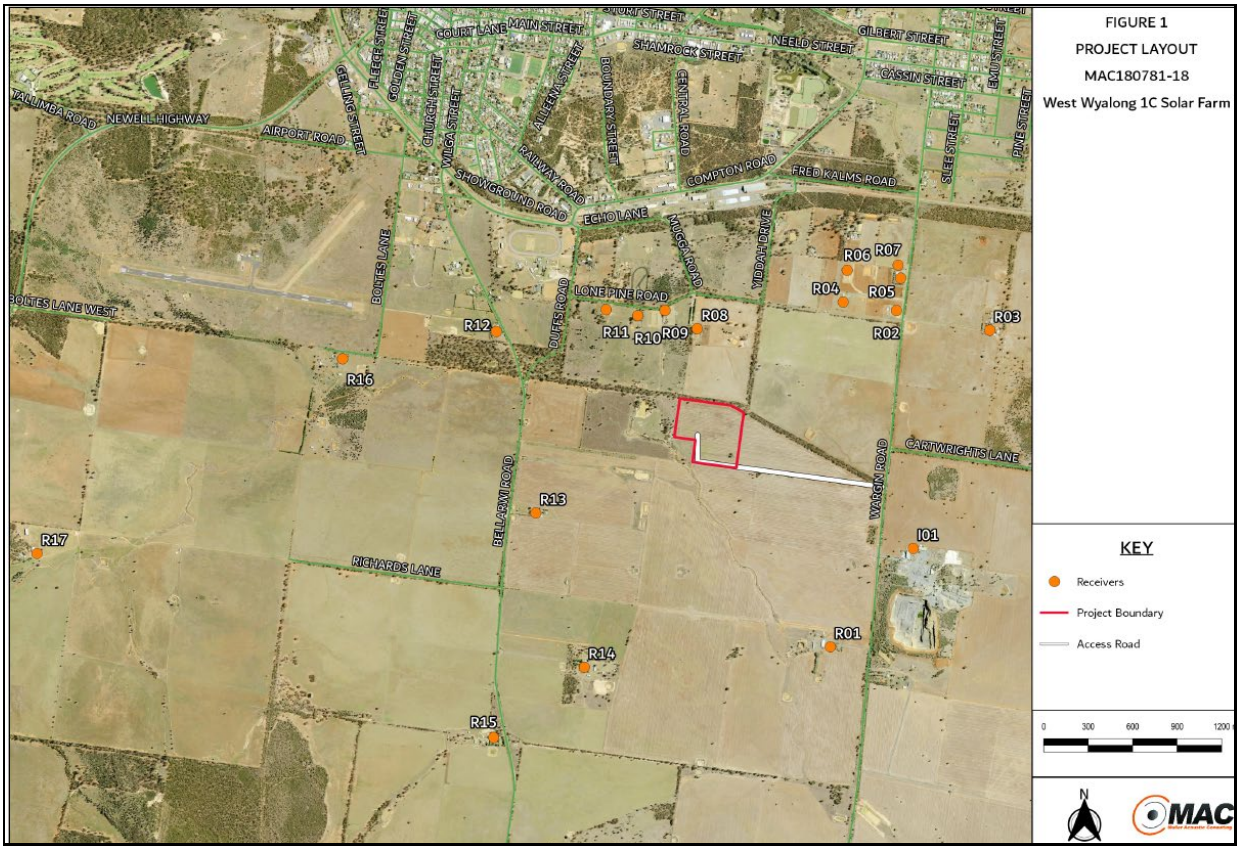



**Figure 7: Location of noise sensitive receivers. Source: Muller Acoustic Consulting**

### 5.5.3 Mitigation measures

The following mitigation measures are recommended to address noise emissions during the construction phase:

- a construction noise management protocol to minimise noise emissions, manage out of hours (minor) works to be inaudible, and to respond to potential concerns from the community,
- where possible use localised mobile screens or construction hoarding around piling rig/plant to act as barriers between construction works and receivers, particularly where equipment is near the site boundary and/or a residential receiver including areas in constant or regular use (e.g. unloading and laydown areas),
- operating plant in a conservative manner (no over-revving), shutdown when not in use, and be parked/started at farthest point from relevant assessment locations,
- selection of the quietest suitable machinery available for each activity,
- minimise noise plant/machinery working simultaneously where practicable,
- minimise impact noise wherever possible,
- utilise a broadband reverse alarm in lieu of the traditional high frequency type reverse alarm,
- provide toolbox meetings, training and education to drivers and contractors visiting the site during construction so they are aware of the location of noise sensitive receivers and to be cognisant of any noise generating activities,
- signage is to be placed at the front entrance advising truck drivers of their requirement to minimise noise both on and off-site, and
- utilise project related community consultation forums to notify residences within proximity of the site with project progress, proposed/upcoming potentially noise generating works, its duration and nature and complaint procedure.

It is recommended that noise emissions from the solar farm be minimised when operational. To assist in noise management, it is recommended that a one-off noise validation monitoring assessment be completed to quantify emissions from the site and to confirm that relevant criteria are satisfied.

## 5.6 Traffic and access

### 5.6.1 Assessment of impacts

A *Traffic Assessment Report* of the impacts on traffic and the adequacy of access arrangements has been prepared by Triaxial Consulting Ltd. The findings of the assessment are summarized below. Reference should be made to the *Traffic Assessment Report* that is submitted with the

development application for further information or clarification of any matter concerning the assessment and recommendations.

The traffic assessment includes a description of the existing road network and considers expected traffic generation during site construction and operation. Site access arrangements and intersection capacity are also considered.

### 5.6.2 Findings

The proposed access to the solar farm will be via a newly constructed access road within the existing Wargin Road reserve. The proposed site entry located along Wargin Road has in excess of 300 metres of sight distance in either direction in accordance with the requirements of Austroads Guide to Road Design.

A traffic count on 3rd August 2021 recorded three vehicles that travelled along Wargin Road for a 30-minute period between 2.00pm – 2:30pm. All of the vehicles observed were heavy vehicles that were accessing the quarry site further to the south. The peak vehicle trips will have only a very minor impact on the surrounding road network and only for a very limited construction phase. It is not expected that the additional peak hour vehicles will affect the existing level of service along Wargin Road.

As the site is located at the end of a new internal access road, construction worker access to the site via light vehicles should be with appropriate safe construction site management principles.

Depending on the accommodation arrangements made by the successful building contractor in the construction phase of the project, care should be taken to avoid any impacts on the town centre. Possible impacts may be mitigated by sourcing accommodation away from the town centre, or the provision of a bus service to convey workers to site.

In summary, the proposed construction of the solar farm will cause no long-term effect to the surrounding road network due to the unmanned operation of the site requiring only minimal regular maintenance by a small number of staff.

Construction traffic appropriately managed with out of peak hour deliveries and construction of the new access road to the site from an existing approved B-Double route will ensure traffic impacts are minimised during the short construction phase of the project.

There are no works proposed on a classified road therefore an approval under section 138 of the *Roads Act 1993* is not required.

### 5.6.3 Mitigation measures

It is recommended that the entry to the solar farm be constructed with a sealed access point as shown on Triaxial plan TX15839.00-C10.0 which also shows the turning path of a B-Double truck, the largest design vehicle to be accessing the site. The sealed entrance should extend a minimum of 26 metres into the site to minimise disruption to Wargin Road and ensure that a B-Double is able to queue off Wargin Road if required when accessing the site.

## 5.7 The community and economy

### 5.7.1 Population and accommodation

Wyalong is located at the intersection of the Newell Highway and the Mid-Western Highway in the Central West of NSW. The neighbouring township of West Wyalong, the centre of which is 4.6 kilometres to the west, effectively forms a single township with Wyalong. Demographic data for both of these centres is given in this section.

The population of Waylong state suburb in 2016, as defined by the Australian Bureau of Statistics and which includes the development site, the town of Wyalong and rural land surrounding the settlement, was 654 persons. The population of West Wyalong state suburb was 3,141 persons and the total population of Bland local government area in 2016 was 5,955 persons. The median age of people in Wyalong state suburb and Bland LGA in 2016 was 43 years, and 42 in West Wyalong.

Unemployment at the time of the 2016 Census of Population and Housing was 3.7% of the labour force comprising persons aged 15 years and over in Wyalong state suburb and 3.4% if West Wyalong which compared favourably to 3.6% for Bland LGA and 6.3% for NSW. The labour force participation rate in 2016 in Wyalong was 49.7% and 43.6% in West Wyalong compared to 44.3% for the LGA and 48.2% for the state of NSW.

The top three occupations in Wyalong were technicians and trades workers, machinery operators and drivers, and labourers. The top three industries of employment were gold ore mining, local government administration and poultry farming (eggs).

The top three occupations in West Wyalong were technicians and trades workers, managers, and professionals. The top three industries of employment were gold ore mining, local government administration and supermarket and grocery stores.

Occupied private dwellings accounted for 88.5% of dwellings in Wyalong state suburb and 11.5% or 33 dwellings were unoccupied. All dwellings were separate houses. Occupied private dwellings accounted for 86.0% of dwellings in West Wyalong state suburb and 14.0% or 189 dwellings were unoccupied. 91.8% of dwellings in West Wyalong were separate houses, the remainder being medium density dwellings.

**Table 9: Key demographic statistics. Source: ABS Census of Population and Housing 2016**

| Sector | Characteristic | Wyalong (state suburb) | West Wyalong (state suburb) | Bland LGA | NSW |
|---|---|---|---|---|---|
| Population | Total persons | 654 | 3,141 | 5,955 | 7,480,228 |
| | Median age | 43 | 42 | 43 | 38 |
| Employment | Labour force participation rate | 49.7% | 43.6% | 44.3% | 48.2% |
| | Unemployment rate | 3.7% | 3.4% | 3.6% | 6.3% |
| Housing | Occupied private dwellings | 88.5% | 86.0% | 82.8% | 90.1% |
| | Unoccupied private dwellings | 11.5% | 14.0% | 17.2% | 9.9% |
| | Total private dwellings | 286 | 1,352 | 2,633 | 2,889,061 |
| | Average occupancy rate | 2.4 | 2.3 | 2.4 | 2.6 |
| | Median monthly mortgate repayment | $1,083 | $1,082 | $1,000 | $1,986 |
| | Median weekly rent | $190 | $170 | $150 | $380 |
| | Proportion separate houses | 100.0% | 91.8% | 94.8% | 66.4% |

There are no establishments offering accommodation for visitors to Wyalong listed on the NSW Government's VisitNSW website, however, there are 8 places to stay in nearby West Wyalong. These include motels, caravan parks, bed and breakfasts and farm stays. The centre of West Wyalong is 7 minutes drive from Wyalong. In addition to these establishments there are 33 unoccupied private dwellings in the state suburb of Wyalong and a further 189 in West Wyalong some of which may be available as short term rentals, and unregulated accommodation places such as AirBnB and Stayz.

### 5.7.2 Agriculture and land capability

Wyalong is located in the Central West region of NSW for the purposes of the Australian Government Department of Agriculture, Water and Environment. The gross value of agricultural production in the region in 2018-2019 was $1.4 billion, which was 12 per cent of the total gross value of agricultural production in New South Wales of $11.7 billion. Agricultural land in the region occupies 57,300 square kilometres, or 81 per cent of the region. The most common land use by area is grazing modified pastures, which occupies 9,700 square kilometres or 14 per cent of the Central West region (https://www.agriculture.gov.au/abares/research-topics/aboutmyregion/nsw-central#regional-overview).

The region has a diverse agricultural sector. The most important commodities in the region based on the gross value of agricultural production were cattle and calves ($314 million), followed by wool ($238 million) and sheep and lambs ($212 million). These commodities together contributed

55 per cent of the total value of agricultural production in the region. ABS data indicates that in 2018–2019 there were 3,654 farms in the Central West region with an estimated value of operations of $40,000 or more. The region contains 15 percent of all farm businesses in NSW (https://www.agriculture.gov.au/abares/research-topics/aboutmyregion/nsw-central#agricultural-sector).

DPI Agriculture uses the land and soil capability mapping scheme as the preferred methodology for the classification of agricultural land. Eight classes of rural land are mapped plus flood irrigation, and mining and quarrying land. Figure 8 below shows land capability mapping for the development site and surrounding land.

The development site has a land capability of class 4 at the very eastern end of the property. Class 4 is moderate capability land: Land that has moderate to high limitations for high-impact land uses, which restricts land management options for regular high-impact land uses such as cropping, high intensity grazing and horticulture. These limitations can only be managed by specialised management practices with a high level of knowledge, expertise, inputs, investment and technology. The majority of the property is Class 3 which indicates that the land has moderate limitations and is capable of sustaining high-impact land uses, however, careful management is required for cropping and intensive grazing to avoid land and environmental degradation (*The land and soil capability assessment scheme – A general rural land evaluation scheme for NSW, 2nd Approximation*, OEH). The development footprint is located on land that is Class 3.

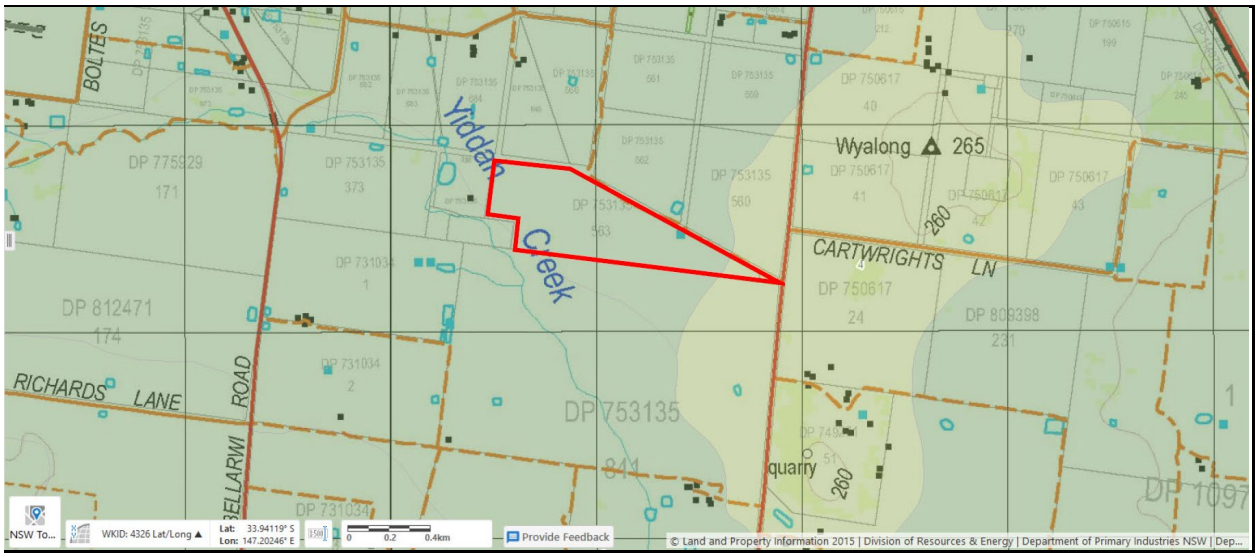



**Figure 8: Land capability mapping. Source: OEH 2021**

### 5.7.3 Potential socio-economic impacts

The benefit to the community of the solar farm will be through an increased understanding of sustainable development and by gaining a commitment to greater reliance on renewable energy. Similarly, the clustering of solar power generation would bring regional economic development benefits to the region as the area gains a reputation as a suitable location for renewable energy and linked industries, implementing the *Riverina Murray Regional Plan 2036*.

It is anticipated that there will be 50 personnel directly involved in construction on site which is expected to take approximately three months. Varying levels of expertise will be required ranging from labourers to qualified electricians and project managers. In addition, personnel would be involved in transport and delivery of materials to the site. Some of this employment may be able to be sourced locally. Once operational the site will be unmanned, however, two to three personnel will be necessary to carry out maintenance every quarter or as required. The skills required to be involved in the construction and ongoing maintenance of the solar farm may require some personnel to undergo further training and education, leading to an upskilling of the local workforce and enhanced employment opportunities generally.

Employment and education will bring direct economic benefits to the local economy through wages and salaries and indirect benefits through the need for accommodation and sustenance in the area for non-local employees. Restaurants, cafes, bakeries, supermarkets, pubs and newsagents would all benefit from the additional custom this will bring.

During the initial planning phase ITP (Development) Pty Ltd commissioned local professionals to carry out the land survey of the development site. This initial expenditure generates flow on effects throughout the local economy through income and employment. If necessary, sites officers employed by the Local Aboriginal Land Council will be engaged to carry out a cultural survey prior to commencement of works to identify any Indigenous items or places present on the development site.

It is considered that there is adequate accommodation available to cater to the 50 construction workers given the number of visitor accommodation establishments in the area plus short term rentals and unregulated accommodation providers. It is important therefore to ensure that the timing of construction of the solar farm does not coincide with the period of construction of other infrastructure to avoid additional pressure on visitor accommodation.

There is likely to be negligible effects on the availability of affordable rental over the short construction period as it is not expected that landlords would evict long-term tenants in preference of short-term workers for a period of only three months. Workers coming to the area

would be likely to take up tourist accommodation similar to mine workers across country NSW, however, construction may be limited to the off-peak tourist season if necessary.

The loss of agricultural land due to the development of the solar farm would be minimal. If necessary and practical in terms of security, the land surrounding panel arrays can continue to be used for farming purposes such as the cultivation of vegetables or flowers, or potentially livestock grazing during the operation of the solar farm.

The landowner may also choose to continue to graze livestock within and around the array, activities that do not require consent, and the additional lease income may be put to improvements elsewhere on the property. The arrays of panels can be removed once the facility is decommissioned and the land can be returned to agricultural use.

It is considered that the impact in terms of loss of productive agricultural land should be seen in the context of the impacts on farmland of other forms of power generation, for example, fracking for coal seam gas, and mining for coal and uranium as well as the infrastructure to support the processing of coal and gas. The loss of agricultural land would be offset by the contribution that the solar farm will make to the local economy through direct and indirect employment and expenditure over the short term and through the benefits that renewable energy power supply will bring to the region.

In summary:

- The solar farm will generate community economic benefits through local employment opportunities during the planning and construction phases as well as limited maintenance and inspection jobs once operational. The development of a solar farm will create a new market for local contractors and expand diversity of income for the land holder

- The loss of productive agricultural land is minimal and temporary. The array of panels can be removed once the facility is decommissioned and the land can be fully returned to agricultural use

- If necessary and practical in terms of security, the land can continue to be used for farming purposes such as the cultivation of vegetables or flowers, or the grazing of sheep during the operation of the solar farm

**Plate 7: Sheep grazing amongst a PV array. Source: Sydney Morning Herald 17 February 2021**

### 5.7.6 Mitigation measures

It is recommended that labour to construct the solar farm and for ongoing maintenance be sourced from within Bland LGA wherever possible. Where labour needs to be brought into the area, it is considered that there would be sufficient accommodation options for employees in the LGA for the estimated 50 workers engaged during the three month construction phase.

However, it is necessary to ensure that the timing of construction of the solar farm does not coincide with high activity levels at Kowal gold mine to avoid a shortage of visitor accommodation.

It is recommended that advertising be placed in local media and to approach local businesses to determine whether there is the capacity and expertise available in Wyalong, West Wyalong and surrounding districts to participate in the construction and ongoing maintenance activities.

## 5.8 Heritage

### 5.8.1 Indigenous heritage

The generic due diligence process outlined in the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* was implemented to ensure that an adequate due diligence process that addresses Aboriginal cultural heritage issues has been carried out. This process follows the following five steps:

*1. Will the activity disturb the ground surface?*

Earthworks will involve trenching which is required for cabling of each PV array/module to inverters and a substation. Other earthworks would be pile-driving to support module frames, and to enable the placement of concrete slabs and gravel accessways. Most of the infrastructure would be pre-fabricated off-site, delivered and assembled on-site.

*2a. Search the AHIMS database*

In accordance with the code, an on-line search was carried out of the *Aboriginal Heritage Information Management Service (AHIMS)* that is maintained by Heritage NSW. The search is part of the due diligence process and remains valid for 12 months.

A search of Lot 563 DP 753135 with a buffer of 50 metres was performed on 23 August 2021. The search results are:

- There are no Aboriginal sites recorded in or near the selected location, and
- There are no Aboriginal places that have been declared in or near the selected location.

It is noted that surveys for Aboriginal objects have not been carried out in all parts of NSW and Aboriginal objects may exist on a parcel of land even though they have not been recorded in *AHIMS*. Further, not all known Aboriginal sites are registered on the *AHIMS* database and not all sites consist of physical evidence or remains, e.g. dreaming and ceremonial sites.

*2b. Activities in areas where landscape features indicate the presence of Aboriginal objects*

The development area does not possess landscape features that indicate the presence of Aboriginal objects. The vast majority of the site has been cleared and sown with crops.

*3. Can you avoid harm to the object or disturbance of the landscape features*

Not applicable as the development area has been disturbed and farmed, does not possess significant landscape features and no known Aboriginal objects are listed in *AHIMS*.

*4. Desktop assessment and visual inspection*

The desktop assessment found that no known Aboriginal objects are listed in *AHIMS*. A site inspection was made in November 2020 by Zenith Town Planning Pty Ltd and there was no obvious evidence of any artefacts or items of cultural significance on the surface of the land.

*5. Further investigations and impact assessment*

An extensive search of *AHIMS* records is not necessary given that there are no Aboriginal sites or places that have been recorded on the development site.

The property lies within the area managed by West Wyalong Local Aboriginal Lands Council. As not all culturally significant items or places are made public and listed on AHIMS, West Wyalong LALC will be advised of the development after consent is issued and, if necessary, engaged to carry out a site survey prior to commencement of works. It is acknowledged that a condition of consent may be imposed to this effect. Council may also recommend a condition of consent to comply with provisions of the *National Parks and Wildlife Act 1974* should any evidence of Aboriginal occupation be found during site works. An *Aboriginal Heritage Impact Permit* may be required to be obtained if indigenous heritage objects are found during ground disturbance.

### 5.8.2 Non-indigenous heritage

The nearest heritage place listed in *Schedule 5 Environmental heritage* of *Bland LEP 2011 is Item I14 West Wyalong Showground pavilions comprising Fine Arts Pavilion, Sheep Pavilion, Cattle Pavilion and Poultry Pavilion*. This item is listed to be of local heritage significance.

The item is located approximately 1 kilometre north-west of the development site at the nearest point. This is not considered to be in the vicinity of the development site and a heritage management document is not required.


**Plate 8: The grandstand at West Wyalong Showground**

**Plate 9: A pavilion at West Wyalong Showground**

**Plate 10: Stalls at West Wyalong Showground**

### 5.8.3 Mitigation measures

Council may recommend that a condition of consent be imposed to require a site survey be carried out by an LALC sites officer either before any work commences or prior to the issue of a construction certificate. Council may also recommend a condition of consent to comply with provisions of the *National Parks and Wildlife Act 1974* should any evidence of Aboriginal occupation be found during site works. An *Aboriginal Heritage Impact Permit* may be required to be obtained if indigenous heritage objects are found during ground disturbance.

There are no recommendations in relation to non-Indigenous heritage.

## 5.9 Glare and glint

### 5.9.1 Assessment of impacts

A *Glint and Glare Assessment* has been carried out using the Solar Glare Hazard Analysis Tool by ITP Renewables. The findings of the assessment are summarized below. Reference should be made to the *Glint and Glare Assessment* that is submitted with the development application for

further information or clarification of any matter concerning the assessment and recommendations.

The assessment is based on identifying the potential sensitive receptors in close proximity to the development site having regard to the elevation of the site relative to surrounding land and structures or vegetation that would act as visual barriers. Potential glare and glint impacts are assessed and if necessary mitigation measure are recommended to reduce potential impacts to an acceptable level.

#### 5.9.2 Findings

A total of 17 observation points and 13 road routes were identified as potential visual receptors within a 2 kilometre radius of the development site. While there was a greater number of residential/commercial properties considered, some were discounted based on vegetation and other structures acting as visual barriers.

The results of the analysis indicate that persons occupying the selected properties are unlikely to be affected as a result of the proposed solar farm. Existing roadside vegetation and structures are expected to provide a physical obstruction between the solar farm and road users, further minimising the visual impact of the project.

#### 5.9.2 Mitigation measures

No mitigation measures are required to address potential glare and glint impacts.

### 5.10 Landscape character and visual amenity

#### 5.10.1 Assessment of impacts

Impacts on landscape character and visual amenity of the proposed solar farm have been assessed by Zenith Town Planning Pty Ltd using the RMS guideline *Environmental Impact Assessment Practice Note – Guideline for Landscape Character and Visual Impact Assessment* (EIA-N04 Version 2-0 released on 14 December 2018). The findings of the assessment are summarized below. Reference should be made to the *Landscape Character and Visual Amenity Impact Assessment* that is submitted with the development application for further information or clarification of any matter concerning the assessment and recommendations.

The assessment estimates the likely impacts on landscape character and viewpoints based on the sensitivity to physical change and the magnitude, or relative size and scale, of the works and then applies an impact ranking.

The methodology included a site inspection of the location of the proposed works and the surrounding area to identify potential visual receivers and the visual catchment, land uses and characteristics of the surrounding area. The greater the distance from the development site the less clear is the view of the solar farm. The ability to distinguish the type of land use and the actual composition of materials diminishes with distance.

Planning principles established by the NSW Land and Environment Court were also considered as a check on the findings of the landscape character and visual assessment. The potential visual receivers located within the visual catchment of the site of the proposed solar farm are shown in Figure 9 below.

### 5.10.2 Findings

The character of the landscape near the site of the West Wyalong Solar Farm has been significantly modified since European settlement and used mainly for agriculture. Very little native vegetation remains other than along creek lines and boundaries. There are limited views across farmland and towards low hills in the distance from the southern side of the township on approach to the development site.

The landscape in the immediate vicinity of the development site is generally flat and cleared of vegetation although some remnant/regrowth vegetation exists along Yiddah Creek line to the west of the site. Structures within the vicinity of the site comprise rural farm buildings, large lot residential development to the north and the processing facilities associated with the quarry located to the south-east of the site.

The size and scale, or magnitude, of the project and impact on landscape character is considered to be low given the presence of the quarry and ancillary facilities, the rail line to the north and the buildings associated with agricultural industries. The solar farm will not have a major impact on the rural landscape south of Wyalong which is defined by the presence of infrastructure and rural industry. The sensitivity of private property in the vicinity of the site to landscape change is also considered low given the existing modified agricultural landscape. The sensitivity of Wargin Road and other public roads to landscape change would be low due to the flat topography, remnant vegetation and rural industrial development that exists in the vicinity of the site.

The overall impact on landscape character is assessed to be low. The facility will be effectively screened to all adjoining and adjacent properties due to proposed planting on the southern and western sides of the solar array along with the existing remnant vegetation in road reserves and along Yiddah Creek.

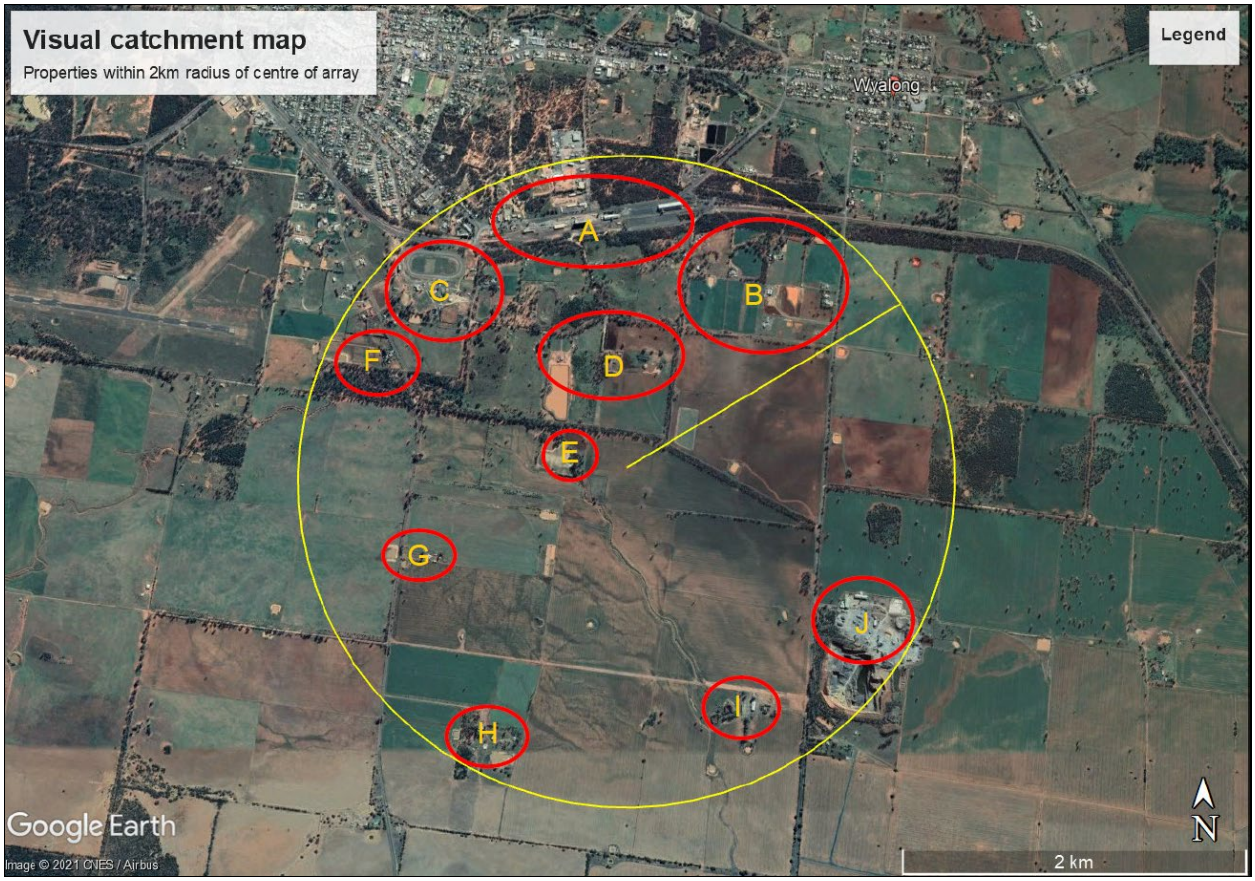



**Figure 9: The visual catchment. Source: Google Earth**

The visual impact was assessed based on the observation sectors shown in Figure 9. The impact on dwellings located in sectors B and D which is the peri-urban area south of Wyalong is assessed to be moderate. The existing remnant vegetation along the unnamed road reserve to the north and north-east of the development area will provide adequate screening of the array to properties in these sectors. The impact on sector E which is the property adjoining the development site to the west is assessed to be high. A structure on this property is approximately 100 metres form the boundary of the development site. Although trees are present within that separation it is proposed to provide landscaping for a depth of 3 metres along the western boundary of the array which to ensure that visual impacts to that property are mitigated. Similary, sector G which comprises a single farm house and outbuildings will be effectively screened by riparian vegetation along Yiddah Creek and landscaping to a depth of 3 metres along the southern edge of the array.

The visual impact on all other sectors is assessed to be negligible due to vegetation, topography and structures on intervening land that will effectively screen the solar farm.

Impacts were also assessed on the 13 public roads located within the visual catchment. Impacts on public roads are assessed to be negligible other than for Wargin Road and the unnamed road reserve that runs along the northern boundary of the development site. The solar farm may be visible from Wargin Road south of the site and the impact is assessed to be low-moderate for that road route. This is due to the existing visual impact of the quarrying operations on motorists using Wargin Road. Landscaping along the southern boundary of the array will provide additional screening once mature.

The impact is assessed to ne moderate-high for motorists using the unnamed road along the northern boundary, however, usage of that unsealed road route would be very low and remnant vegetation along each side of the track would provide substantial screening of the array.

There would be no direct line of sight to the development from other roads due to trees and structures on intervening land and topography. The development would not be visible from any other public place.

The findings of the assessment acknowledge that there will be impacts on the landscape and visual amenity as there are with any type of development. However, there is no view loss; the impact is a change to the view – a new element within the landscape. Impacts are greatest in close proximity to the solar farm as the further the distance a viewpoint is from the site the less the overall visual impact as the development occupies a lesser proportion of the total view.

As it is intended to carry out landscape planting on the southern and western sides of the array with plants that grow to a maximum height of 3 metres, the impact on the landscape will gradually soften as vegetation matures and provides an effective screen. It is recommended that Bland Shire Council be consulted to determine appropriate plant species. This landscaping will shield visibility not just to the array but will also screen ancillary items including the inverters, the BESS and the kiosk which are all beneath 3 metres in height.

On balance and having regard to other matters for consideration under section *4.15 Evaluation* of the *Environmental Planning and Assessment Act 1979*, the impacts are considered acceptable given that:

- the solar farm will contribute to renewable energy generation and provide a source of electricity for local domestic and commercial use whilst at the same time assisting to reduce greenhouse gas emissions and our reliance on fossil fuels,

- It will also generate employment opportunities during the construction phase and once operational will provide employment for maintenance crews,

- The placement of the array within the property has been chosen to maximise distance separation from dwellings and public roads,

- Existing vegetation along road reserves, creeks and property boundaries is to be maintained,

- Along with existing vegetation along roadsides and in riparian zones, the proposed landscaping will grow to a height that will effectively screen the facility from observation points including public roads.

### 5.10.3 Mitigation measures

There are mitigation measures recommended in addition to carrying out the landscape planting around the southern and western boundaries of the array as proposed. It is recommended that Bland Shire Council be consulted regarding suitable species for that landscaping.

# 6. CONCLUSION

## 6.1 Findings

*Suitability of the site*

The site is considered suitable for the proposed development of West Wyalong Solar Farm. A connection is available to the Essential Energy West Wyalong zone substation to transfer power generated by the solar panels to the township and on to the grid. The development area is relatively flat, is free of constraints and is accessible to large delivery vehicles during the construction phase and for utility vehicles for ongoing maintenance.

*Likely impacts*

The likely impacts of the development have been considered in this Statement and supporting documents. Considerations include impacts on biodiversity, natural hazards, visual and scenic amenity, glare and glint, traffic, noise, air quality, water resources, indigenous and non-indigenous heritage, the community and the local economy. Any impacts on these interests have been found to be acceptable and mitigation measures have been recommended where necessary.

According to the Australian Radiation Protection and Nuclear Safety Agency, which maintains continual oversight of emerging research into the potential health effects of the EMF exposure, there is no established evidence of health effects from exposure to electric and magnetic fields from powerlines, substations, transformers or other electrical sources, regardless of the proximity, causes any health effects. The location of the solar farm and the distance separation between nearby dwellings and the site mean that any potential impacts on health are mitigated.

*Cumulative impacts*

The cumulative impacts of the proposed development are minor. These facilities are suited to a rural location due to the need for a large land area but need to be in close proximity to a settlement to enable provision of power direct to the local community. The addition of a solar farm to the rural area, which is already characterised by a mix of rural uses including a quarry and silos, would not detract unreasonably from local amenity or the natural environment.

Two other solar farms were approved in 2019 – at Wyalong and West Wyalong. These will produce a combined 190 megawatts once built. The proposed West West Wyalong Solar Farm is a town scale facility of only 5MW and will not lead to adverse cumulative impacts having regard to these two approved facilities.

*Consistency with planning framework*

The proposed development is consistent with the strategic planning framework that applies to the local government area, the site itself and to the development of electricity generating works. The solar farm is permissible with consent under provisions of *SEPP (Infrastructure) 2007* which prevails over provisions of the local environmental plan and is satisfactory to other applicable SEPPs.

*Land use conflict*

The proposed rural location implements the planning priorities, goals and actions of the *New England North West Regional Plan 2036*, the *Bland Shire Council Local Strategic Planning Statement* and the *NSW Renewable Energy Action Plan*. These objectives seek to capitalize on solar energy resources to increase the provision of renewable energy using rural land in locations that will not cause land use conflict.

It is considered that the solar farm can co-exist with future large lot residential development north of the development site. The array is to be screened along the western boundary with 3 metre high shrubs and existing vegetation within a road reserve along the northern will ensure that visual amenity for future residences is maintained. Noise impacts once operational have been assessed to be within noise management levels and therefore are not expected to interfere with future inhabitants of the residential zone.

Development of the R5 Large Lot Residential zoned land to the south may occur over the near to medium term. However, The owners of rural land have a reasonable expectation to be able to develop permissible uses and future inhabitants of residential zones purchase and build with the knowledge that rural uses exist and will continue to be developed on nearby rural land. The development of the solar farm would not impede the outward spread of the township beyond the 35 year operational lifespan. The development site is not identified for future urban development and is zoned RU1 Primary Production.

*Government targets*

Electricity generated by the system will be directed to the settlement of Wyalong via existing electrical infrastructure to contribute to the supply of electricity for use by households and businesses. Any surplus electricity will be sent to the grid and any deficit will be drawn from the grid. As well as the potential to utilize local contractors to construct the facility, the township will benefit through the ability to use clean energy that is generated adjacent the settlement.

The development of the solar farm will assist the transition of our economy from reliance on fossil fuels to renewable sources. It will assist Commonwealth and NSW Governments to achieve targets and objectives relating to emissions to address climate change.

Given the local, regional and national benefits of renewable energy generation and based on implementation of the recommended mitigation measures to avoid, minimize or mitigate impacts to the existing natural and built environment, the development is considered to be in the public interest.

### 6.2 Summary of mitigation measures

Table 10 provides a summary of mitigation measures. It is recommended that an environmental management plan be prepared to cover the construction and operational phases. Where necessary Table 10 includes a recommendation as to whether the mitigation measure should be included in the management plan. In addition to the mitigation measures detailed below, it is recommended that a waste management plan be prepared for inclusion in an environmental management plan.

**Table 10: Summary of mitigation measures**

| Consideration | Mitigation measures | Environmental Management Plan |
|---|---|---|
| Fire assessment | • Install a reliable, automated monitoring and control systems, with an alarm and shutdown response capability<br>• Take reasonable and safe measures to prevent the risks of external heat effects in the event of a bushfire<br>• Design appropriate separation and isolation between battery cubicles, and between the BESS and other infrastructure, in accordance with the manufacturers' recommendations, and including gravel set-off areas around the facility<br>• Comply with all applicable Australian codes and standards<br>• Prepare a BESS-specific fire response plan, in conjunction with the NSW Rural Fire Service<br>• Install an adequate automatic fire suppression system integrated into the detection and control system<br>• Dispose (and where possible, recycle) of any potentially hazardous material in accordance with the best international practices available at that time<br>• Fuels and pesticides/herbicides in use at the site will be stored at the laydown area in appropriately bunded areas designed in accordance with AS1940-2004<br><br>In terms of fire safety including the threat of bushfire, the report recommends that the facility with battery storage can be made safer through the integration of safety in | Yes, for operational phases |

| | | |
|---|---|---|
| | design principles from bushfire standards including APZ clearances, internal protection areas, comprehensive system fault monitoring, automated fire detection and suppression systems and safety procedures built into WHS policies and procedures to ensure these farm assets and the surrounding area are protected from the risk of fire. | |
| Biodiversity | By way of a clearing process that minimizes the risk to threatened species that may be opportunistically using the site, it is recommended that:<br><br>I. Construction limits and exclusion zones clearly identified prior to work;<br>II. A visual inspection is conducted by environmental staff before construction commences to identify any areas of site that might be supporting native fauna;<br>III. Vehicle movements around the site will be restricted to the construction footprint and away from any existing planted trees and flagging exclusion fencing to be installed.<br>IV. Soil disturbance by vehicle and pedestrian access is to be kept to a minimum outside the construction footprint.<br>V. Any weeds removed (particularly those bearing seeds) are to be disposed of appropriately at the nearest waste management facility. | Yes, with reference to ongoing site access during both construction and operational phases, and to the storage of materials within the site |
| Natural hazards | Prepare a fire emergency management plan and include that plan in the environmental management plan | Yes, for construction and operational phases |
| Water resources | After completion of the Wyalong and West Wyalong Flood Study by Lyall & Associates it is recommended that the findings of that study be reviewed to confirm that the flood risk to the development site is low.<br><br>The potential for site accessibility and the potential for inundation issues during flood events should be reviewed and procedures developed to halt construction during heavy rainfall to reduce potential impacts to the development and to increases in downstream sedimentation.<br><br>Design – site drainage and water quality controls:<br>• Undertake hydrological assessment of the sites catchment in accordance with relevant methods outlined in Australian Rainfall and Runoff.<br>• Determine sediment management targets and drainage control standards in accordance with Managing Urban Stormwater: Soils and Construction Vol 1 (Blue Book) (DECC, 2008).<br>• Develop a site erosion and sediment control plan in accordance with the Blue Book.<br>• Develop site drainage design incorporating detention basins and sedimentation management structures where relevant. | Yes, for construction and operational phases. Include an erosion & sediment control plan or soil and water management plan |

| | | |
|---|---|---|
| | • Permanent site drainage should coincide with temporary arrangements where possible | |
| | Construction and/or demolition – site drainage and water quality controls:<br>• Project construction period to occur entirely within the dry season to limit potential flooding, sedimentation and water quality impacts to waterways<br>• Catch drains to be located downslope of any proposed road works.<br>• Install location appropriate sediment fences or other applicable control measures depending on whether the feature is upstream or downstream of a disturbed part of the site or will need to be trafficable.<br>• All stormwater collection points need to have appropriate sedimentation and erosion controls.<br>• Undertake ongoing inspections of stormwater facilities and water control measures to assess their effectiveness.<br>• Vibration grids or wash bays at all construction exits.<br>• Level spreaders at locations where concentrated flow is discharged offsite to ensure sheet flow like conditions are maintained.<br>• Flat land erosion control options include erosion control blankets, gravelling, mulching, soil binder, turfing and revegetation | |
| | Construction and/or demolition – stormwater point source control:<br><br>In the event of concrete works:<br>• Do not undertake works if chance of heavy rain.<br>• Store rinsate5 water, if applicable, separately to other water on site and dispose of offsite as appropriate.<br>• Block on site drains in the area of the works and remove any contaminated runoff.<br><br>In the event that dewatering practices are required:<br>• Pump hose intakes for withdrawing water from excavations will be elevated to minimise sediment pumping and directed to a containment area for settling prior to discharge.<br>• Limit direct discharge off site (consistent with the design requirements for sediment pond discharge).<br>• Stormwater collected on site should be reused where possible. Controls should be inspected and maintained on a regular basis. All water released from sediment basins should be clear or disposed off site by vehicle.<br>• Material and waste storage areas should be designed and operated to minimise interaction with surface waters.<br>• Vehicle washdown areas should be located away from water courses | |

| | | |
|---|---|---|
| Air quality | During construction:<br>• Limit vehicle movements to areas necessary to deliver panels, ancillary structures and equipment<br>• Suppress dust emissions using watering and cease works during dry and windy conditions<br>• Ensure ground disturbance is limited to areas necessary to place footings or to be used for access<br>• Ensure minimal handling of excavated materials<br>• Ensure stockpiles of excavated material is bunded and protected from wind and vehicle movements<br><br>During operation:<br>• Grade and add road base to internal accessways<br>• Revegetate the site with suitable groundcover immediately construction works are completed<br>• Ensure all plant and equipment operates in accordance with specifications | Yes, for construction and operational phases |
| Noise | The following mitigation measures are recommended to address noise emissions during the construction phase:<br>• a construction noise management protocol to minimise noise emissions, manage out of hours (minor) works to be inaudible, and to respond to potential concerns from the community,<br>• where possible use localised mobile screens or construction hoarding around piling rig/plant to act as barriers between construction works and receivers, particularly where equipment is near the site boundary and/or a residential receiver including areas in constant or regular use (e.g. unloading and laydown areas),<br>• operating plant in a conservative manner (no over-revving), shutdown when not in use, and be parked/started at farthest point from relevant assessment locations,<br>• selection of the quietest suitable machinery available for each activity,<br>• minimise noise plant/machinery working simultaneously where practicable,<br>• minimise impact noise wherever possible,<br>• utilise a broadband reverse alarm in lieu of the traditional high frequency type reverse alarm,<br>• provide toolbox meetings, training and education to drivers and contractors visiting the site during construction so they are aware of the location of noise sensitive receivers and to be cognisant of any noise generating activities,<br>• signage is to be placed at the front entrance advising truck drivers of their requirement to minimise noise both on and off-site, and<br>• utilise project related community consultation forums to notify residences within proximity of the site with project progress, proposed/upcoming | Yes, for construction and operational phases |

| | | |
|---|---|---|
| | potentially noise generating works, its duration and nature and complaint procedure.<br><br>It is recommended that the noise emissions from the solar farm be minimised when operational. To assist in noise management, it is recommended that a one-off noise validation monitoring assessment be completed to quantify emissions from site and to confirm emissions relevant criteria are satisfied. | |
| Traffic | It is recommended that the entry to the solar farm site be constructed with a sealed access point as shown on Triaxial plan TX15839.00-C10.0 which also shows the turning path of a B-Double truck, the largest design vehicle to be accessing the site. The sealed entrance should extend a minimum of 26 metres into the site to minimise disruption to Wargin Road and ensure that a B-Double is able to queue off Wargin Road if required when accessing the site. | Yes, with reference to site access during the construction phase |
| The community & local economy | • labour to construct and maintain the solar farm be sourced from within the Bland local government area wherever possible<br>• advertising be placed in local media and local businesses contacted to determine whether there is the capacity and expertise available to participate in the construction and ongoing maintenance activities<br>• Ensure that the timing of construction of the solar farm does not coincide with the construction of major infrastructure projects to avoid a shortage of visitor accommodation | n/a |
| Heritage | Council may recommend that a condition of consent be imposed to require a site survey be carried out by an LALC sites officer either before any work commences or prior to the issue of a construction certificate.<br><br>Council may also recommend a condition of consent to comply with provisions of the *National Parks and Wildlife Act 1974* should any evidence of Aboriginal occupation be found during site works. An *Aboriginal Heritage Impact Permit* may be required to be obtained if indigenous heritage objects are found during ground disturbance.<br><br>There are no recommendations in relation to non-Indigenous heritage. | n/a |
| Landscape character & visual amenity | There are mitigation measures recommended in addition to carrying out the landscape planting around the southern and western boundaries of the array as proposed. It is recommended that Bland Shire Council be consulted regarding suitable species for that landscaping. | n/a |
| Glare and glint | No mitigation measures are required to address potential glare and glint impacts. | n/a |

Attachment A

# AHIMS Web Services (AWS)
## Search Result

Your Ref/PO Number : 2620

Client Service ID : 615794

Zenith Town Planning

Date: 23 August 2021

P O Box 591
Moruya New South Wales 2537

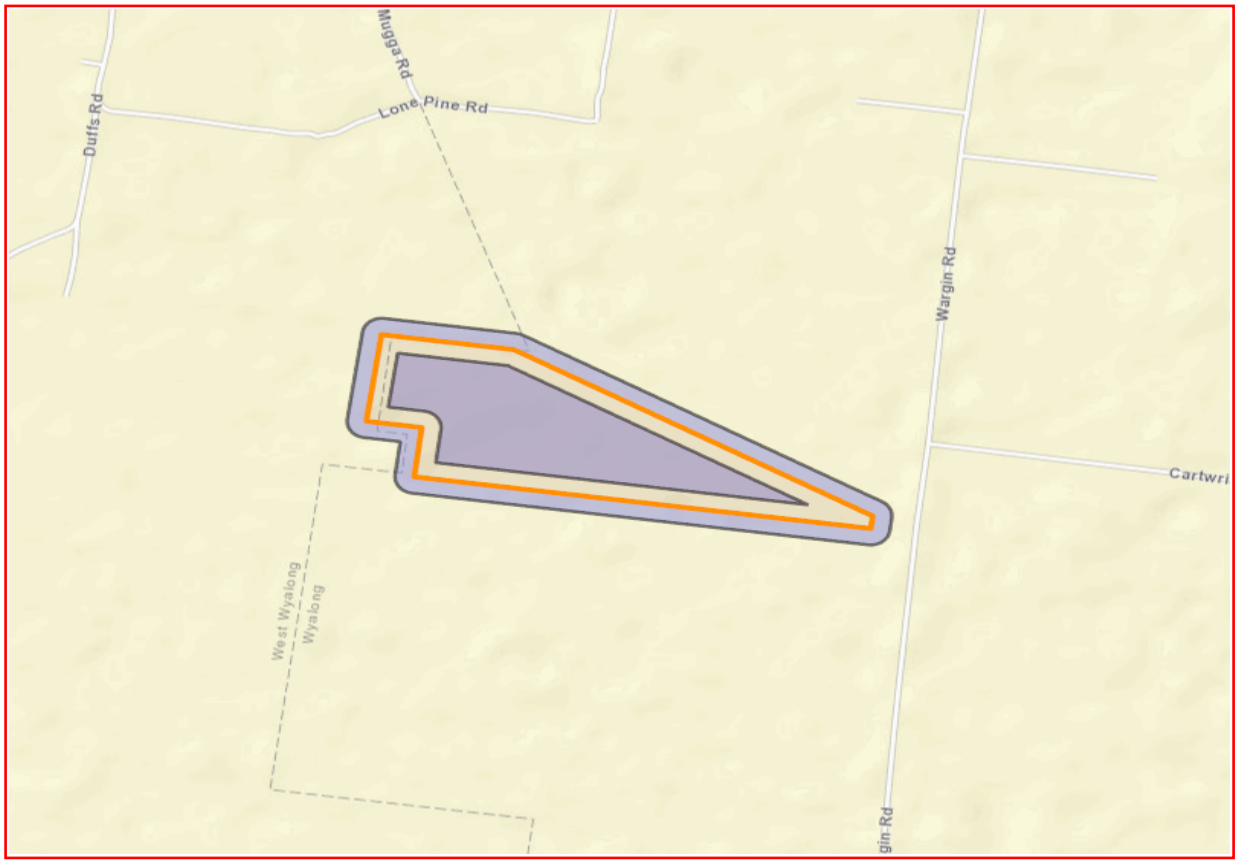
Attention: Allen Grimwood

Email: zenithplan@bigpond.com

Dear Sir or Madam:

**AHIMS Web Service search for the following area at Lot : 563, DP:DP753135, Section : - with a Buffer of 50 meters, conducted by Allen Grimwood on 23 August 2021.**

**The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.**




A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

| | |
|---|---|
| 0 | **Aboriginal sites are recorded in or near the above location.** |
| 0 | **Aboriginal places have been declared in or near the above location. *** |

**If your search shows Aboriginal sites or places what should you do?**

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

**Important information about your AHIMS search**

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

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