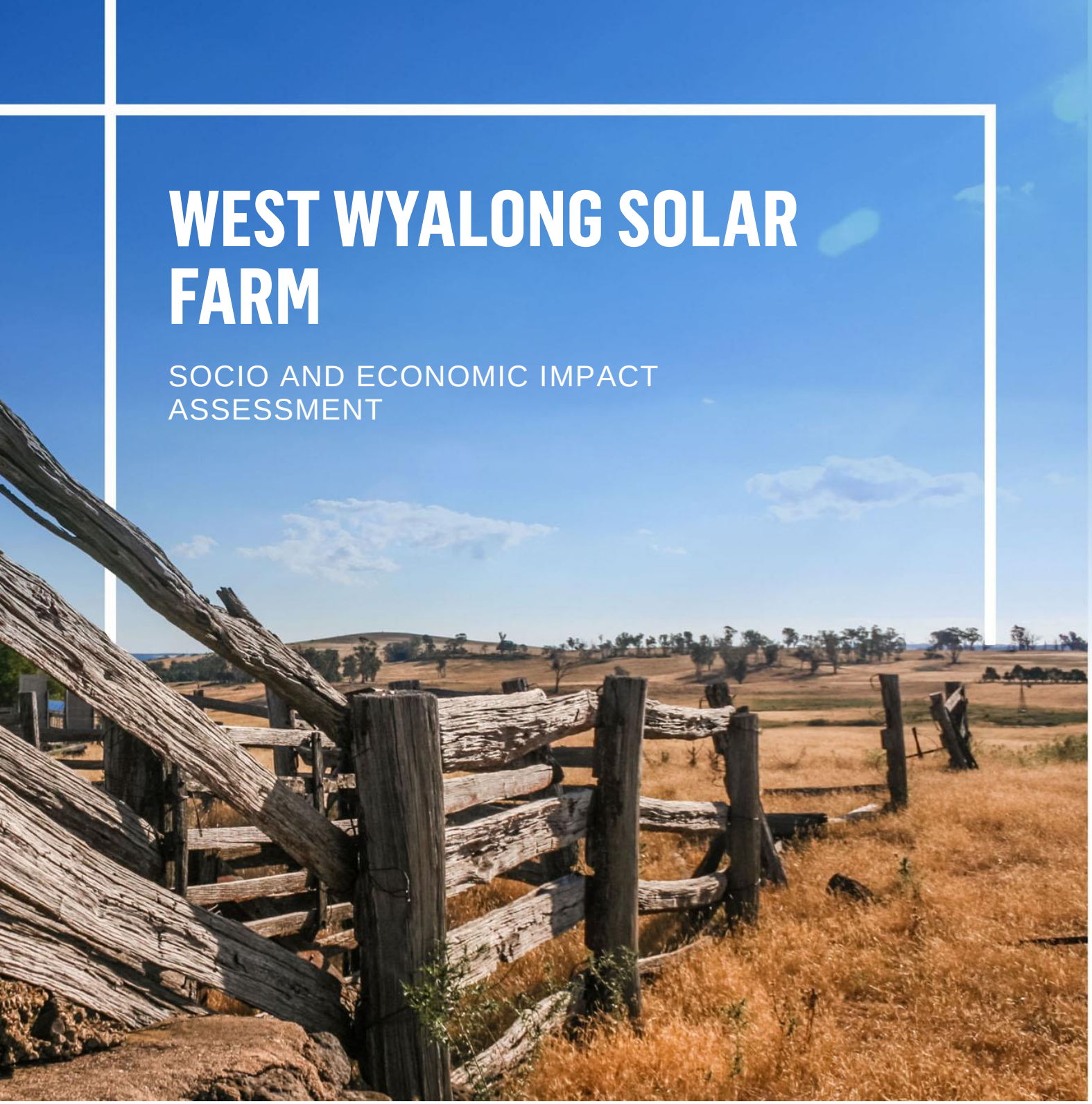
WEST WYALONG SOLAR FARM

SOCIO AND ECONOMIC IMPACT ASSESSMENT



FINAL
PREPARED FOR LIGHTSOURCE DEVELOPMENT SERVICES AUSTRALIA

URBIS

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EXECUTIVE SUMMARY

Urbis Pty Ltd. (Urbis) was engaged by Lightsource Development Services Australia to prepare a Socio-Economic Impact Assessment (SEIA) in relation to the West Wyalong Solar Installation (the proposed development), located at 228-230 Blands Lane West Wyalong, New South Wales (NSW).

The proposed development is a State Significant Development (SSD). This assessment has been undertaken to fulfil the requirements of the Secretary's Environmental Assessment Requirements (SEARs), issued on 8 November 2018. This assessment specifically addresses the need to consider:

Socio-Economic – including an assessment of the likely impacts on the local community and a consideration of the construction workforce accommodation.

ASSESSING SOCIAL AND ECONOMIC IMPACT

A SEIA is a specialist study undertaken to identify, analyse, manage and monitor the direct and indirect social and economic impacts associated with a proposed development.

Social impacts

Social impacts are consequences, both positive and negative, experienced by people due to changes associated with a proposed development. This may include changes to people's way of life, their culture, community, environment, health and wellbeing, personal and property rights, and their fears and aspirations.[1]

Identified social impacts are assessed by considering the consequence of the impact and the likelihood of the impact occurring.

Economic impacts

Economic impact of the proposal identifies and measures the direct and indirect economic activity associated with the construction and ongoing operations of a proposed project, and can be measured in terms of:

- Direct and indirect jobs associated with the construction and ongoing operation of a project.
- Direct and indirect Gross Value Added (GVA), associated with the supply chain and consumption effects of a project.

In addition to this, there are a number of other economic impacts to do with the labour force:

- Identifying the opportunity for workers within Bland LGA to be employed on a project.
- The capacity within the local housing market to accommodate temporary construction workforce.
- Retail spend of temporary construction workers.

Economic impacts are measured by employment and GVA, an economic measure of economic activity.

SUMMARY OF IMPACTS

Table 1 summarises the socio-economic impacts identified in relation to the proposed development, as well as planned management measures and additional recommendations.

Management measures are designed to reduce negative impacts and enhance positive impacts. This SEIA identifies planned management measures which have or will be undertaken as part of the proposed development.

Recommendations are additional management measures which are not included as part of the proposed development but are included for further consideration.

[1] Adapted from the International Association for Impact Assessment.

Table 1 – Summary of socio-economic impacts

Socio-Economic Impact	Description of Impact	Planned Management Measures	Recommendations
Increased supply of renewable energy and reduction in emissions.	The proposed development will deliver a long-term positive impact for NSW residents by increasing the supply of renewable energy to the energy grid and help to reduce harmful carbon emissions.	• Non-identified.	• Non-identified.
Increased employment and economic activity during the project's construction phase.	During the peak construction period there will be up to 300 employees on-site per day. Urbis have calculated the annual equivalent to 142 direct jobs (based on the project's capital expenditure) and additional 100 indirect supply-chain jobs. The project also has the potential to contribute $51 million GVA to the economy through the construction phase, and the potential to support up to $13 million in supply chain GVA across NSW.	• Non-identified.	• Non-identified.
Increased employment and economic activity during the project's operational phase.	During the operational phase there will be three direct ongoing jobs, resulting in an additional five indirect supply-chain jobs. The operational phase also has the potential to contribute direct operational GVA of up to $2.1 million, and indirect supply-chain GVA of $0.5 million per annum supporting supply businesses.	• Non-identified.	• Non-identified.
Increased job opportunities for local workers.	There will be an opportunity to employ Bland Shire LGA construction workers, who are currently leaving the LGA for work and take up the recently increased unemployed labour force, however overall the analysis in this report suggests a relatively tight labour market. Given the relatively tight labour market in Bland LGA there will be a need for a proportion of the construction	• Non-identified.	• A local employment strategy to optimise job retention within the Bland LGA. • Source remaining workers outside the LGA, where necessary.

Socio-Economic Impact	Description of Impact	Planned Management Measures	Recommendations
	workforce to be temporary workers drawn from outside the LGA. It is expected that many of the highly specialised skill-sets will be sourced outside the LGA.		
Increased retail spend, from temporary construction workers.	The per capita spend of construction workers has been estimated to be $8,546 per annum per worker ($712 per month per worker). Based on a 50-100% of the construction workforce being temporary workers, it is estimated that the workers (annualised equivalent of 142 workers) during the construction period will generate between $0.607 million and $1.214 million in retail expenditure. This increase in retail spend presents the opportunity to support local retail trade jobs which decreased by 3.4% per annum between 2011 and 2016 within the Bland LGA.	• Non-identified	• Non-identified
Increased demand on local infrastructure and services during construction.	The introduction of up to 300 workers per day during peak construction represents a 7.9% increase in the combined population of West Wyalong and Wyalong. This rapid increase is likely to place additional demand on local infrastructure and services and may impact on the amenity of existing residents through increased waiting times and reduced stock and availability of services. This impact will be limited to the period of peak construction.	• Stakeholder and community consultation has been undertaken to inform local residents and businesses of the proposed development.	• A local employment strategy to help manage the demand for accommodation and other local services from a large temporary worker population. • Undertake additional stakeholder and community consultation in West Wyalong to understand capacity of local services and infrastructure. • Consultation with additional townships that may be required to assist in housing

Socio-Economic Impact	Description of Impact	Planned Management Measures	Recommendations
			the temporary workforce accommodation.
Reduced accommodation capacity during construction.	Within an approximate 1-hour 45-minute drive time of the subject site there are approximately: • 1,293 rooms in tourist accommodation, of which 151 (12%) are located within West Wyalong. • As of October 2018, there were 335 vacant rooms advertised for rent within the private rental market. • In 2016 there were roughly 3,100 unoccupied private dwellings within surrounding regions (ABS Census 2016). During peak construction periods across the Cowal mine, the proposed Wyalong Solar Farm, and the subject site, there will be a maximum requirement of potentially 925 beds. This would represent 72% of total tourist accommodation room supply (assuming one bed per room), and 56% of tourist accommodation and private rental stock. The 3,100 unoccupied private dwellings identified are not necessarily available to rent, and would require the proponent to identify and approach landlords directly.	• Non-identified.	• A local employment strategy to reduce the requirement for additional accommodation and other local services. • Engage contractors to source short-term accommodation in available tourist and rental accommodation. • Consider available accommodation when finalising construction staging, and the ability to accommodate the construction workforce.
Cumulative impacts on infrastructure and services, from major development in Bland Shire.	Based on proposed, planned and operational major development in the Bland Shire the proposed development is likely to contribute to a cumulative change and impact in the local area. The contribution of the proposal to cumulative visual impacts or loss of agricultural land is likely to be limited. The proposed development site is not identified as	• Stakeholder and community consultation has been undertaken to inform the local community of the proposed development.	• Consideration of construction staging to minimise cumulative impacts of the construction workforce within the Bland Shire LGA. • Future regional planning should consider the

Socio-Economic Impact	Description of Impact	Planned Management Measures	Recommendations
	Biophysical Strategic Agricultural and a landscape strategy has been proposed to minimise any potential visual impacts. However, it is likely that the proposal may contribute to cumulative pressure on local infrastructure and services.	• Preparation of a landscaping strategy to help minimise any potential visual impacts. • The site selection avoids Biophysical Strategic Agricultural Land.	cumulative impacts of solar farm development.

CONCLUSION

This report addresses the SEARs requirement to assess the socio-economic impacts of the proposed development including an assessment of the likely impacts on the local community and a consideration of the construction workforce.

This assessment has found that overall the proposal is very likely to have a long term positive impact for NSW by increasing the supply of renewable energy in NSW and reducing emissions. It will also deliver local employment and economic benefits to Bland Shire LGA.

There will a period during construction of increased pressure on local services, infrastructure and housing, which will be exacerbated by the cumulative impact of other major development in the region.

1. INTRODUCTION

Urbis Pty Ltd. (Urbis) was engaged by Lightsource Development Services Australia to prepare a Socio-Economic Impact Assessment (SEIA) in relation to the West Wyalong Solar Installation (the proposed development) located at 228 – 230 Blands Lane West Wyalong NSW.

The proposed development is a State Significant Development (SSD). This assessment has been undertaken to fulfil the requirements of the Secretary's Environmental Assessment Requirements (SEARs), issued on 8 November 2018. This assessment specifically addresses the need to consider:

Socio-Economic – including an assessment of the likely impacts on the local community and a consideration of the construction workforce.

1.1. ASSESSING SOCIO-ECONOMIC IMPACTS

A SEIA is a specialist study undertaken to identify, analyse, manage and monitor the direct and indirect social and economic impacts associated with a proposed development.

1.1.1. Social impacts

Social impacts are consequences, both positive and negative, experienced by people due to changes associated with a proposed development. This may include changes to people's way of life, their culture, community, environment, health and wellbeing, personal and property rights, and their fears and aspirations.[2]

Identified social impacts are assessed by considering the consequence of the impact and the likelihood of the impact occurring.

1.1.2. Economic impacts

Economic impact of the proposal identifies and measures the direct and indirect economic activity associated with the construction and ongoing operations of the proposed project, and can be measured in terms of:

- Direct and indirect jobs associated with the construction and ongoing operation of the project
- Direct and indirect Gross Value Added (GVA), associated with the supply chain and consumption effects of the project.

In addition to this, there are several other economic impacts to do with the proposed development's construction workforce:

- Identifying the opportunity for workers within Bland LGA to be employed on the project
- The capacity within the local housing market to accommodate temporary construction workforce
- Retail spend of temporary construction workers.

Economic impacts are measured by employment and GVA, an economic measure of economic activity.

[2] Adapted from the International Association for Impact Assessment (IAIA).

2. THE PROPOSAL

The proposed development relates to the construction and operation of a 90 mega-watt (MW) AC PV solar farm at West Wyalong, central west New South Wales.

Development consent is sought for the construction, operation and decommissioning of the solar farm comprising:

Construction:

- Approximately up to 300 construction workers
- Approximately 9-12 months for the construction timing of the proposal

Operation:

- Approximately 296,000 panels and associated electrical infrastructure (invertors, transformers, batteries and substations).
- One maintenance shed
- Internal access roads and access points
- Security fencing around the perimeter of the solar farm
- CCTV poles up to 2.5 metres high located along the perimeter of the site
- Landscape screening at the site perimeter
- Project lifecycle of approximate 30 years, with the option of a 10-year lease extension.

Decommissioning:

- Decommissioning timeline of approximately 4 months
- Solar panels unscrewed from the mounting frames
- Removal of horizontal mounting poles and piles from the ground
- Removal of cabling from the ground
- Removal of inverters, transformers, battery and switchgear cabinets / housing
- Removal of fencing and CCTV equipment

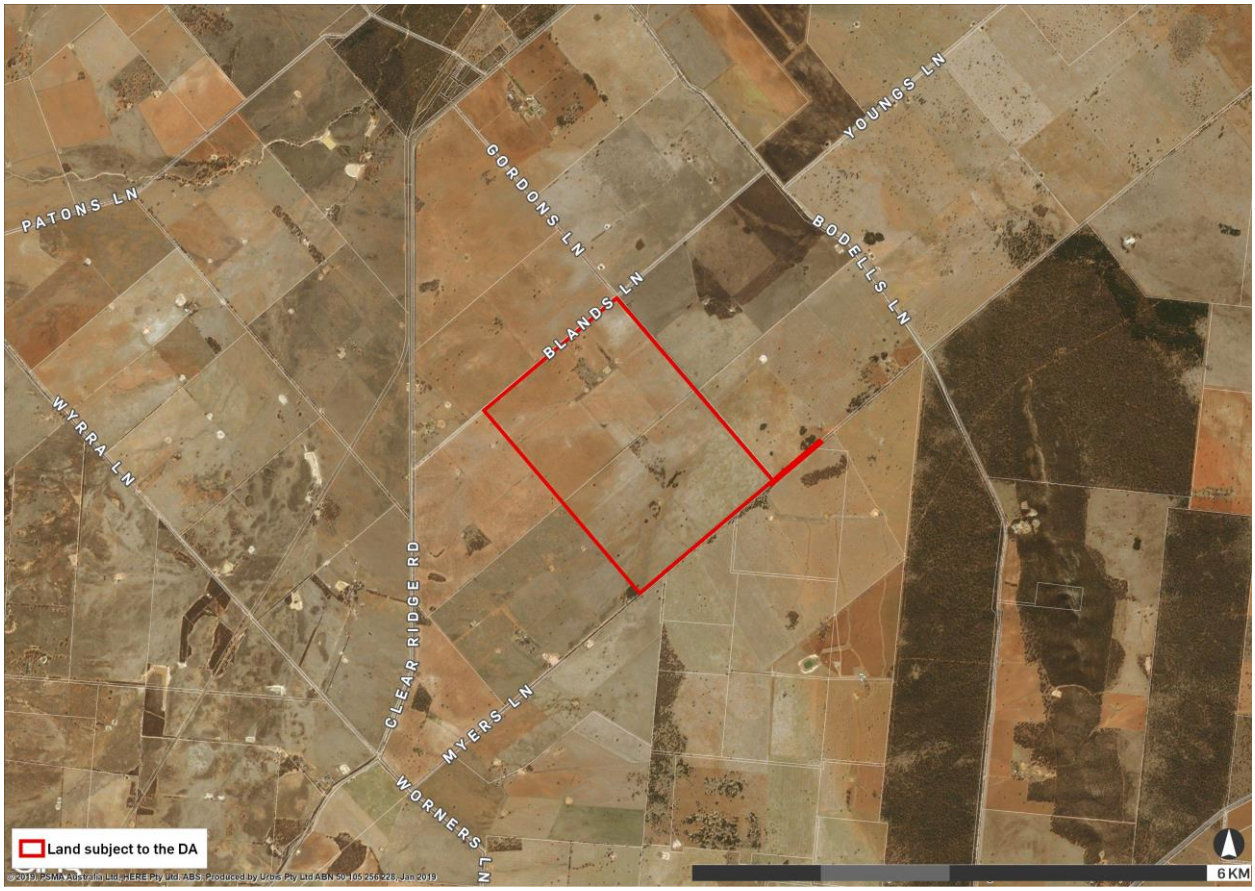
2.1. SITE CONTEXT

The site is located at 228 – 230 Blands Lane and is legally described as Lot 17 and 18 DP753081. The solar farm infrastructure is located solely on Lot 18 DP753081; site access is provided on Lot 17 DP753081. Lot 18 has an area of 280ha. The figure overleaf outlines the site location.

The site is located north-east of West Wyalong, within the Bland Shire in the north of the Riverina-Murray region. West Wyalong is the largest town in the Bland Shire LGA, with the smaller town of Wyalong located a few kilometres to the east.

The site is generally flat and comprises one constructed dam, an ephemeral water channel and clustered and sporadic vegetation. The surrounding area primarily consists of agricultural land for cropping and grazing. Further north of the site is an operational gold mine (Cowal Gold Mine) and to the south of the site there is a site with an undetermined SSD development application (DA) for a 135MW solar farm located north-east of Wyalong.

Figure 1 – Site location



Source: Urbis GIS

3. POLICY CONTEXT

The following key State and local government policies were reviewed to understand the strategic context of the site and proposed development:

Australian Renewable Energy Target (2001)

The large-scale renewable energy target (LRET) was introduced by the Australian Government in 2001 to increase the amount of renewable energy being used in Australia's electricity supply. The LRET includes annual targets which require significant investment in new renewable energy generation capacity, with 33,000 gigawatt hours of renewable electricity generation to be met by 2020.

NSW Renewable Energy Action Plan (2013)

The NSW Government released a Renewable Energy Action Plan in 2013 to support the large-scale renewable energy target (LRET) and guide renewable energy development in NSW. The Renewable Energy Action Plan adopts 24 actions to achieve the three goals of:

- Attracting renewable energy investment.
- Building community support.
- Attracting and growing renewable energy expertise.

NSW Climate Change Policy Framework (2016)

The NSW Climate Change Policy Framework (2016) (the Policy Framework) outlines the NSW Government's long-term objectives to achieve net-zero emissions by 2050 and to make NSW more resilient to a changing climate.

The Policy Framework includes the implementation of emission savings policies and taking advantage of opportunities to grow new industries in NSW, such as 'advanced energy' and renewable energy solutions.

Riverina Murray Regional Plan 2036 (2013)

The Department of Planning and Environment *Riverina Murray Regional Plan 2036* (the Regional Plan) outlines the 20-year strategic vision for the area to guide the future planning priorities and infrastructure development in the area. The Regional Plan is structured around four regionally focussed goals with associated directions and actions to guide delivery. Relevant to this proposal is:

Goal 1 – A growing and diverse economy

Goal 1 outlines priority growth sectors to help achieve a diverse economy. Renewable energy and mining are listed as a priority growth sector. Key actions to help achieve this goal include to:

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

The Regional Plan also establishes priorities for each Council to help them implement the goals set out in the plan. Key priorities of relevance to this proposal for the Bland Shire LGA include to:

- Support the mining and resources sector and associated businesses.
- Leverage opportunities from the Shire's location to support diverse industries, including freight and logistics industries.

Bland Shire Council Community Strategic Plan 2017 – 2027 (2017)

The Bland Shire Council Community Strategic Plan 2017-2027 (the Strategic Plan) outlines the vision of the local community and details how Council will achieve this over the next 10 years. The Strategic Plan is

guided by four central themes with associated objectives and strategies to guide delivery. Key objectives and strategies of relevance to this project include:

Objective 15: Promote the Shire as a place to do business.

Strategies to achieve this include to:

- Encourage and actively seek out businesses and industry to relocate within the Shire.
- Continue ongoing engagement and communication with the Shire's existing industry including support for diversification and alternate industry or business.

Objective 16: Work with our communities and businesses to use our resources in a sustainable way for the future of the Bland Shire.

Strategies to achieve this include:

- Ensure a sustainable environment for current and future generations through effective management and planning for the long term future by ensuring appropriate land is zoned and available to support business and industry growth.
- Through partnerships with stakeholders foster our education, learning and training industry and increase employment opportunities within the Shire.
- Liaise with utility providers to ensure a quality sustainable service to the community.
- The availability of commercial and industrial land, coupled with our geographic location, will be maximised and marketed to boost economic growth.

South West Slopes Regional Economic Development Strategy

The NSW Government has assisted local councils and their communities to develop 37 Regional Economic Development Strategies across regional NSW. Each strategy is designed around one or more local government areas that form a functional economic region as defined by economic data and community input.

The South West Slopes Regional Economic Development Strategy 2018–2022 (the Strategy) sets out a long-term economic vision and associated Strategy for the Region's economic development for the five LGAs comprising Bland Shire Council, Cootamundra-Gundagai Regional Council, Hilltops Council, Temora Shire Council and Weddin Shire Council. It builds on the endowments and economic strengths and specialisations of the region to guide investment over the next four years.

In 2016, the Region was home to 45,368 people with the major population centres being Young, Cootamudra, Temora, West Wyalong, Grenfell, Harden, Gundagai and Boorowa.

People who work in the region typically live in the region, as most LGAs in the region have a high level of employment self-containment.

Bland Shire has the highest employment self-containment of all LGAs, with only 12 percent of employed residents working in other LGAs.

Despite this, economic linkages in the major sectors across the Region, such as agriculture, mining, manufacturing and tourism, underpin the basis for the treatment of the five LGAs as a functional economic region.

Energy infrastructure was identified as a key strategy, to ensure access to and affordability of energy for current and future demand for the agricultural and mining sectors.

A new solar farm could help improve the competitiveness of business in the Region, by supplying energy to new residential estates and business in West Wyalong and surrounding regions.

The reliability of transport infrastructure (particularly with respect to road transport), telecommunications and energy were identified as major risks for the Region and its major employing and value-add sectors.

4. SOCIO-ECONOMIC BASELINE

Understanding the existing social and economic environment is important in identifying the potential impacts the proposed development may have. It provides a benchmark against which direct, indirect and cumulative impacts can be analysed and change can be measured.

4.1. COMMUNITY PROFILE

The following community profile includes a demographic analysis of Wyalong and West Wyalong suburbs, based on 2016 Australian Bureau of Statistics (ABS) data. For comparison purposes, the suburbs have been compared to the Bland Shire LGA and Central West Statistical Area 4 (Central West Region). The complete demographic data set is contained in **Appendix A.**

Population

- The suburbs of Wyalong and West Wyalong are small communities, with a combined population of 3,800 people.

Family and households

- Wyalong and West Wyalong are characterised as **family areas**. The majority of the suburb's population live in family households (72.8% and 65.2%) and those families households are predominately couple families with children (47.3% and 47.4%).

Age

- West Wyalong has an **older population**, with 13.4% of the suburb aged 75 years and over. This is reflected across Bland Shire LGA with 11% of the population aged 75 years and over, compared to 8.5% in the Central West Region.
- By comparison Wyalong is slightly younger, with only 6.5% of the population aged 75 years and over.

Housing

- Wyalong and West Wyalong are characterised by **low density housing** which is consistent with a rural area, with more than 90% of the population living in detached dwellings.
- The majority of homes in Wyalong (72.3%) and West Wyalong (70.5%) are owned outright or owned with a mortgage.

Cultural diversity

- Wyalong and West Wyalong have **low levels of cultural diversity** with more than 80% of the community speaking English only. Between 4.7%-6.5% of the population across the two suburbs identify as Aboriginal or Torres Strait Islander, which is comparable to the Central West Region (6.4%).

Employment and industry

- Wyalong and West Wyalong have **strong employment rates** compared to the Central West Region. Only 3.7% of Wyalong and 3.4% of West Wyalong are unemployed, compared to 6.2% in the Central West Region.
- The suburbs are characterised by a **trade worker population**. In Wyalong and West Wyalong the most common occupation is Technicians and Trades workers (20.5% and 15.6%).
- The **main industry of employment is Gold Ore Mining** in Wyalong and West Wyalong (10.9%).

Income and disadvantage

- SEIFA results indicate the **Region is generally disadvantaged**, with Wyalong, West Wyalong and Bland LGA residing in the lowest 30 - 40% of disadvantaged NSW areas.
- Both suburbs have slightly **lower median household incomes** compared to the Central West Region ($1,166).

Population growth

- Bland Shire LGA will experience **a declining population**, with the LGA expected to decline by 1.1% from 2016 to 2036.
- People aged **0 – 14 years will have the greatest decline** which will decrease by 350 children (2.7%) from 2016 to 2036. This decrease in the number of young children suggests the decline in a natural birth rate and a rise in the ageing population.

4.2. IMPLICATIONS FOR THIS ASSESSMENT

The above community profile indicates that Wyalong and West Wyalong are generally consistent with the profile of a rural area. Key trends of relevance to this assessment include:

- Bland Shire LGA is experiencing an ageing and declining population, which is likely to impact on the area's ability to generate a future workforce and economic growth.
- The region is moderately disadvantaged, with SEIFA data indicating Wyalong, West Wyalong and Bland LGA residing in the lowest 30 – 40% of disadvantaged areas in NSW.
- Median household incomes are lower than Central West which may impact on individual's ability to compete for services.
- Most homes are owned outright or with a mortgage, suggesting a permanent population and established community.

5. STAKEHOLDER AND COMMUNITY CONSULTATION

Understanding the views of individuals and communities that are potentially affected by a proposal is an important part of the SEIA process.

5.1. CONSULTATION ACTIVTIES

Urban Unity were engaged to undertake stakeholder and community consultation for the proposal and address the requirement of the SEARs. Urban Unity prepared a stakeholder and engagement strategy including:

- Community information booklet.
- Local newspaper advert.
- Community Information Session.
- One-on-one meetings and/or discussions with key stakeholders.

5.2. CONSULTATION KEY FINDINGS

Consultation was undertaken during October and November 2018. The Consultation Outcomes Report prepared by Urban Unity details the consultation activities undertaken and outlines key questions and themes raised during the consultation process including:

- Questions regarding the viability of two solar farm installations in the region.
- Concern regarding the extent of the glare and potential for a heat island effect.
- Request for site access from the NSW Free Flight Society (FFS) to retrieve model air craft that may overshoot into the solar farm boundary.
- Clarification regarding the potential impact of increased traffic on the road network surrounding the site.
- Queries about the potential impact the energy generated from the solar farm will have on individual power bills.

6. REVIEW OF TECHNICAL STUDIES

The following section provides a summary of the technical studies that were reviewed to inform this SEIA.

6.1. TRAFFIC IMPACT ASSESSMENT, ASON GROUP (DEC 2018)

A Traffic Impact Assessment (TIA) was prepared by Ason Group to assess the traffic and transport characteristics of the proposed development.

Key access intersections are identified in the TIA with particular regard for heavy vehicle trips during the construction phase. The majority of construction vehicles will use the preferred access route via Newell Highway – Bodells Lane – Blands Lane for trips between the site and the regional road network. A small number of truck trips (such as material supplies) may be generated from the south; these vehicles would use the West Wyalong Heavy Vehicle Bypass for trips between the Newell Highway (south) and Clear Ridge Road.

Construction staff residing in West Wyalong, Wyalong or other sub-regional centres to the east of the site will be transported in shuttle buses, using the Newell Highway (east) – Bodells Lane – Blands Lane route. Those residing in centres to the south during the construction stage would also use shuttle buses but utilise the Newell Highway (west) – Clear Ridge Road – Blands Lane route to the site.

The TIA makes the following conclusions:

- Even during the peak period of construction (Stage 2) the total traffic generation of the site is very moderate, estimated at 140 daily vehicle trips and up to 46 trips occurring during the AM and PM site peak periods.
- Stage 2 peak flows would be generated over a period of approximately 3 - 4 months only, while the total construction project would be completed in 9 - 12 months.
- The introduction of these peak construction flows would not alter the existing levels of service in the key roads or at key intersections providing access to the site.
- The introduction of these traffic flows would not warrant the upgrade of minor intersections.
- Appropriate management conditions can be introduced to ensure that Blands Lane and Bodells Lane are maintained to an appropriate standard throughout and after the construction period.
- The TIA states that once the solar farm is operational, it will generate little traffic on a daily basis. The small number of staff required during the operational stage will result in the average trip generation to the site of less than four vehicle trips per day.

6.2. LANDSCAPE AND VISUAL IMPACT ASSESSMENT, URBIS (NOV 2018)

A Landscape and Visual Impact Assessment (LVIA) was undertaken by Urbis to assess the visual impacts of the proposed development with regard for the day to day visual impacts on people's views.

The LVIA summarises that the site has a limited degree of visual exposure and overall has a low visual sensitivity. The proposed development is considered to be able to integrate into the site and would result in limited reduction to the landscape and visual amenity of the surrounding area. The conclusions made in this LVIA include:

- The proposal can be accommodated into the landscape without significant adverse impacts on the landscape quality of the surrounding area.
- A suitable 'environmental fit' can be achieved and the setting is capable of absorbing the proposal in conjunction with the landscape measures.
- The proposal would not significantly detract from the existing landscape character of the primary production zone.

6.3. ECOLOGY SUMMARY, SLR CONSULTING (OCT 2018)

An Ecology Summary was prepared by SLR Consulting for the purposes of identifying any flora and fauna species on site. The findings from this Ecology Summary are summarised as follows:

- A large diversity of flora and fauna species were identified with over 120 plant species and over 80 fauna species. The majority of these species occurred centrally in the southern lot within easements adjacent the property boundaries.
- The majority of the site consists of agricultural land which has low ecological value.
- No threatened flora species were identified on site.
- Two threatened fauna species were identified on the site including:
    - Grey-crowned Babbler which is considered vulnerable under the *NSW Biodiversity Conservation Act 2016* (BC Act).
    - Painted Honeyeater which is listed as vulnerable under the BC Act and under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).
- The native vegetation comprises five plant community types (PCTs). These comprise two non-listed PCTs and three Threatened Ecological Communities (TECs).

6.4. LANDSCAPE CONCEPT DESIGN REPORT, SITE IMAGE LANDSCAPE ARCHITECTS (DEC 2018)

A Landscape Concept Design Report (Landscape Concept) was prepared by Site Image Landscape Architects to address the landscape design aspects of the proposal. The Landscape Concept has been prepared in response to the ecological, visual impact and bushfire assessments and findings.

The Landscape Concept is summarised as follows:

- Within the site boundary there is to be a perimeter fire buffer zone at a minimum of 15 metres, clear of any vegetation.
- In the south western corner of the site, there is a 100m flight clearance buffer adjoining the NSW Free Flight Society which is approximately 1.4km in length.
- Boundary landscaping is to be at most five metres in width, for 250m along the north and south west corner of Blands Lane.
- Infill planting is to be installed five metres in width along the remaining site boundaries i.e. remainder of Blands Lane, Gordon Lane, Myers Lane and the south western boundary landscape is to incorporate vehicular access around the perimeter of the site and to key internal locations.
- Proposed planting species must have a minimum truck clearance of 300mm from the ground and not overshadow solar panels. The proposed planting species will mostly comprise of dominant species already found on site, and supplementary planting from a selection of endemic species.
- Solar panels are to have pastural grass surrounding and growing underneath, and be maintained through slashing or grazing.

Maintenance activities are also outlined in the report which includes implementation of a log book to record when maintenance work has been undertaken and associated actions. Plant replacement, pruning of plants and adjusting and replacing stakes and ties should occur on a timely basis.

6.5. NOISE IMPACT ASSESSMENT, SLR CONSULTING (DEC 2018)

A Noise Impact Assessment was undertaken by SLR Consulting to determine any potential noise and vibration emissions during the construction stage and operational noise emissions from transformers, inverters and general onsite vehicle activity.

6.5.1. Operational Noise

A noise model was developed to predict the proposed operational noise impacts from the proposed development, with meteorological conditions set to ‘worst-case’ in accordance with the guidelines outlined in

the report. The main sources of noise associated with the operation are transformers and inverters systems, substation, maintenance activities and noise from the tracking mechanism on the solar panels.

The assessment concludes that operational noise emissions associated with the proposed development are expected to comply with the relevant criteria.

6.5.2. Construction Noise

A three-dimensional model was prepared to identify the predicted construction noise levels from the receivers surrounding the proposed development. The report nominates the following working hours for construction as:

- 7:00am – 6:00pm Monday to Friday
- 8:00am – 1:00pm on Saturdays.

The report states that no exceedances of Noise Management Levels (NMLs) during standard daytime hours are predicted at any of the surrounding residential receivers during any the construction works.

It is noted that where it is necessary to undertake works outside of standard hours, the noise levels may exceed the NML at some of the surrounding sensitive receivers during the evening and night-time period. Where this happens, a noise management plan should be prepared to manage the impacts.

7. ASSESSING SOCIAL IMPACT

The significance of potential social impacts has been assessed by considering the level of impact (low, moderate and high) and the likelihood of the impact occurring throughout the project lifecycle.

7.1. LEVEL OF IMPACT

The following criteria is used to assess the level of impact:

- Duration – The timeframe over which the impact occurs or the frequency of potential impacts.
- Extent – The geographical area or the number of people affected.
- Severity – Scale or degree of change from the existing condition as a result of an impact.
- Sensitivity – The extent to which people or an environment can adapt to or mitigate the impact.

7.2. LIKELIHOOD

The following outlines a matrix for understanding the likelihood of an impact.

- Unlikely – Unlikely that the impact will occur throughout the project lifecycle.
- Likely – Likely that the impact will occur throughout the project lifecycle.
- Very Likely – Very likely that the impact will occur throughout the project lifecycle.

7.3. CUMULATIVE IMPACTS

Consideration is also given to the proposed development's potential contribution to cumulative impacts. Cumulative impacts are changes to the environment that are caused by an action in combination with other past, present and future human actions.

8. SOCIAL IMPACT ASSESSMENT

The following section provides an assessment of the potential social impacts of the proposed development.

8.1.1. Increased renewable energy production

Description of impact	Impacted groups
The proposal will increase the production of renewable energy and contribution to renewable energy targets.	• NSW residents. • Energy providers.
Assessment of the impact	
• The proposal is for a 90 mega-watt (MW) AC PV solar farm located on a 280 hectare site. The power created will be fed into the energy grid and will increase capacity on a large scale. • The proposal is aligned with state and local policy directions to increase renewable energy production and reduce emissions.	
Planned management measure	
• Non-identified	
Summary of impact	
The proposal will deliver a long-term positive impact by increasing renewable energy supply to the Australian energy grid and reduce harmful carbon emissions.	

8.1.2. Increased pressure on local infrastructure and services

Description of impact	Impacted groups
During construction the temporary workforce population may place additional pressure on the local infrastructure and services.	• Residents and businesses in West Wyalong and other townships that may host workforce accommodation.
Assessment of impact	
• West Wyalong and Wyalong are regional communities with a combined population of 3,141 and this population is expected to decline over the next 20 years. • The proposed development will introduce approximately up to 300 workers on site during Stage 2 and Stage 3 of the construction process. The introduction of up to 300 workers during peak construction represents a 7.9% increase in population for the West Wyalong and Wyalong area. • The construction worker population are likely to require access to local infrastructure and services during the 9-12 month construction period, including accommodation, hospitality, medical, childcare and retail. While this increase will have economic benefits, it may also impact the amenity of the local residents by increasing demand on local services resulting in reduced stock, increased waiting times and change in local amenity. • As outlined in Section 10.2.3 it has been assessed that there is insufficient accommodation in West Wyalong to meet the needs of the peak construction workforce.	

Planned management measures
• Stakeholder and community consultation has been undertaken to inform the local community and key stakeholders and provide an opportunity for feedback.
Summary of impact
The introduction of up to 300 workers during peak construction represents a 7.9% increase in population for the West Wyalong and Wyalong area. This rapid increase is likely to place additional demand on local infrastructure and services and may impact on the amenity of existing residents through increased waiting times and reduced stock/availability. This impact will be limited to the period of construction.

8.1.3. Cumulative impacts of major development in Bland Shire

Description of impact	Impacted groups
• Cumulative impacts of major infrastructure and resources projects currently proposed or operating in proximity to the site.	• Residents and businesses in the Bland Shire.
Assessment of impact	
• Regional NSW has seen an increase of solar farm projects. In 2017, 10 solar farms were approved in regional NSW.[3] There have also been additional approvals in 2018. • Locally there are number of major developments planned or in operation. In addition to the proposed development, there is a current proposal by ESCO Pacific for a solar farm 7km northeast of West Wyalong, that will deliver 350,000 solar panels on 259 hectares. Cowal Mine, located 40km north-east of West Wyalong has been granted a licence extension to 2032 of and is also seeking an expansion of its operations • Media coverage of solar development in NSW and QLD has highlighted community concern over the potential impacts of solar farms on the loss of agricultural land and changes in the visual character of the landscape. The proposed development site is not identified as Biophysical Strategic Agricultural Land. • As outlined in Section 10.2.3 it has been assessed that there is insufficient accommodation in West Wyalong to meet the needs of the peak construction workforce. Given the small size of the rural town it is reasonable ot assume there would be limited additional capacity in service and facilities.	
Planned management measures	
• Stakeholder and community consultation has been undertaken to inform local residents and businesses of the proposal development. • Preparation of a landscaping strategy to help minimise any potential visual impacts.	
Summary of impact	
Based on proposed, planned and operational major development in the Bland Shire the proposed development is likely to contribute to cumulative changes and impacts in the local area. The contribution of the proposal to cumulative visual impacts or loss of agricultural land is likely to be limited. The proposed	

[3] NSW leads nation for solar farms, Ministerial Media Release, February 2018

development site is not identified as Biophysical Strategic Agricultural and a landscape strategy has been prepared to minimise any potential visual impacts. However, it is likely that the proposal may contribute to cumulative pressure on local infrastructure and services.

9. ASSESSING ECONOMIC IMPACT

9.1. TYPE OF IMPACT

This section identifies the economic benefits that would accrue during the construction and operational periods of the proposed development. More specifically, this section:

- Estimates the direct and indirect construction jobs through the construction phase of development.
- Estimates the direct and indirect employment created through the operation of the proposed development.
- Quantifies the direct and indirect gross value add (GVA) through the construction and operational phase of the project.
- Other economic impacts addressed include:
  - Identifying the opportunity for workers within Bland LGA to be employed on the project.
  - The capacity within the local housing market to accommodate temporary construction workforce.
  - Retail spend of temporary construction workers.

9.2. ECONOMIC MODELLING

Modelling included in this report uses REMPLAN to assess current and potential economic impacts. REMPLAN is an Input-Output model that captures inter-industry relationships within an economy. It can assess the area-specific direct and flow-on implications across industry sectors in terms of employment, wages and salaries, output and value-added (Gross Regional Product).

REMPLAN base data is drawn from the Australian Bureau of Statistics and other government agencies. It provides highly reliable, up-to-date, and defensible economic modelling across any state or region in Australia.

To effectively model the impacts of the proposed development, we have adopted the following estimates and assumptions:

- The project has an estimated construction period of 9 - 12 months. For the purposes of modelling the construction phase economic benefit Urbis have adopted a period of 12-months, assumed to begin in June 2019.
- Construction costs would be distributed pro-rata across the construction period.
- A peak period consisting of up to 300 employees on-site during the construction stage, with the total number of construction workers equivalent to 142 direct jobs per annum and additional 100 indirect supply-chain jobs.

10. ECONOMIC IMPACT ASSESSMENT

10.1. DIRECT AND INDIRECT EMPLOYMENT

10.1.1. Construction Phase Economic Benefits

Construction of the proposed development would require substantial capital investment and employment over the development period. This investment would sustain significant employment in the construction industry and have supply chain effects felt through the Bland LGA and NSW economy.

Table 10.1 illustrates the estimated number of jobs that are required during the construction phase, and the supply chain employment effects generated by the development. We have been informed that the construction of the solar farm will require up to 300 direct jobs in the peak months of construction.

Table 10.1 shows that the estimated construction phase employment based on the capital investment required for the construction phase (as detailed in Appendix B – Capital Investment Value Statement), resulting in up to 142 direct jobs over a 12-month period.

In addition to direct employment, there are supply chain effects felt through the local economy. Specifically, the 142 direct jobs required to construct the solar farm have the potential to support a further 100 jobs across the project's supply chain in the Bland LGA because of increased demand for intermediate goods and services.

Total employment generated from the construction phase could therefore be up to **242 jobs over the development timeframe.**

Construction Employment Benefit

Proposed developments; 2018 — Table 10.1

	Construction Phase
Direct Employment[2]	142 jobs*
Supply Chain Effect Employment across NSW	100 jobs
Total Employment	**242 jobs**

**Note: 12-month average*
Source: 1.Lightsource Development Services Australia; 2.Lightsource Development Services Australia; REMPLAN economy; Urbis

Based on the estimated total construction cost, the proposed development would **contribute $51 million GVA** to the economy through the construction phase.

Table 10.2 shows that the development has the potential to support up to $13 million in supply chain GVA across NSW. Supply chain GVA reflects increased economic activity in supporting and supplying businesses as a result of construction jobs and output. Over the total construction phase, this could support up to **a total GVA of $64 million.**

Construction Gross Value Added (GVA)

Proposed development; 2018 — Table 10.2

	Total Construction Phase
Estimated Construction GVA	$51 million
Supply Chain GVA across NSW	$13 million
Total GVA	**$64 million**

Source: REMPLAN economy; Urbis

10.1.2. Operational Phase Economic Benefits

When construction of the proposed development is complete, operation of the solar farm will support new jobs in the form of staff required to operate the facility. This direct employment benefit will also have a direct GVA benefit and supply chain flow on effects felt through the economy.

Ongoing Employment

Based on an estimate provided by Lightsource Development Services Australia, operation of the proposed solar farm could require up to three employees on site. Table 10.3 presents the supply chain employment benefit that could arise as part of the ongoing operation of the facility. The proposed solar farm operations could support 2 additional jobs in supplying industries throughout the Bland LGA.

Total employment generated from the operational phase could therefore be in the order of **five jobs** ongoing throughout operation.

Ongoing Employment Benefit

Operational Phase — Table 10.3

	Operational Phase
Direct Jobs[1]	3
Supply Chain Effect Jobs[2]	2
Total Jobs	**5**

Source: 1. Lightsource Development Services Australia; 2. REMPLAN economy; Urbis

Ongoing GVA

Table 10.4 illustrates that direct ongoing employment of three jobs at the facility has the potential to support direct GVA of up to $2.1 million in each year of operation.

This direct employment and economic benefit in turn has the potential to support up to $0.5 million in supply chain GVA across NSW each year. Supply chain GVA reflects increased economic activity in supporting and supplying businesses as a result of jobs and output from the facility.

The total economic benefit from the operational phase could therefore be in the order of **$2.1 million in GVA in each year of operation.**

Ongoing Gross Value Added (GVA) Benefit

Annually; Operational Phase; 2018 — Table 10.4

	Operational Phase
Direct Jobs[1]	3
Direct GVA per year[2]	$1.6 million
Indirect Jobs	2
Supply Chain GVA per year	$0.5 million
Total GVA per year	**$2.1 million**

Source:1. Lightsource Development Services Australia; 2. REMPLAN economy; Urbis

10.2. OTHER ECONOMIC BENEFITS

In addition to the jobs and economic growth that will be supported during the construction and operational period of the project, the development is also expected to have other economic impacts on the local economy and wider region.

This section analyses the wider economic benefits of the proposed development in terms of employment uplift and retail spend generated during the construction and operation of the facility.

10.2.1. The Local Region

As outlined in Section 3, the proposed solar farm will be located within the Bland LGA in NSW. Therefore, its economic impacts are likely to be most strongly felt within this region. In order to better understand these impacts, a profile of the region is provided below.

Industry Profile

The current (2016) industry profile of jobs in the Bland LGA reflects a largely agricultural, mining and retail trade-based region which stands in contrast to overall NSW. The Agriculture, Forestry and Fishing industry provides the largest number of jobs in the Bland LGA (745 jobs), whilst in NSW overall the largest number of jobs is provided by the Health Care and Social Assistance industry (419,986 jobs). Other key industries within the Bland LGA include:

1. Mining (313 jobs in 2016, representing 29% of total jobs).

2. Retail Trade (197 jobs in 2016, representing 8% of total jobs.)

3. Education and Training (193 jobs in 2016, representing 7% of total jobs).

Strong job growth between 2011 and 2016 in the Bland LGA was focused in the Rental, Hiring and Real Estate Services industry, increasing by 16.1% per annum (compared to 3.1% per annum in NSW). This job growth indicates that there is strong demand for accommodation within the Bland LGA which could be driven by temporary workers and tourism. Job growth was also experienced in the following industries:

4. Construction (92 jobs to 109 jobs, +3.4% in Bland LGA growth per annum).

5. Administrative and Support Services (29 jobs to 34 jobs, +3.2% in Bland LGA growth per annum).

6. Health Care and Social Assistance (147 jobs to 164 jobs, +2.2% in Bland LGA growth per annum).

Overall, jobs growth in the Bland LGA between 2011 and 2016 has lagged behind that of NSW overall (0.4% per annum in Bland LGA vs 2.1% per annum in NSW). There are several key industry sectors within the Bland LGA which have experienced negative growth:

7. Wholesale Trade (79 jobs to 31 jobs, -17.1% growth per annum).

8. Information, Media and Telecommunications (12 jobs to 5 jobs, -16.1% per annum).

9. Electricity, Gas, Water and Waste Services (16 jobs to 7 jobs, -15.2% growth per annum).

The requirement of three onsite workers for the proposed solar farm during its operation will provide a boost to the Electricity, Gas, Water and Waste Services industry which has experienced negative job growth between 2011 and 2016.

Jobs by Industry

Bland LGA vs NSW, 2011-16 Table 10.5

	Bland LGA			NSW			% Growth p.a.	
Industry	**2011**	**2016**	***2011-16***	**2011**	**2016**	***2011-16***	***Bland LGA***	***NSW***
Agriculture, Forestry and Fishing	713	745	32	68,883	73,132	4,249	0.9%	1.2%
Mining	316	313	-3	29,798	30,443	645	-0.2%	0.4%
Manufacturing	84	91	7	258,914	196,910	-62,004	1.6%	-5.3%
Electricity, Gas, Water and Waste Services	16	7	-9	33,853	31,695	-2,158	-15.2%	-1.3%
Construction	92	109	17	221,682	280,552	58,870	3.4%	4.8%
Wholesale Trade	79	31	-48	137,212	103,955	-33,257	-17.1%	-5.4%
Retail Trade	231	197	-34	318,845	325,234	6,389	-3.1%	0.4%
Accommodation and Food Services	152	150	-2	206,261	238,757	32,496	-0.3%	3.0%
Transport, Postal and Warehousing	142	106	-36	151,955	158,294	6,339	-5.7%	0.8%
Information Media and Telecommunications	12	5	-7	71,630	73,036	1,406	-16.1%	0.4%
Financial and Insurance Services	24	17	-7	156,937	167,192	10,255	-6.7%	1.3%
Rental, Hiring and Real Estate Services	9	19	10	50,887	59,304	8,417	16.1%	3.1%
Professional, Scientific and Technical Services	65	62	-3	242,500	272,194	29,694	-0.9%	2.3%
Administrative and Support Services	29	34	5	100,353	116,824	16,471	3.2%	3.1%
Public Administration and Safety	147	123	-24	183,410	196,609	13,199	-3.5%	1.4%
Education and Training	183	193	10	245,243	280,281	35,038	1.1%	2.7%
Health Care and Social Assistance	147	164	17	356,522	419,986	63,464	2.2%	3.3%
Arts and Recreation Services	11	5	-6	45,556	51,516	5,960	-14.6%	2.5%
Other Services	88	103	15	115,590	123,842	8,252	3.2%	1.4%
Not Defined	6	126	120	37,495	158,419	120,924	-	-
Total	**2,546**	**2,600**	**54**	**3,033,526**	**3,358,175**	**324,649**	**0.4%**	**2.1%**

Source: ABS Census; Urbis

Overall, the industries in which residents of the Bland LGA are employed (Table 10.6) is consistent with the industry profile of jobs in the region (refer to Table 10.5). As highlighted by table 10.5 and 10.6, there are 2,525 employed residents within the Bland LGA, and 2,600. This indicates a highly localised employment market, with very few residents required to leave the region for work.

Employed Residents by Industry

Illawarra vs NSW, 2011-16 Table 10.6

	Bland LGA			NSW			% Growth p.a.	
Industry	**2011**	**2016**	***2011-16***	**2011**	**2016**	***2011-16***	***Bland LGA***	***NSW***
Agriculture, Forestry and Fishing	761	721	-40	69,576	72,623	3,047	-1.1%	0.9%
Mining	251	210	-41	31,185	31,735	550	-3.5%	0.4%
Manufacturing	93	76	-17	264,867	197,335	-67,532	-4.0%	-5.7%
Electricity, Gas, Water and Waste Services	19	10	-9	34,205	31,881	-2,324	-12.0%	-1.4%
Construction	112	131	19	230,057	282,493	52,436	3.2%	4.2%
Wholesale Trade	85	47	-38	138,891	103,720	-35,171	-11.2%	-5.7%
Retail Trade	243	204	-39	324,725	326,394	1,669	-3.4%	0.1%
Accommodation and Food Services	164	146	-18	210,379	239,221	28,842	-2.3%	2.6%
Transport, Postal and Warehousing	152	111	-41	155,024	158,763	3,739	-6.1%	0.5%
Information Media and Telecommunications	8	12	4	72,489	73,402	913	8.4%	0.3%
Financial and Insurance Services	28	15	-13	158,422	167,257	8,835	-11.7%	1.1%
Rental, Hiring and Real Estate Services	8	17	9	51,551	59,650	8,099	16.3%	3.0%
Professional, Scientific and Technical Services	61	65	4	247,292	274,081	26,789	1.3%	2.1%
Administrative and Support Services	38	49	11	102,355	117,484	15,129	5.2%	2.8%
Public Administration and Safety	148	121	-27	192,635	204,171	11,536	-3.9%	1.2%
Education and Training	187	186	-1	248,951	282,567	33,616	-0.1%	2.6%
Health Care and Social Assistance	160	186	26	364,321	422,201	57,880	3.1%	3.0%
Arts and Recreation Services	13	5	-8	46,332	51,776	5,444	-17.4%	2.2%
Other Services	93	107	14	117,616	124,479	6,863	2.8%	1.1%
Not Defined	70	106	36	77,459	159,103	81,644	-	-
Total	**2,694**	**2,525**	**-169**	**3,138,332**	**3,380,336**	**242,004**	**-1.3%**	**1.5%**

Source: ABS Census; Urbis

Table 10.7 outlines the employment self-containment and self-sufficiency in the Bland LGA in 2011 and 2016 broken down by industry sector. The self-containment rates represent the proportion of employed Bland LGA residents who work in the Bland LGA. As shown by Table 10.7, Bland LGA currently has a self-containment rate of 89% which has increased from 82.8% in 2011.

There are three sectors in Bland LGA with self-containment rates below 80%:

1. Wholesale trade (66% in 2016, down 18 percentage points since 2011).

2. Construction (71% in 2016, broadly in line with 2011).

3. Administrative and support services (76% in 2016, up 2 percentage points since 2011).

These industry sectors have a lower rate self-containment when compared with other industries, with an elevated proportion of residents who are employed in these sectors and leaving the region for work.

Low self-containment rates usually occur because there is a shortage of jobs in the local region or because residents are being drawn out of the local region by significant employment centres or projects.

Overall, the self-containment rate for the Bland LGA is high (89%), however, lower than NSW overall (98%). This high self-containment rate suggests a highly localised employment market, with few residents required to leave the region for work.

The self-sufficiency rates reflect the proportion of jobs in the Bland LGA that are occupied by Bland LGA residents. Overall, the Bland LGA has a current self-sufficiency rate of 86% which has decreased slightly from 2011 (88%). This suggests that while a high proportion of jobs in the region are occupied by local residents, an increasing share of jobs are being taken by people who do not reside in the Bland LGA.

The industries with low self-containment rates have relatively high self-sufficiency rates (particularly construction). This indicates that while some workers from outside the region are taking up jobs in the Bland LGA that could otherwise be filled by local residents, the main reason for low self-containment rates in these industries is a shortage of jobs within the Bland LGA.

This presents an opportunity for construction jobs generated by the proposed development to be retained and sourced locally amongst the 131 resident construction workers, 29% of which currently leave the LGA for employment.

Employment Self-Containment and Self-Sufficiency

Bland LGA, 2011-16 — Table 10.7

	Self-Containment			Self-Sufficiency		
Industry	**2011**	**2016**	***2011-16***	**2011**	**2016**	***2011-16***
Agriculture, Forestry and Fishing	84.0%	91.8%	7.8%	89.6%	88.9%	-0.8%
Mining	81.3%	91.0%	9.7%	64.6%	61.0%	-3.5%
Manufacturing	68.8%	82.9%	14.1%	76.2%	69.2%	-7.0%
Electricity, Gas, Water and Waste Services	84.2%	90.0%	5.8%	-	-	-
Construction	71.4%	71.0%	-0.4%	87.0%	85.3%	-1.6%
Wholesale Trade	83.5%	66.0%	-17.6%	89.9%	100.0%	10.1%
Retail Trade	90.9%	93.1%	2.2%	95.7%	96.4%	0.8%
Accommodation and Food Services	90.9%	90.4%	-0.4%	98.0%	88.0%	-10.0%
Transport, Postal and Warehousing	82.9%	88.3%	5.4%	88.7%	92.5%	3.7%
Information Media and Telecommunications	-	-	-	-	-	0.0%
Financial and Insurance Services	71.4%	100.0%	28.6%	83.3%	88.2%	4.9%
Rental, Hiring and Real Estate Services	-	-	-	-	-	-
Professional, Scientific and Technical Services	90.2%	90.8%	0.6%	84.6%	95.2%	10.5%
Administrative and Support Services	73.7%	75.5%	1.8%	96.6%	108.8%	12.3%
Public Administration and Safety	95.9%	97.5%	1.6%	96.6%	95.9%	-0.7%
Education and Training	84.0%	86.6%	2.6%	85.8%	83.4%	-2.4%
Health Care and Social Assistance	84.4%	87.6%	3.3%	91.8%	99.4%	7.6%
Arts and Recreation Services	84.6%	100.0%	15.4%	100.0%	100.0%	0.0%
Other Services	79.6%	93.5%	13.9%	84.1%	97.1%	13.0%
Total	**82.8%**	**89.0%**	**6.2%**	**87.6%**	**86.4%**	**-1.2%**

Source: ABS Census; Urbis

Unemployment Rates

Unemployment in the Bland LGA has been below that of NSW over the last seven years, averaging 4.2% compared to NSW's 5.3%. Over this period, the number of employed persons has varied between 2,923 and 3,259 persons.

The unemployment rate has fallen significantly since 2015, with the number of unemployed persons declining from 184 in September quarter 2015, to a low of 87 in the December quarter 2017.

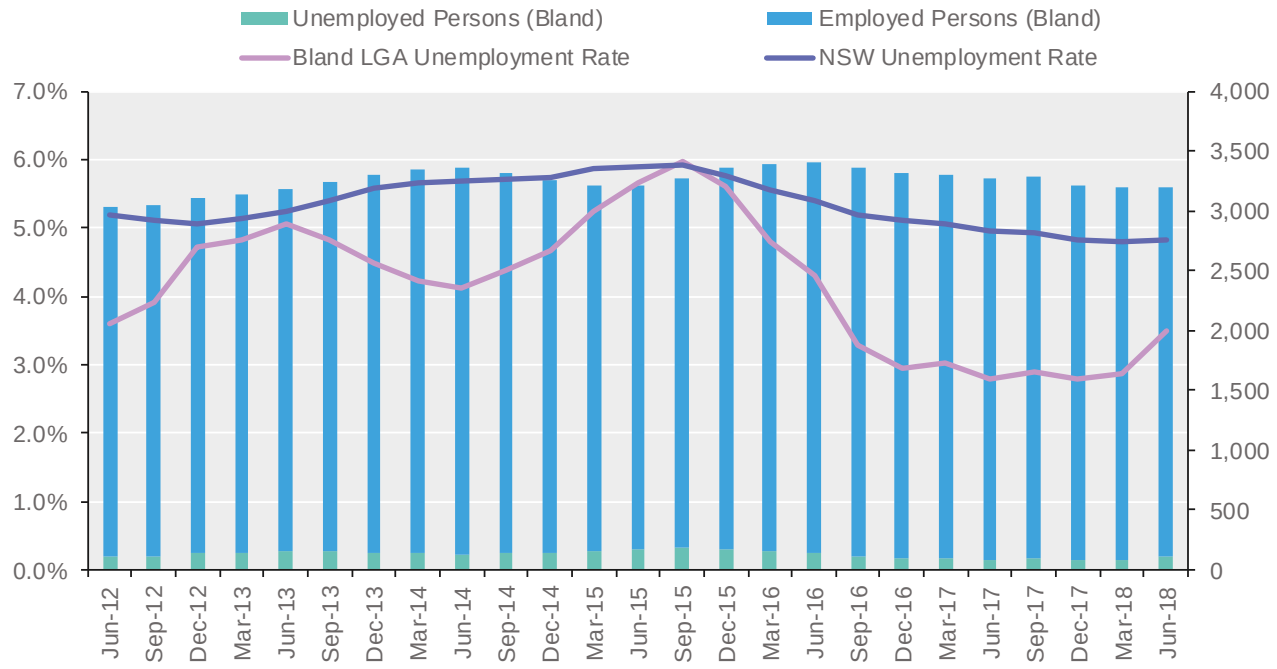
However, Bland LGA's unemployment rate has increased from 2.9% in March 2018 to 3.5% in June 2018, with the number of unemployed persons increasing from 89 to 108.

While there will be some opportunity to potentially retain construction workers who are currently leaving the LGA for work, and take up the recently increased unemployed labour force, overall this analysis suggests a relatively tight labour market.

Given the tight labour market in Bland LGA there will likely be a need to employ temporary workers for the construction of the proposed solar farm, in particularly during the peak period which will require up to 300 construction workers.

Unemployment

Bland LGA and NSW, 2012-18 Chart 10.1



Source: ABS; Department of Jobs and Small Business; Urbis

Contributing to Local Employment and Economic Development

Table 10.8 outlines the sector distribution of jobs that will be supported by the construction of the proposed solar farm and the uplift this represents for each sector. Those industry sectors which are anticipated to experience the greatest uplift are highlighted in red.

It is estimated that the solar farm could directly and indirectly support up to 242 annualised equivalent jobs across 18 industry sectors over the construction phase.

The construction industry will experience the greatest uplift, with 175 annualised equivalent direct and indirect jobs anticipated. This uplift in construction jobs presents an opportunity for the Bland LGA to retain more construction workers locally, which currently has a low self-containment rate, and employ unemployed labour force.

Employment Uplift from Proposed Development

Direct and Indirect Jobs - Construction Phase, Bland LGA — Table 10.8

Industry	Jobs (2016)	Jobs from Proposed Development	% Uplift
Agriculture, Forestry and Fishing	745	0	-
Mining	313	1	0.3%
Manufacturing	91	7	7.7%
Electricity, Gas, Water and Waste Services	7	0	-
Construction	109	175	160.6%
Wholesale Trade	31	1	3.2%
Retail Trade	197	5	2.5%
Accommodation and Food Services	150	2	1.3%
Transport, Postal and Warehousing	106	10	9.4%
Information Media and Telecommunications	5	0	-
Financial and Insurance Services	17	0	0.0%
Rental, Hiring and Real Estate Services	19	5	26.3%
Professional, Scientific and Technical Services	62	20	32.3%
Administrative and Support Services	34	8	23.5%
Public Administration and Safety	123	3	2.4%
Education and Training	193	0	-
Health Care and Social Assistance	164	0	-
Arts and Recreation Services	5	0	-
Other Services	103	5	4.9%
Not Defined	126		-
Total	**2,600**	**242**	***9.3%***

Source: Lightsource Development Services Australia; REMPLAN economy; Urbis

10.2.2. Retail Spend

Chart 10.2 outlines per capita retail spend (by category) for the Bland LGA. The chart demonstrates that Bland LGA residents spend $13,693 annually on retail goods and services.

As outlined in Section 10.2.1, due to the relatively tight labour market within Bland LGA there will likely be a need to source a proportion of the construction workforce outside the LGA.

Because the specific proportion of temporary and local construction workers has not yet been finalised, we have provided a range of retail spend assuming a 50% temporary workforce and a 100% temporary workforce.

This analysis provides an indicative estimate of the potential additional retail spend generated in the Bland LGA over the project's construction phase. Urbis have considered spend categories relevant to temporary workers only.

We estimate that the relevant spend categories for these workers will include:

1. Food Retail – This category captures spend on groceries and is estimated to be $6,136 per annum ($511 per month).

2. Food Catering – This category captures food and beverage spend (restaurants, bars and take-away) and is estimated to be $1,945 per annum ($162 per month).

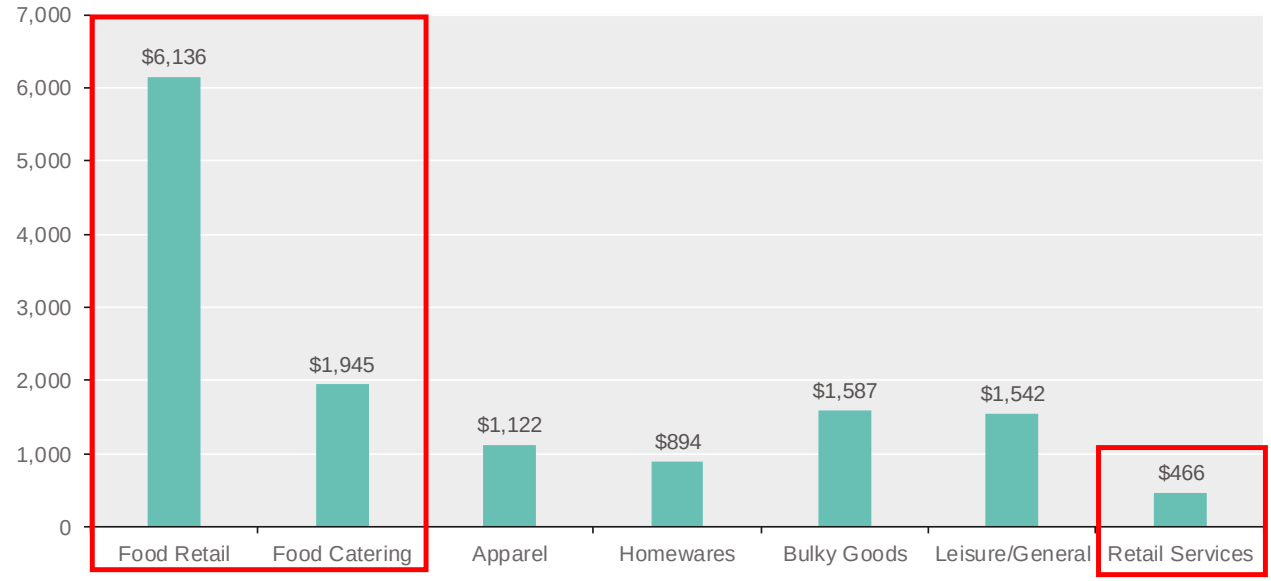
3. Retail Services – This category captures spend on services (hairdressers, optometry, mechanics etc.) and is estimated to be $466 per annum ($39 per month).

As a result of this analysis, the spending profiles of those employees over the construction phase is estimated to amount to $8,546 per annum per worker ($712 per month per worker). It is therefore estimated that the workers (annualised equivalent of 142 workers) during the construction period **will generate between $0.607 million and $1.214 million** in retail expenditure.

This increase in retail spend presents the opportunity to support local retail trade jobs which have decreased by 3.4% per annum between 2011 and 2016 within the Bland LGA.

Per Capita Retail Spend (by category)

Bland LGA ($2018) Chart 10.2



Source: ABS; Urbis

10.2.3. Short-Term Accommodation

An assessment of short-term accommodation facilities within surrounding regions of the subject site indicate that there is insufficient supply (only 151 rooms) within West Wyalong alone to meet the demand generated from surrounding land uses.

Discussions with accommodation providers indicate that long term contractual arrangements exist between companies requiring temporary accommodation for workers within West Wyalong. Most operators while open to accommodation of short-term construction workers, will hold a proportion of their stock available for tourist visitors.

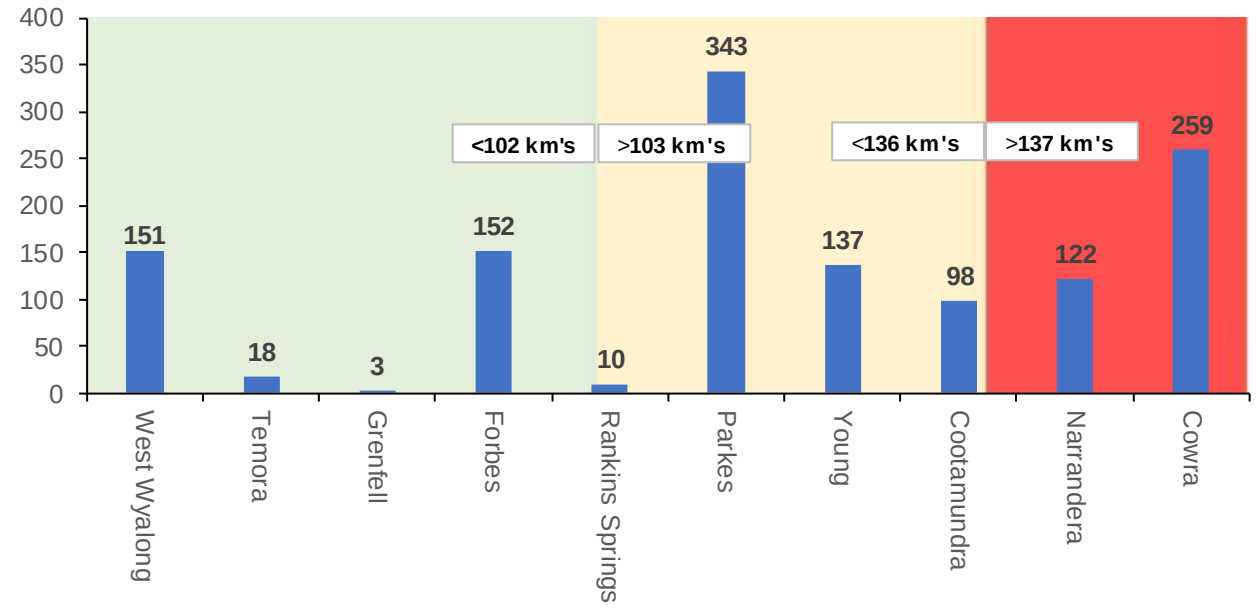
It will be necessary to seek short-term accommodation for the proposed development construction workforce beyond West Wyalong. Within an approximate 1-hour 45-minute drive time of the subject site there are approximately 1,293 rooms, of which 151 (12%) are located within West Wyalong.

Chart 10.3 overleaf illustrates short-term accommodation supply by suburb within the surrounding region. An assessment of the following townships has been carried out:

1. West Wyalong (20 km's from the subject site – 19-minute drive time).
2. Temora (82 km's from the subject site – 58-minute drive time)
3. Grenfell (101 km's from the subject site – 68-minute drive time).
4. Forbes (102 km's from the subject site – 68-minute drive time).
5. Rankins Springs (112 km's from the subject site – 78-minute drive time).
6. Parkes (135 km's from the subject site – 92-minute drive time).
7. Young (136 km's from the subject site – 93-minute drive time).
8. Cootamundra (136 km's from the subject site – 96-minute drive time).
9. Narrandera (151 km's from the subject site – 110-minute drive time).
10. Cowra (156 km's form the subject site – 110-minute drive time).

Short-Term Accommodation Supply - Rooms

By Suburb Chart 10.3



Source: Urbis

We are aware of a second solar farm project (Wyalong Solar Farm) proposal, which is located approximately 15 km's south west of the subject site. The construction of this solar farm is anticipated to be carried out over a 9-month period and require a peak of 150 workers. Further, the Cowal Gold mine which currently has a mine workforce of 345 employees and 175 contractors is seeking to increase capacity, which has seen an increase of mine associated workers seeking accommodation in the area.

Due to the timing and quantum of temporary workers in West Wyalong, there will be an increasing requirement for accommodation to be organised in the larger townships of Forbes, Cowra, Young and Parkes, with workers commuting to the proposed development each day. Alternatively, private rental market accommodation options should also be considered (see sections 10.2.4).

As illustrated by Chart 10.3, there is a trade-off between distance from the subject site, and availability of short-term accommodation which will need to be considered. Only 25% of short-term accommodation rooms are within ~100 km's drive of the subject site, suggesting that some workers will be required to travel further distances to the subject site.

During peak construction periods across the Cowal Gold mine, the proposed Wyalong Solar Farm, and the subject site, there will be a maximum requirement of potentially 925 beds. This would represent 72% of total short-term accommodation room supply (assuming one bed per room), further indicating that the private rental market should be an option that is considered.

Over the course of its construction the development of the solar farm will increase demand for short-term accommodation facilities within the Central West region, particularly around the Bland LGA. The increased presence of workers will inject retail spend into the local economy (see section 10.2.2), whilst also providing benefits for local short-term accommodation operators.

10.2.4. Private Rental Market

As of October 2018, there were 129 vacant properties advertised for rent, equating to a total supply of 335 rooms in surrounding townships. According to SQM Research vacancy rates for the region are very low, ranging from 0.6% in West Wyalong and Parkes, to 2.4% in Cootamundra. These low vacancy rates demonstrate strong demand for rental accommodation within the region.

Due to the competition for short term accommodation within the region (both from tourists and other developments requiring short-term accommodation), there is a possibility that the private rental market will be required to meet accommodation needs. This would arise due to the timing of works at the Cowal Gold mine, during the construction phase of the proposed Wyalong Solar Farm, or during peak tourism periods.

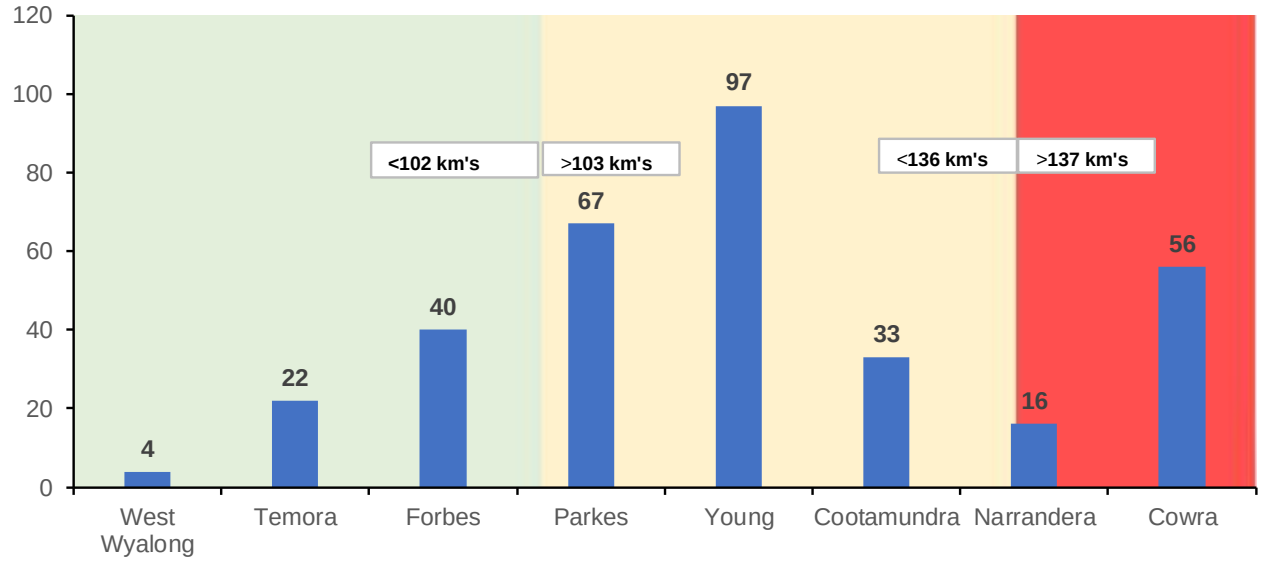
As illustrated by Chart 10.4 (below), those suburbs closest to the subject site (within West Wyalong) have the lowest provision of available beds, which suggests that the private rental market is already being tapped by temporary workers within the region. We have assessed surrounding townships and a trade-off exists between available beds and travel times.

This analysis of the short-term accommodation and private rental market indicate that there is insufficient supply to meet the cumulative accommodation needs of the Cowal Gold mine, the proposed Wyalong Solar Farm, and the development on the subject site within the West Wyalong region.

Therefore, planning for the solar farm workforce will need to consider the trade-off between available accommodation and travel times. Hiring a greater proportion of local workers will place less strain on the surrounding accommodation market, and reduce the planning required for accommodation over the construction phase.

Rooms Available for Rent

October 2018 Chart 10.4



Source: Realestate.com.au; Urbis

Further, as illustrated by Chart 10.5, in 2016 there were roughly 3,100 unoccupied private dwellings within surrounding regions.

Occupancy is based on ABS Census collector's determination of whether or not a property is occupied on census night, vacant houses, holiday homes, huts and cabins (other than seasonal workers' quarters) are counted as unoccupied dwellings.

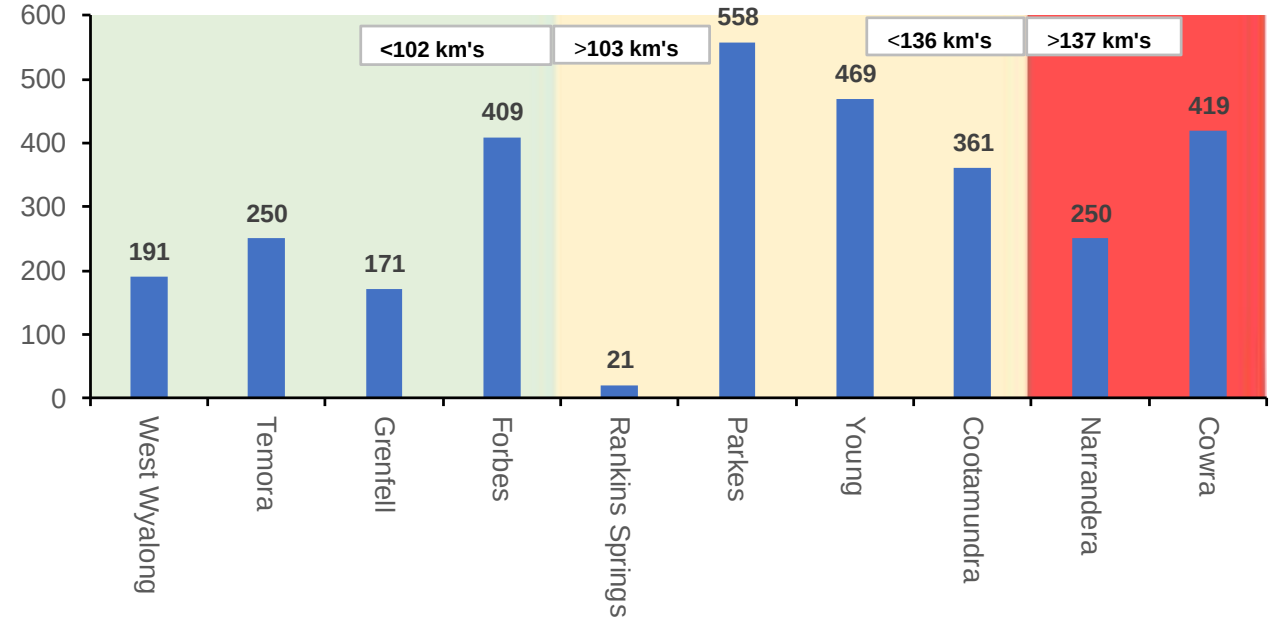
While not all of these dwellings will be available to lease, these unoccupied dwellings represent an opportunity for the significant demand for rental stock to draw available unoccupied private dwellings into the rental market.

The stock of unoccupied private dwellings ranges from 21 in Rankins Springs, to 558 in Parkes. Drawing these un-utilised properties into the market will require real estate agents to contact property owners to determine if they are unoccupied and available for rent.

As these properties are not necessarily available for lease, it would not be expected that they would all be available.

Unoccupied Private Dwellings

2016 Chart 10.5



Source: ABS Census; Urbis

11. CONCLUSION

This report addresses the SEARs requirements to assess the socio-economic impacts of the proposed development including an assessment of the likely impacts on the local community and a consideration of the construction workforce.

This assessment has found that overall the proposal is very likely to have a long term positive impact for NSW by increasing the supply of renewable energy in NSW and reducing emissions. It will also deliver local employment and economic benefits to Bland Shire LGA.

There will a period during construction of increased pressure on local services, infrastructure and housing, which will be exacerbated by the cumulative impact of other major development in the region.

11.1. RECOMMENDATIONS

To reduce the negative impact of the proposal during construction the following recommendations are suggested:

- Implementation of a local procurement for the construction workforce to reduce the demand on accommodation and other local infrastructure and services.
- Consultation with surrounding townships that may be required to assist in the supply of workforce accommodation.
- Further stakeholder and community consultation to understand capacity of local services and infrastructure.
- Consideration of construction staging and coordination with other proposed developments in the Bland Shire LGA.

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In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A COMMUNITY PROFILE

Data item	Wyalong	West Wyalong	Bland Shire LGA	Central West Statistical Area 4
Population	654	3,141	5,955	206,155
Median age	43	42	43	41
Average people per household	2.4	2.3	2.4	2.4
Age distribution (%)				
Aged 0-4	5.9%	6.0%	5.9%	6.4%
Aged 5-9	8.2%	7.4%	7.7%	6.9%
Aged 10-14	6.6%	7.0%	7.0%	6.5%
Aged 15-19	3.5%	5.6%	5.6%	6.4%
Aged 20-24	6.2%	4.2%	4.5%	5.6%
Aged 25-29	4.3%	5.4%	4.6%	5.6%
Aged 30-34	6.8%	6.0%	5.4%	5.6%
Aged 35-39	5.4%	5.5%	5.3%	5.4%
Aged 40-44	6.8%	5.4%	6.1%	6.0%
Aged 45-49	6.2%	4.6%	5.5%	6.4%
Aged 50-54	7.9%	5.8%	6.5%	6.7%
Aged 55-59	9.1%	7.3%	7.9%	6.8%
Aged 60-64	7.4%	6.0%	6.6%	6.2%
Aged 65-69	6.6%	5.9%	6.1%	6.1%
Aged 70-74	2.8%	4.7%	4.4%	4.8%
Aged 75-79	2.8%	4.6%	4.2%	3.5%
Aged 80-84	1.2%	4.0%	3.3%	2.5%
Aged 85+	2.5%	4.8%	3.5%	2.5%
Country of birth and Indigenous identification (%)				
Australia	86.5%	81.1%	82.2%	83.1%
Aboriginal or Torres Strait Islander	6.5%	4.7%	4.4%	6.4%

Data item	Wyalong	West Wyalong	Bland Shire LGA	Central West Statistical Area 4
Language spoken at home (%)				
English only	89.7%	84.6%	86.2%	87.6%
Language other than English #1	Cantonese 0.9%	Cantonese 0.4%	Cantonese 0.4%	Mandarin 0.2%
Language other than English #2	Tagalog 0.5%	Tok Pisin 0.4%	Tagalog 0.3%	Italian 0.2%
Family composition (%)				
Couple family without children	47.3%	47.4%	46.0%	41.3%
Couple family with children	39.0%	36.0%	37.4%	40.3%
One parent family	13.7%	15.5%	15.2%	17.1%
Other family	-	1.1%	1.3%	1.3%
Household composition (%)				
Family households	72.8%	65.2%	68.3%	68.5%
Lone person households	25.6%	33.5%	30.5%	28.8%
Group households	1.6%	1.3%	1.1%	2.7%
Dwelling structure (%)				
Separate house	100%	91.8%	94.8%	88.8%
Semi-detached	-	0.8%	0.4%	5.8%
Flat or apartment	-	4.4%	2.6%	3.3%
Other dwelling	-	0.5%	0.6%	1.1%
Tenure				
Owned outright	37.0%	41.8%	46.5%	37.0%
Owned with a mortgage	31.0%	28.7%	25.9%	31.0%
Rented	27.9%	24.5%	22.5%	27.9%
Employment (%)				

Data item	Wyalong	West Wyalong	Bland Shire LGA	Central West Statistical Area 4
Worked full time	57.2%	59.2%	61.0%	58.1%
Worked part time	32.6%	31.3%	29.0%	30.0%
Away from work	6.5%	6.1%	6.4%	5.7%
Unemployed	3.7%	3.4%	3.6%	6.2%
Occupation (%)				
Professionals	5.9%	13.8%	10.5%	16.2%
Technicians and Trades Workers	20.5%	15.6%	13.8%	14.8%
Clerical and Administrative Workers	9.9%	11.2%	12.0%	11.6%
Managers	12.9%	15.4%	27.5%	15.2%
Sales Workers	8.3%	8.8%	6.2%	8.9%
Labourers	14.9%	8.7%	12.0%	11.7%
Community and Personal Service Workers	10.6%	8.7%	7.5%	11.1%
Machinery Operators and Drivers	14.9%	13.0%	10.8%	8.7%
Industry of employment (%)				
Gold Ore Mining	10.9%	10.9%	7.4%	NA
Local Government Administration	5.9%	6.9%	3.9%	2.4%
Income ($)				
Median personal weekly income	$587	$602	$580	$594
Median family weekly income	$1,331	$1,453	$1,360	$1,473
Median household weekly income	$1,149	$1,148	$1,100	$1,166
Level of highest educational attainment (%)				
Year 9 or below	14.3%	13.0%	13.0%	11.5%

Data item	Wyalong	West Wyalong	Bland Shire LGA	Central West Statistical Area 4
Year 10	18.4%	18.8%	20.1%	16.4%
Year 11	3.8%	4.3%	4.5%	3.8%
Year 12	11.5%	9.7%	10.1%	11.1%
Certificate level I-IV	20.7%	18.0%	17.9%	19.6%
Advanced Diploma and Diploma level	7.1%	5.0%	5.3%	7.3%
Bachelor Degree level and above	5.7%	9.8%	8.5%	12.8%
Motor vehicles (%)				
None	3.9%	5.2%	4.6%	6.2%
1 motor vehicle	28.3%	38.1%	31.5%	32.5%
2 motor vehicle	41.5%	34.3%	43.9%	36.2%
3 or more vehicles	23.6%	17.1%	23.8%	20.5%
Travel to work (%)				
Car, as driver	59.9%	59.9%	53.1%	67.6%
Worked at home	9.2%	7.0%	15.3%	7.0%
Car, as passenger	5.7%	8.0%	6.1%	5.3%
Walked only	4.8%	5.4%	6.0%	4.4%
Other	Truck 3.2%	Bus 3.9%	Bus 2.4%	Truck 1.4%

Source: Australian Bureau of Statistics (ABS) Census data 2016

Socio Economic Indexes for Areas (SEIFA)

The Socio-Economic Indexes for Areas (SEIFA) has been developed by the Australian Bureau of Statistics (ABS) to provide an overview of social and economic wellbeing and welfare of communities across a range of spatial scales. Four indices have been developed:

- Index of Relative Socio-Economic Disadvantage: focuses primarily on disadvantage, and is derived from Census variables like low income, low educational attainment, unemployment, and dwellings without motor vehicles.
- Index of Relative Socio-Economic Advantage and Disadvantage: is a continuum of advantage (high values) to disadvantage (low values), and is derived from Census variables related to both advantage and disadvantage.
- Index of Economic Resources: focuses on financial aspects of advantage and disadvantage, using Census variables relating to residents' incomes, housing expenditure and assets.

- Index of Education and Occupation: includes census variables relating to the educational attainment, employment and vocational skills.

Scores: A lower score indicates that an area is relatively disadvantaged compared to an area with a higher score. The area with the lowest score is given a decile of 1, the area with the second lowest score is given a decile of 2 and so on, up to the area with the highest score is given the highest decile.

	Disadvantage		**Advantage and Disadvantage**		**Economic resources**		**Education and occupation**	
	Score	Decile	Score	Decile	Score	Decile	Score	Decile
Wyalong suburb	966	3	936	3	1009	4	908	2
West Wyalong suburb	975	4	948	3	985	3	933	3
Bland LGA	973	5	954	5	1003	7	951	5

Source: SEIFA ABS 2016

APPENDIX B POPULATION PROJECTIONS

Bland Shire LGA	Year						
	2016	2021	2026	2031	2036	% of 2036 population	%change 2016 - 2036
Aged 0 to 4	450	400	350	350	300	6.2%	-3.1%
Aged 5 to 9	500	450	400	400	350	7.2%	-3.1%
Aged 10 to 14	400	450	400	400	350	7.2%	-1.0%
Aged 15 to 19	300	300	300	300	250	5.2%	-1.0%
Aged 20 to 24	250	200	200	150	150	3.1%	-2.1%
Aged 25 to 29	250	250	200	200	200	4.1%	-1.0%
Aged 30 to 34	350	300	300	250	250	5.2%	-2.1%
Aged 35 to 39	350	350	350	300	300	6.2%	-1.0%
Aged 40 to 44	350	300	350	300	300	6.2%	-1.0%
Aged 45 to 49	300	350	300	300	300	6.2%	0.0%
Aged 50 to 54	400	300	300	300	300	6.2%	-2.1%
Aged 55 to 59	450	350	300	300	300	6.2%	-3.1%
Aged 60 to 64	350	400	350	300	300	6.2%	-1.0%
Aged 65 to 69	350	350	350	300	250	5.2%	-2.1%
Aged 70 to 74	250	300	300	300	250	5.2%	0.0%
Aged 75 to 79	250	200	250	250	250	5.2%	0.0%
Aged 80 to 84	200	200	150	200	200	4.1%	0.0%
Aged 85 +	200	200	200	200	250	5.2%	1.0%
Total persons	5,800	5,600	5,350	5,100	4,850	-	-
Change	-	-200	-250	-250	-250	-	-
Growth rate (%)	-	-0.7%	-0.9%	-1.0%	-1.1%	-	-

Source: 2016 ABS Census data, Department of Planning and Environment

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