Environmental & Social Consultants

ACCOMMODATION AND EMPLOYMENT STRATEGY

Goulburn River Solar Farm

FINAL

December 2023

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Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Lightsource bp

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This report was prepared using Umwelt's ISO 9001 certified Quality Management System.

Acknowledgement of Country

Umwelt would like to acknowledge the traditional custodians of the country on which we work and pay respect to their cultural heritage, beliefs, and continuing relationship with the land. We pay our respect to the Elders – past, present, and future.

Document Status

Rev No.	Reviewer		Approved for Issue	
	Name	Date	Name	Date
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Executive Summary

The purpose of this Accommodation and Employment Strategy (AES) is to provide an overview of the baseline economic, social, and housing context surrounding the Goulburn River Solar Farm project (the Project) located near Merriwa in NSW. This AES outlines Lightsource Development Services Australia Pty Ltd's (Lightsource bp) proposed approach to managing, enhancing and mitigating key employment and accommodation impacts of the Project.

The strategy has been informed by interviews with key stakeholders and a desktop analysis of accommodation and employment data for the Upper Hunter, Muswellbrook, and Mid-Western Regional Local Governments Areas (LGAs). The key geographical areas considered in the AES are Mudgee, Wollar, Gulgong, Kandos, Merriwa, Scone, Muswellbrook and Denman Suburbs and Localities (SALs) (the social locality).

Project Overview

The Project is a large-scale solar farm, located approximately 28 kilometres (km) southwest of the township of Merriwa, and approximately 200 km to the northwest of the closest capital city of Sydney. The Project sits within the Upper Hunter Shire Local Government Area (LGA), in the state of New South Wales (NSW). The proposed Project Area is on partially cleared freehold land with two private owners and is surrounded by the Goulburn River National Park. The Project will involve the construction, operation, maintenance and decommissioning of approximately 550-megawatt peak (MWp) of solar photovoltaic (PV) generation as well as a battery energy storage system.

Construction is proposed to commence by mid-2024, with a construction phase of approximately 24 months. A peak on-site workforce of 350 direct construction jobs is anticipated, with an average of around 250 direct jobs throughout the construction period. Lightsource bp anticipates an ongoing workforce of up to 10 operational staff, with an operational period of 40 years.

Project Accommodation and Employment Context

This AES has identified considerable housing, accommodation, employment and procurement constraints in the social locality, linked to the Project’s remote location and the presence of multiple concurrent and proximal projects. The AES has also identified existing regional strengths, including regional expertise in mining and construction sectors and access to land, with the capacity to host worker villages for in-coming workers.

Availability of short-term and rental accommodation

There is a shortage of short-term accommodation (hotels, motels, and Airbnb properties) in the Upper Hunter, Mid-Western Regional and Muswellbrook LGAs. Considerate use of this existing short-term accommodation will be necessary to minimise disruption to the local tourism and short-term accommodation market. Analysis has concluded that **around 14 workers have the potential to be housed in existing proximal short-term accommodation** while **approximately 40 additional new short-term accommodation rooms may be established** by existing accommodation providers in the social locality in response to anticipated future demand.

The region surrounding the Project is characterised by low rental vacancy rates and low rental stock. Analysis has concluded that approximately three homes (one in Scone and two in Muswellbrook) may be available to the Project without placing unsustainable pressure on the existing rental market.

Availability of a custom-built temporary workforce accommodation facility (TWA Facility)

Given limited access to existing short-term and rental accommodation in the social locality, Lightsource bp has entered into a memorandum of understanding with a local developer currently planning to build an accommodation facility of up to 500 rooms within the town of Merriwa. Lightsource bp has an option in place to rent up to 300 rooms during the construction period of the Project, with potential to increase the number of rooms if required. The commencement of this facility is being coordinated between the two parties to align with the ramp up of workforce numbers onsite at the Project.

Availability of local workers and supply chain opportunities

The social locality surrounding the Project is characterised by employment and business strengths in agriculture, forestry and fishing, and mining and manufacturing sectors with some capacity to adapt to support the Project. However, a low unemployment rate across the social locality will make it difficult to achieve a large workforce sourced wholly from within the locality. This challenge is exacerbated by the close proximity of the project to multiple other renewable energy projects (some of which have overlapping construction timelines with the Project) and multiple coal mines in the region, which all compete for the local workforce.

Interviews and a desktop analysis indicate that sourcing approximately 10% (approximately 35 workers) of the Project peak construction workforce from the local community appears feasible, however for a more detailed analysis of local employment assumptions refer to **Section 5.2.1**. This AES uses this conservative estimate to ensure that accommodation sufficiency is assessed based on a 'worst case scenario.' The AES also includes recommendations to increase local employment and procurement wherever possible. This estimate is different to the original assumptions supplied in the Economic Impact Assessment (Ethos Urban, 2023) as that was developed earlier in the assessment phase.

Accommodation and Employment Recommendations

This AES has identified several opportunities to address the need for accommodation for construction workers and maximise opportunities for local employment and procurement associated with the Project.

Key Accommodation Recommendations

- Accommodate the majority of the incoming non-resident workforce in a custom-built workforce accommodation facility in Merriwa.
- Prioritise sustainable use of local accommodation a maximum of 75 minutes-drive or 100 km from the development (i.e., Merriwa, Cassilis, Sandy Hollow, Denman, and possibly Scone and Muswellbrook) while maintaining pooled transport options to site.
- Reduce or avoid upward pressure on housing prices, rental costs and demand that may result from development activities by limiting the amount of rental and short-term accommodation consumed by non-resident workforces.

Key Employment Recommendations

- Transparently communicate employment and procurement opportunities to the local community and provide updates on whether objectives are achieved.
- Implement strategies to target a minimum of approximately 35 people (10% of peak workforce) sourced locally, including working alongside organisations such as Programmed or Blackrock Industries to offer traineeships and apprenticeships for local people.
- Pro-actively generate opportunities for employment of under-represented communities, including First Nations people, women, and unemployed people.

Proactive management and monitoring of outcomes will be achieved through post-approval management strategies and mechanisms that operationalise this AES.

Abbreviations

Abbreviation	Description
ABS	Australian Bureau of Statistics
AES	Accommodation and Employment Strategy
APM	Advanced Personnel Management
BESS	Battery Energy Storage System
CWO REZ	Central-West Orana Renewable Energy Zone
DCJ	Department of Communities and Justice
DIDO	Drive-in Drive-out
DPE	Department of Planning and Environment
FIFO	Fly-in Fly-out
FTE	Full Time Equivalent
IER	Index of Economic Resources
IRSAD	Index of Relative Socio-Economic Advantage and Disadvantage
IRSD	Index of Relative Socio-Economic Disadvantage
km	kilometre
kV	kilovolt
LGA	Local Government Area
MOU	Memorandum of Understanding
MW	megawatt
MWh	megawatt hour
NSW	New South Wales
REZ	Renewable Energy Zone
SAL	Suburb and Locality
SALM	Small Area Labour Markets
SEIFA	Socio-Economic Indexes for Areas
The Project	Goulburn River Solar Farm project
TWA	Temporary Workers’ Accommodation

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1.0 Introduction

1.1 Purpose of the Accommodation and Employment Framework

Lightsource Development Services Australia Pty Ltd (Lightsource bp; LSbp) is seeking to develop the Goulburn River Solar Farm (the Project) 28 kilometres (km) southwest of the township of Merriwa, in the Upper Hunter Shire. The Project is being assessed under the NSW *Environmental Planning and Assessment Act 1979 (*EP & A Act). Further information regarding the Project is provided in **Section 1.2**.

Umwelt prepared the Environmental Impact Statement (EIS) including a Social Impact Assessment (SIA) for the Project. The Project was placed on public exhibition in June and July of 2023. During the exhibition period, 69 submissions were received. This Accommodation and Employment Strategy (AES) is a direct response to the findings and recommendations identified in the SIA and the questions raised through formal submissions while on exhibition about the limited accommodation in the region and consideration of feasible local employment levels.

The AES has been developed to meet the following objectives:

- Ensure there is sufficient accommodation for the required workforce, taking into consideration the cumulative impacts associated with other developments in the region within the same timeframe.
- Reduce the strain on the local accommodation and housing sector during the influx of workforces.
- Maximise the capacity for Lightsource bp to generate local benefits through local procurement and employment outcomes.
- If relevant, support the criteria and goals of LSbp's Industry and Aboriginal Participation Plan (IAPP) developed for the Project[1].
- Identify options for the effective and appropriate accommodation of workforce associated with the Project.
- Respond to the community, council and agency concerns in relation to temporary workforce accommodation and local employment opportunities.
- Detail the consultation and analysis undertaken to-date to support consideration of accommodation and employment and procurement opportunities associated with the Project.

[1] The IAPP is based on a framework introduced by the NSW Government to support and create better long-term outcomes for First Nations people, businesses, and communities. It includes targets to develop direct and indirect opportunities in the Project's supply chain, provide funding for local initiatives and support educational and training opportunities and forms part of LSbp's bid for a Long-Term Energy Service Agreement.

1.2 Overview of the Project

Lightsource bp propose the development of the Goulburn River Solar Farm. The Project sits within the Upper Hunter Shire Local Government Area (LGA), in the state of New South Wales (NSW). Other regional population centres nearby include Muswellbrook (75 km east of the Project), Scone (76 km northeast of the Project), and Mudgee (60 km southwest of the Project).

The proposed Project Area is on partially cleared freehold land with two private owners and is surrounded by the Goulburn River National Park. The Project will involve the construction, operation, maintenance and decommissioning of the solar farm and battery energy storage system (BESS), with construction proposed over 24 months and operations for 40 years.

The Project, as exhibited in the EIS, will involve the construction, operation, maintenance, and decommissioning of approximately 550 megawatt peak (MWp) of solar photovoltaic (PV) generation as well as a BESS with 280 MWp / 570 megawatt hour (MWh) capacity. The Project also comprised supporting infrastructure including a substation and connection to an existing 500 kilovolt (kV) transmission line and road upgrades to parts of Wollara Road and Ringwood Road, including two culverts at Bow River and Killoe Creek.

1.2.1 Proposed Amendments

Following public exhibition of the EIS, LSbp have continued to consult with landholders and stakeholders. Ongoing consultation and consideration of the submissions received has resulted in a number of proposed changes to the Project.

A summary of the key proposed amendments to the EIS Project are provided in **Table 1.1** below. Amendment No. 6 is addressed by this AES.

Table 1.1 Summary of Key Proposed Project Amendments

No.	Description
1	Transport route amendments and upgrade of the intersection of the Golden Highway and Ringwood Road.
2	Upgrades to additional parts of Wollara Road and Ringwood Road.
3	Increased BESS capacity and option of a decentralised BESS.
4	Minor modifications to the Development Footprint and internal layout including: • removal of travelling stock route (TSR) 4481 from within the Project Area • relocation and/or removal of solar arrays within the Development Footprint to avoid Regent Honeyeater Habitat, scattered trees and Box Gum Woodland • increased width of selected internal access roads to accommodate subterranean power cables.
5	Construction of an additional transmission tower adjacent the BESS/substation.
6	Additional assessment and revised approach for workforce accommodation.

1.3 Workforce and Accommodation Overview

Subject to development approval, construction would commence by mid-2024, with a construction phase of approximately 24 months. Lightsource bp anticipates a peak on-site workforce of 350 fulltime equivalent (FTE) direct construction jobs, with an average of approximately 250 FTE direct jobs throughout the construction period (see **Figure 1.1**). Lightsource bp anticipates an ongoing workforce of up to 10 staff during operations.

Apart from direct employment opportunities associated with the development itself, the employment benefits are expected to extend through local supply chains to include vehicle and equipment servicing, fencing contractors, uniform suppliers, cafés, pubs, catering and cleaning companies, tradespersons, tool and equipment suppliers and other supporting businesses.

While Lightsource bp aims to drive local employment opportunities where possible for local job seekers and contractors, it is difficult to anticipate how many jobs will be sourced locally. Analysis indicates approximately 10% of the peak workforce (35 people) may be local to the area. (See **Section 5.2.2**).

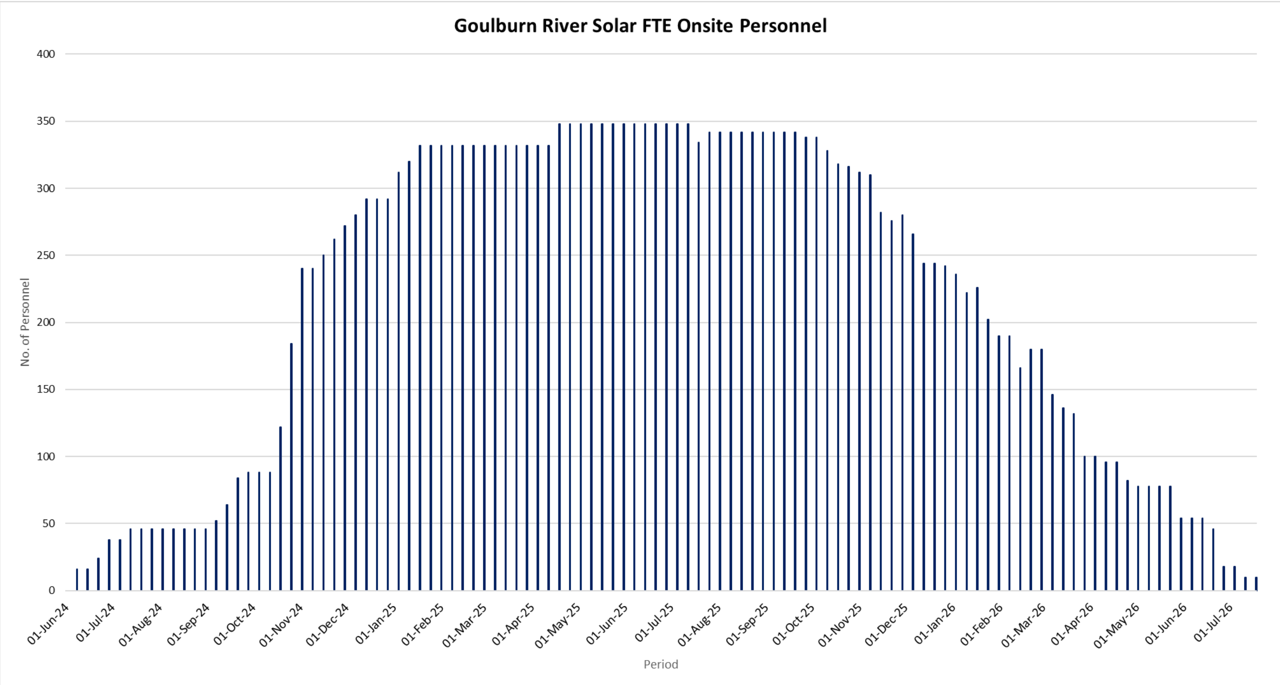


Figure 1.1 Goulburn River Solar Farm FTE Onsite Personnel

Source: (Lightsource bp, 2023).

1.4 Study Limitations

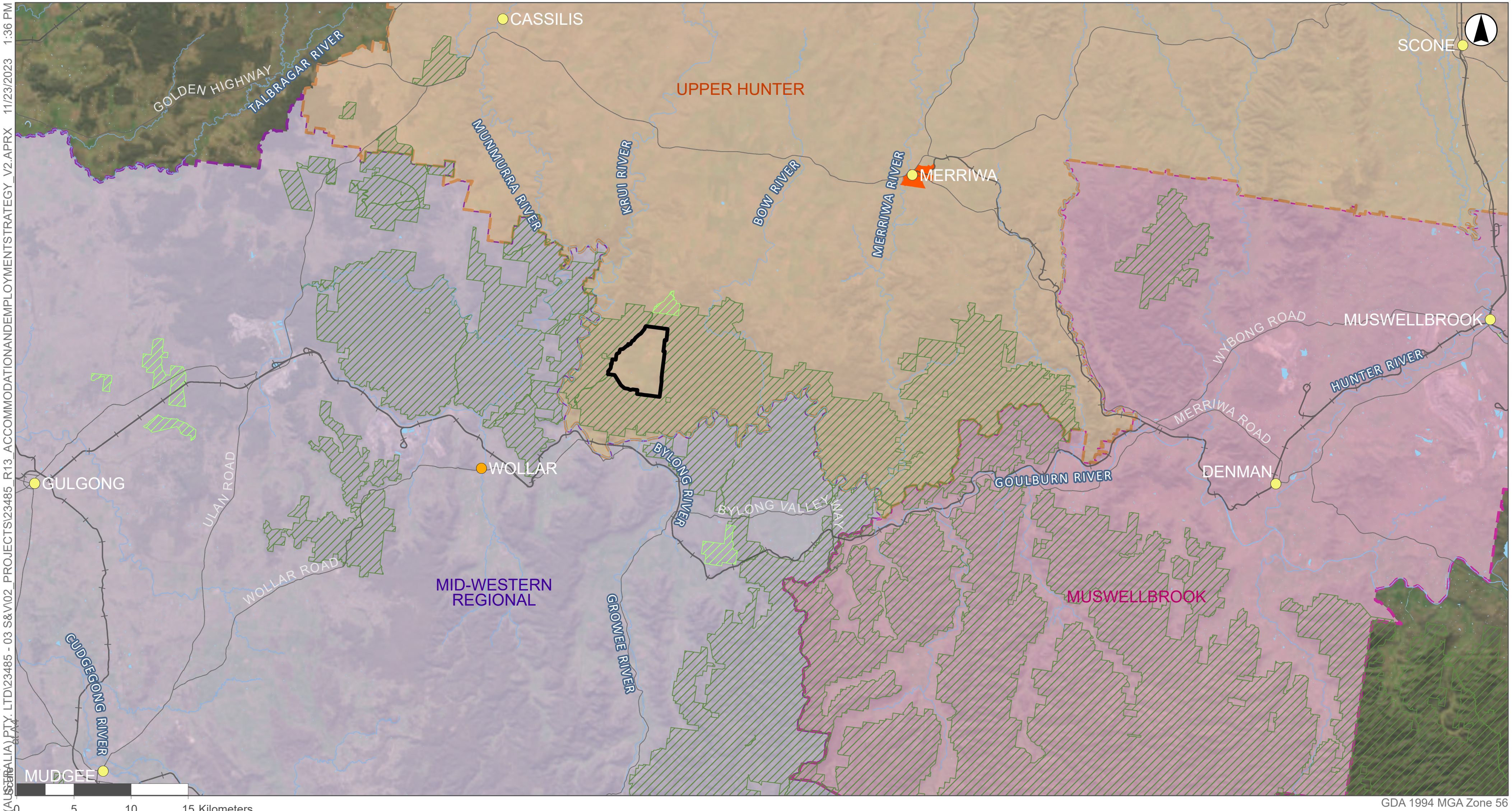
This study has been developed based on preliminary workforce forecasts provided by Lightsource bp and a review of existing publicly available data on short-term accommodation availability. It reflects estimates based on these data inputs, complemented by feedback from Project stakeholders including local councils, community groups and local businesses. The exact numbers of workers may differ based on changing construction timelines and/or changed access to short-term accommodation and rental accommodation. Construction timelines and workforce estimates will be finalised once civil and electrical contractors have been appointed and a detailed design process undertaken.

2.0 Regional Profile

The following section provides an overview of the socio-local context relevant to the development.

2.1 Defining the Social Locality

Statistical areas defined by the Australian Bureau of Statistics (ABS), as well as the land tenure composition of properties in or nearby the Project Area, have been used to determine the social locality (or 'area of social influence') as represented in **Figure 2.1**. The primary communities of interest that comprise the social locality for the purpose of this assessment are outlined in **Table 2.1** and **Figure 2.2**.



Legend
- Proximate Localities
- Townships
- Road
- Railway
- Watercourse
- Project Area
- Mid-Western Regional Local Government Area
- Muswellbrook Local Government Area
- Upper Hunter Local Government Area
- Merriwa UCL Statistical Area
- NSW State Forests
- NSW National Parks
- Waterbodies

FIGURE 2.4

Social Locality

Image Source: ESRI Basemap (2023) **Data source:** NSW LPI (2023), NSW DSFI (2023); NPWS Estate (2023); Lightsource BP (2023)

Table 2.1 Key Settlements

Settlement Type	Township (Population)	Reason for Inclusion
Host Local Government Area	Upper Hunter Shire LGA (14,229)	As a host LGA for the Project, Upper Hunter Shire LGA is likely to experience the highest accommodation and employment impacts and opportunities.
Neighbouring Government Areas	Mid-Western Regional LGA (25,713) Muswellbrook LGA (16,357)	As neighbouring LGAs for the Project, Mid-Western Regional and Muswellbrook LGAs are likely to experience employment impacts and opportunities. Muswellbrook LGA may experience some accommodation impacts and opportunities. Note: It is not proposed that any workers are accommodated in the Mid-Western LGA. Mid-Western Regional and Muswellbrook LGAs have a larger population and labour force, with strong regional expertise in mining industries and the potential to support renewable energy projects.
Geographically adjacent (within 30 min drive)	Merriwa SAL (1,825)) Wollar SAL (50)	These settlements are included due to their physical proximity to the Project and possibility of providing services or accommodation to support the Project. Note: following consultation with Mid-Western Council, it is not proposed for any workers to be accommodated in the Mid-Western LGA (see **Section 4.2**).
Proximal (within 60-minute drive) and primary order settlements (population over 10,000 people)	Mudgee SAL (11,457)	
Proximal (within 60-minute drive) and secondary order settlements (population between 1,000 and 10,000 people)	Denman SAL (1,821) Gulgong SAL (2,680) Kandos SAL (1,263) Scone SAL (5,824)	
Neighbouring (between 60 to 120-minute drive) and primary order settlements (population over 10,000 people)	Muswellbrook SAL (12,272)	These settlements are included due to the size of their populations, which means these localities are likely to serve as higher-order townships with a greater density of businesses, services, and infrastructure. They may be potential residential locations for project workforces.

Source: Umwelt, 2023.

Figure 2.2 Regional Geographical Scales

Source: (Umwelt, 2023).

2.2 Regional Demographic Context

Table 2.3 provides an overview of the key demographic characteristics of the LGAs under consideration in this study. **Table 2.4** provides an overview of the key townships. The tables in the following section are colour coded according to **Table 2.2** to demonstrate difference between the localities and the NSW average.

Table 2.2 Table Colour Scheme Meaning

Colour	Meaning
	Figure lower than the NSW average or median*
	Figure higher than the NSW average or median*

**Not applicable for population, and IEO, IRSD, IRSAD, or IER scores.*

Table 2.3 Regional Overview

	Upper Hunter Shire LGA	Mid-Western Regional LGA	Muswellbrook LGA	NSW
Population	14,229	25,713	16,357	8,072,163
Key Townships	Merriwa, Scone	Mudgee, Wollar, Gulgong, Kandos	Denman, Muswellbrook	-
Median Age (Years)	42	42	37	39
Percentage of population older than 65 years	21.2%	27.3%	15.6%	17.7%
Percentage of population younger than 15 years	18.6%	19.5%	27%	18.2%
Population growth 2011 to 2021	+475 +3.45%	+3395 +15.21%	+77 +0.47%	+ 1,154,505 +16.68%
Projected population growth 2021 to 2041	-475 -3.33%	+1842 +7.16%	+982 +5.98%	+ 861,477 10.67% increase
Proportion of population with a Bachelor degree or higher	6%	13.3%	4%	27.8%
Proportion of population with vocational qualifications	23.1%	24.5%	23%	15.1%
Index of Education and Occupation (IEO)[2]	3rd decile	4th decile	1st decile	-
Index of Relative Socio-Economic Disadvantage (IRSD)[3]	5th decile	5th decile	3rd decile	-
Index of Economic Resources (IER)[4]	7th decile	7th decile	4th decile	-

[2] The Index of Education and Occupation (IEO) is designed to reflect the educational and occupational level of communities. The education variables in this index show either the level of qualification achieved or whether further education is being undertaken. A low score indicates relatively lower education and occupation status of people in the area in general. For example, an area could have a low score if there are: many people without qualifications, or many people in low skilled occupations or many people unemployed, AND few people with a high level of qualifications or in highly skilled occupations.

[3] The Index of Relative Socio-economic Disadvantage (IRSD is a general socio-economic index that summarises a range of information about the economic and social conditions of people and households within an area. Unlike the other indexes, this index includes only measures of relative disadvantage. A low score indicates relatively greater disadvantage in general. For example, an area could have a low score if there are: many households with low income, many households with no qualifications, many people in low skill occupations.

[4] The Index of Economic Resources (IER) focuses on the financial aspects of relative socio-economic advantage and disadvantage, by summarising variables related to income and wealth. This index excludes education and occupation variables because they are not direct measures of economic resources. A low score indicates a relative lack of access to economic resources in general. For example, an area may have a low score if there are: many households with low income, or many households paying low rent, AND; few households with high income, or few owned homes.

Implications:

- The **Upper Hunter Shire and Mid-Western Regional LGAs have a population with a higher median age and larger proportion of people over the age of 65**. This indicates that the population is aging. This has implications for labour force participation and access to employees and underlines the need for specific health and social service infrastructure provision in the region. Comparatively, **Muswellbrook LGA has a median age below the NSW average and a lower proportion of people aged below 65 years**.
- IRSD scores indicate that the **LGAs of Upper Hunter Shire and Mid-Western Regional have average levels of low-income, low-qualification and low-skilled households**. Muswellbrook LGA is an exception, exhibiting substantially higher rates of disadvantage than other LGAs in the region. This has implications for access to skilled labour forces and presents opportunities for targeted training and education programs.
- IER scores indicate that **Mid-Western Regional and Upper Hunter Shire LGAs have relatively high levels of economic resources**, with higher proportions of households earning high incomes and owning their own homes. Comparatively, **Muswellbrook LGA has substantially higher proportions of households with few economic resources** and higher levels of vulnerability to economic shocks.
- **The population of all LGAs have grown at rates below the NSW average between 2011 and 2021**, with Muswellbrook LGA experiencing the lowest growth. This is followed by Upper Hunter Shire LGA. Compared to the other LGAs, Mid-Western Regional experienced the highest rate of growth.
- **Between 2021 and 2041, the populations of Mid-Western Regional and Muswellbrook LGAs are predicted to increase**. However, this growth rate is not expected to be substantial and will be below NSW's growth rate. Opposingly, **the population of Upper Hunter Shire is expected to decline**. A slow population growth rate, or a decline, can increase business willingness to re-locate or invest in other regions.
- **All LGAs have lower levels of university degree qualifications compared to the NSW average, but rather have a higher proportion with certificate qualifications**. This represents a substantial proportion of the population with a trade qualification, suggesting higher levels of alignment with workforce requirements for construction phases of development.

Source: ABS Community Profiles, 2021 (ABS, 2021) (ABS, 2021) (ABS, 2021), & Socio-Economic Indexes for Areas (SEIFA), 2021.

Table 2.4 **Key Townships Overview**

	Upper Hunter Shire LGA		Mid-Western Regional LGA		Muswellbrook LGA				NSW
Town	Merriwa	Scone	Mudgee	Gulgong	Wollar	Kandos	Muswellbrook	Denman	
Population	1,825	6,035	11,457	2,680	52	1,263	12,272	1,821	8,072,163
Median Age	45	39	41	35	35	54	35	43	37
Population Change (2011–2021)	+35 +1.95%	+346 +6.3%	+1,064 +10.14%	+299 +12.55%	-208 -80%	- 21 -1.63%	+481 +4.08%	+19 +1%	+ 1,154,505 +16.68%
IRSD	2nd decile	3rd decile	4th decile	2nd decile	2nd decile	1st decile	2nd decile	3rd decile	
IER	2nd decile	4th decile	5th decile	2nd decile	3rd decile	1st decile	2nd decile	4th decile	
IEO	2nd decile	2nd decile	1st decile	1st decile	2nd decile	1st decile	1st decile	1st decile	

Implications:

- Most townships have experienced minimal population growth between 2011 and 2021. Gulgong and Mudgee have experienced the highest increase, but this growth rate is still below the NSW average. The townships of Wollar and Kandos have both experienced a population decline.
- All townships have low SEIFA metrics, indicating higher rates of disadvantage.

Source: ABS Community Profiles, 2021 (ABS, 2021) (ABS, 2021) (ABS, 2021).

2.3 Regional Housing Context

Housing and accommodation shortages are acknowledged in policy documents across the social locality. For example, the Muswellbrook Local Strategic Planning Statement (2020) identifies a lack of housing diversity as a key challenge for the LGA and includes a planning priority to '*provide opportunities for growth in housing, including a greater mix of housing types to cater for the needs of different residents*.' Similarly, the Mid-Western Regional Local Strategic Planning Statement (2022) states that the Shire is seeking to focus on delivering affordable and adaptable housing options through effective land use planning and ensure that there is sufficient housing stock and varied residential housing options to account for growth. Mid-Western Regional Council has provided documentation to all renewable energy proponents highlighting a current lack of accommodation in the LGA and indicating their preference for TWA facilities to avoid unsustainable pressure on existing short-term accommodation. The Upper Hunter Shire LGA Local Strategic Planning Statement (2020) also recognises the need for greater housing affordability and diversity, and, as such, is aiming to encourage a range of housing types and densities, facilitate rural residential development, and support affordable and social housing.

Table 2.5 provides an overview of key housing characteristics across the LGAs, while **Table 2.6** shows the key townships within the social locality for the Project. The tables highlight that rental and housing prices are lower than NSW averages and that the proportion of low-income households in housing stress is also lower than NSW averages. However, household median incomes are also lower than NSW, and rental vacancy rates are lower than the average in Upper Hunter Shire and Muswellbrook LGAs.

Table 2.5 Regional Housing Overview

	Upper Hunter Shire LGA	Mid-Western Regional LGA	Muswellbrook LGA	NSW
Housing Market Indicators				
Weekly median household income	$1,429	$1,486	$1,628	$1,829
Proportion of low-income households in housing stress	47.8%	48.4%	43.9%	52.8%
Median house price	$540,000	$690,000	$480,000	$895,000
Median weekly rent (June 2023)	$410	$480	$420	$600
% rental price increase 2018 and 2023	46.4%	45.4%	27.2%	25%
Rental vacancy rate	0.32%	1.29%	0.56%	1.23%

Implications:

- All LGAs have a **lower weekly household income** than the State median. However, this is offset by a lower cost of living in the study area regarding median house price and median rent.
- **Rental prices have increased substantially between 2018 and 2023 in the LGAs of Upper Hunter Shire and Mid-Western Regional**. Rental prices have also increased in Muswellbrook LGA, but this growth is more consistent with the NSW average.

Sources: (DCJ Statistics, 2022; Real Estate Investor, 2023; Real Estate Investor, 2023; Real Estate Investor, 2023).

Table 2.6 Key Townships Housing Overview

	Upper Hunter Shire LGA		Mid-Western Regional LGA			Muswellbrook LGA			NSW
Town	**Merriwa**	**Scone**	**Mudgee**	**Gulgong**	**Wollar**	**Kandos**	**Muswellbrook**	**Denman**	
Median weekly household income	$1,208	$1,507	$1,678	$1,371	$1,875	$677	$1,628	$1,427	$1,829
Proportion of low-income households in housing stress	37.9%	39.5%	42.8%	51.2%	N/A	70.1%	40.4%	42.2%	52.8%
Median house price	$371,250	$568,000	$703,500	$559,250	N/A	$360,000	$465,000	$420,000	$895,000
House price increase between 2018 and 2023	$121,250 (35%)	$200,000 (36%)	$308,500 (78%)	$264,250 (89.5%)	N/A	$170,000 (89.5%)	$165,000 (35.4%)	$120,000 (28.5%)	$230,000 (36.1%)
Median weekly rental price	$350	$500	$540	$460	N/A	$350	$450	$450	$600
Rental vacancy rates	0.67%	0.52%	2.61%	0.48%	NA	0.78%	0.68%	0.45%	1.23%
Rental price increase 2018 and 2023 (%)	$100+ (40%)	$170+ (51.5%)	$165+ (44%)	$140+ (43.7%)	N/A	$120+ (52.1%)	$110+ (32.3%)	$90+ (25%)	$120+ (25%)

Implications:

- **Median weekly incomes are below the NSW median**.
- All townships with available data have reported **a significantly high increase in median house prices between 2018 and 2023**. The highest increases were reported in the townships of Kandos, Gulgong and Mudgee.
- Apart from the township of Mudgee, **rental vacancy rates remain very low.** The lowest rental vacancy was evident in Denman (0.45%) and the highest was evident in Mudgee (2.61%). Low rental vacancy rates indicate that there are limited rental properties available for incoming workforces.

Sources: (ABS, 2021; ABS, 2021; ABS, 2021; Real Estate Investor, 2023; Real Estate Investor, 2023; Real Estate Investor, 2023).

2.4 Community Facilities and Services

The workforce associated with the Project is most likely to access services and facilities in Merriwa (the town likely to host the largest number of workers), followed by Mudgee (the closet primary order town) and Muswellbrook (a larger town within 75 minutes of the Project and a larger town along the transport route from Newcastle).

Upper Hunter Shire is a base for 13 primary and secondary schools and a TAFE Campus. Key services include an airport, two hospitals and associated allied specialist and health services. Upper Hunter Shire also has a variety of entertainment and cultural facilities. Merriwa hosts a multi-purpose service medical centre and a surgery employing two general practitioners (GP).

Mid-Western Regional LGA provides a series of higher-order services, including 11 primary and secondary schools and a TAFE. Services and population in the Mid-Western Regional LGA are concentrated in the town of Mudgee. Mudgee provides multiple allied specialist and health services, an airport and is connected to Sydney via daily train and bus services.

The Muswellbrook LGA also hosts a number of key services. This includes eight primary and secondary schools, public transport to Sydney, a TAFE campus and one hospital. Services are concentrated in the town of Muswellbrook.

Analysis conducted for EnergyCo on the Central West Orana Renewable Energy Zone, and echoed in the 2022 to 2025 Western Primary Health Network Needs Assessment (Primary Health Network Western NSW, 2022), has identified substantial gaps in health services in the region, with marked shortages in GPs, specialist medical practitioners and hospital beds, particularly in the Upper Hunter LGA (EnergyCo, 2022).

Table 2.7 provides a further overview of the facilities and services currently available in the social locality, services identified through local government webpages and community support directories.

Table 2.7 Community Facilities and Services

	Upper Hunter Shire LGA	Mid-Western Regional LGA	Muswellbrook LGA
Health services, including surgeries, hospitals and multi-purpose centres	• Scott Memorial Hospital • Murrurundi Hospital • Merriwa Multi-Purpose Service • Merriwa Surgery.	• Mudgee Health service • Gulgong Multi-Purpose Service • Kandos Medical Health Practice • Mudgee Medical Centre.	• Muswellbrook Hospital • Ungooroo Outreach Clinic • Hunter Medical Practice • Muswellbrook Doctors • Brook Medical Centre.
Educational options	• 13 primary and secondary schools across the LGA • TAFE campus.	• 11 primary and secondary schools • TAFE campus • Country University Centre (Under Construction).	• 8 primary schools and secondary schools • TAFE Campus.

	Upper Hunter Shire LGA	Mid-Western Regional LGA	Muswellbrook LGA
Key Transport Infrastructure	• Scone Memorial Airport • Aberdeen is the last stop on the CityLink and gets direct train services from Newcastle daily, buses running between Scone, Aberdeen, Muswellbrook and Denman.	• Mudgee Airport • Daily train and bus services from Sydney.	• Daily train services to Sydney, Armidale, and Newcastle.
Employment Service	• Joblink Plus, APM, Workskill.	• Sureway Employment and Training, Skillset, APM, Verto.	• APM, Harvey Recruitment, Joblink Plus.
Cultural and Entertainment Facilities	• 2 art galleries, 5 museums, 5 library branches, 3 swimming pools	• 2 art galleries, 5 museums, 4 library branches, swimming pool	• 2 art galleries, 1 swimming pool, 1 golf club, 1 cinema and 2 library branches.
Housing Services	• Upper Hunter Homeless Support & Upper Hunter Community Services are both located outside of the LGA in Muswellbrook.	• Mudgee Department of Communities & Justice (DCJ) Office • Housing Plus.	• Upper Hunter Homeless Support • Upper Hunter Community Services.
Police Stations	• Scone • Merriwa • Murrundi • Moonan Flt • Cassilis.	• Dunedoo • Kandos • Mudgee • Gulgong • Rylestone.	• Muswellbrook • Denman.

Source: (Mid-Western Regional Council, 2023; Upper Hunter Shire Council, 2023; Muswellbrook Shire Council, 2023).

2.5 Regional Economic Context

The Upper Hunter Regional Plan 2041 outlines the goals and actions for the Upper Hunter Region to achieve a sustainable future (NSW Department of Planning and Environment, 2022). The plan applies to 10 local government areas including the Upper Hunter and Muswellbrook Shires. The Plan establishes the following objectives with relevance to the AES:

- Diversify the Hunter’s mining, energy and industrial capacity.
- Ensure economic self-determination for Aboriginal communities.
- Create a 15-minute region made up of mixed, multi-modal, inclusive and vibrant local community.
- Plan for “Nimble neighbourhoods”, diverse housing and sequenced development.
- Plan for business and services at the heart of healthy, prosperous and innovative communities.

- Build an inter-connected and globally focused Hunter. The economy is expected to further diversify and cater to demand for renewable energy.
- Increased infrastructure assets and skilled workforce to support more renewable energy generation.

The Upper Hunter is recognised as undergoing a transition with major transformation occurring in power generation and emerging technologies. The existing high voltage transmission lines and transport infrastructure mean the Hunter plays an important role in powering NSW.

Table 2.8 provides an overview of the key trends and characteristics of both regional economies and highlights relevant LGA-level insights. Data reveals that employment in Mid-Western Regional and Muswellbrook LGAs is predominately focused on the mining sector, with significant regional strengths in this sector. In contrast, Upper Hunter Shire LGA is highly reliant on agriculture, forestry and fishing. Across all LGAs, there is a large proportion of workforce employed as technicians and trades workers, suggesting higher likelihood that locals will have appropriate skill sets to support construction of the Project.

Table 2.8 Regional Economy Overview

	Upper Hunter Shire LGA	Mid-Western Regional LGA	Muswellbrook LGA	NSW
Unemployment rate	4.9%	4%	5.1%	4.9%
Top 5 industries of employment	Agriculture, Forestry and Fishing: (22.9%) Health Care and Social Assistance: (10.6%) Education and Training-: (9.8%) Manufacturing: (8.3%) Retail Trade: (8.0%)	Mining: (15%) Health Care and Social Assistance: (11.1%) Retail Trade: (9.2%) Construction: 8.3% Education and Training/ Accommodation and Food Service: (7.9%)	Mining: (21.5%) Health Care and Social Assistance: (9.0%) Retail Trade: (9.0%) Agriculture, Forestry and Fishing: (7.1%) Accommodation and Food Services: (6.8%)	Hospitals (except psychiatric hospitals) - 4.2% Supermarket and Grocery Stores – 2.5% Other Social assistance Services – 2.45 Computer System design and related Services – 2.3% Aged Care Residential Services – 2.2%
Top 5 occupation types	Technicians and trades workers: 1152 (17%) Labourers: 1136 (16.7%) Managers: 1037 (15.3%) Machinery operators and drivers: 892 (13.1%) Professionals: 825 (12.2%)	Technicians and trades workers: 1998 (17.5%) Professionals: 1607 (14.1%) Managers: 1591 (13.9%) Machinery operators and drivers: 1473 (12.9%) Labourers: 1298 (11.4%)	Technicians and trades workers:(19.4%) Machinery operators and drivers: (18%) Labourers: (13.8%) Community and personal service workers: (10.3%) Professional: (10.1%)	Professionals: 952,131 (25.8%) Managers: 536,820 (14.6%) Clerical and administrative workers: 480,612 (13.0%) Technicians and trades workers: 436,589 (11.9%) Community and personal service workers: 390,779 (10.6%)
Labour force participation rate	60.5%	57.8%	60.1%	58.7%

Sources: (ABS, 2021; ABS, 2021; ABS, 2021; Department of Jobs and Skills Asutralia, 2023)

2.6 Cumulative Impacts

Cumulative impacts may occur if construction periods of nearby major projects overlap with the construction period of the current development and consequently may present significant challenges in relation to access to housing, accommodation, and social infrastructure. In contrast, overlapping projects create opportunities to build a pipeline of projects that encourage skilled workers (and their families) to move/relocate to the area, either permanently or in the medium-term, given project continuity.

Table 2.10 outlines the State Significant Developments (SSDs) in the Central-West Orana Renewable Energy Zone and whether their construction timeframes are likely to overlap with the Project's construction timeframe. Note that timeframes for construction have been identified through a review of publicly available information on the DPE's Major Projects Portal (Department of Planning and Environment, 2023). It is possible, and indeed likely, that many of these timeframes will be delayed, and unlikely that they will commence ahead of the proposed dates.

When assessing likelihood of cumulative impact, the assessment considers distance between projects, anticipated size of project workforces, distances to larger-order townships likely to provide the majority of accommodation, employment and service contributions and anticipated construction timelines. Cumulative impact is anticipated even for projects up to 100 km from each other given the scarcity of larger townships in the social locality to meet higher-order health, retail, accommodation, supply chain and service needs of projects and workforces. The impacts are colour coded according to **Table 2.9**.

Table 2.9 Cumulative Impact Colour Scheme Meaning

Colour	Meaning
	No/unlikely cumulative impact
	Possible cumulative impact
	Likely cumulative impact
	Highly likely cumulative impact

Table 2.10 Cumulative Impact of Proximal Developments

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Request for SEARs yet to be submitted						
Piambong Wind Farm	Mid-Western Regional LGA	550 MW wind farm.	Construction to commence in 2026 (tentative)	Piambong (100 km)	400 jobs during construction and 15 jobs during operation.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing and accommodation is **unlikely** given distance between projects and differences in development phases.
SEARS						
Beryl Battery Energy Storage System SSD-61460977	Mid-Western Regional LGA	Development of a 100 MW / 200 MWh battery energy storage facility with associated infrastructure.	Construction to commence in 2025 (tentative)	Holleys Lane, Gulgong (80 km)	40 FTE during construction.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing and accommodation is **possible** given distance between projects and differences in development phases.
Prepare EIS						
Sandy Creek Solar Farm SSD-41287735	Warrumbungle Shire LGA & Dubbo Regional LGA	Development of a 700 MW solar farm and relevant infrastructure.	Construction to commence in late 2025 or early 2026	Dapper Rd, Dunedoo (100 km) Located within CWO REZ	270 workers during construction, but this could increase to a peak of 350 over a 28-month period.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing and employment is **possible** given distance between projects and differences in development phases.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Cobbora Solar Farm SSD-29491142	Warrumbungle Shire LGA & Dubbo LGA	Development of a 700 MW solar farm with energy storage and relevant infrastructure.	2025–2028 (tentative)	Spring Ridge Road, Cobbora (100 km) Located within CWO REZ	Peak construction workforce of 700.	Construction timeframes may overlap throughout the Project's construction phase. Cumulative impact on housing, employment and access to services is **possible** given distance between projects and differences in development phases.
Barneys Reef Wind Farm SSD-24106966	Mid-Western Regional LGA	350 MW wind farm, up to 63 wind turbines.	2025–2027	Castlereagh Highway, 16 km north of Gulgong (50 km) Located within CWO REZ	340 jobs during the construction phase and approximately 10 jobs during the operational phase.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given proximity of projects.
Orana Wind Farm SSD-58260958	Warrumbungle Shire LGA & Mid-Western Regional LGA	Construction and operation of a wind farm with up to 92 wind turbines, battery storage and associated infrastructure.	2025–2027	Dunedoo (124 km) Located within CWO REZ	580 construction workers and 12 FTE operational staff.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing, employment and access to services is **possible** given distance between projects and differences in development phases.
Merriwa Solar Farm SSD-30913035	Upper Hunter Shire LGA	Development of a 550 MW solar farm and a BESS.	Construction to be completed in 2027	Merriwa (30 km)	500 jobs during construction.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given proximity between projects. However, indicative timing suggests that Goulburn River Solar Farm peak construction will likely be completed before Merriwa Solar Farm commences, reducing the scale of impact.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Dapper Solar Farm SSD-52217961	Warrumbungle Shire LGA	Development of a 300 MW solar farm and associated infrastructure.	2025–2026	Sandy Creek, Cobbora (110 km) Located within CWO REZ	250 FTE during construction, with 350 during peak construction.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing, employment and access to services is **possible** given distance between projects and differences in development phases.
Exhibition						
Bellambi Heights Solar Farm SSD-33344237	Mid-Western Regional LGA	Originally a 200 MW Solar Farm (one stage), 200 MW Battery (built in 2x 100 MW stages), connecting to existing 330 kV transmission line. Revised in 2023 to remove the solar farm and only retain the BESS.	2025–2026	Castlereagh Highway and Puggoon Road, Beryl (54 km)	Employment generation would include approximately 70–100 people for battery per stage.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given proximity between projects and overlapping development phases.
CWO REZ Transmission Infrastructure SSI-48323210	-	Development of new twin double circuit 500 kV transmission lines between Wollar and the proposed substations at Merotherie and Elong Elong, and connections from these lines to renewable energy generation and storage projects in the CWO REZ.	2024–2027	25 km	Peak workforce of 650, with a construction period of 36 months.	Construction timeframes may overlap throughout the Project's construction phase. Cumulative impact on employment and access to services is **highly likely** given proximity between projects and differences in development phases. Impacts to housing are mitigated by plans for a temporary workforce accommodation camp.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Response to Submissions						
Wellington South Battery Energy Storage Facility SSD-27014706	Dubbo Regional LGA	Development of a 500 MW and 1000 MWH BESS.	2024	Goolma Rd, Wuuluman (140 km)	100 construction workers and 2 workers during operation.	Construction timeframes may overlap earlier in the Project's construction phase. Cumulative impact on housing, employment and access to services is **unlikely** given distance between projects.
Spicers Creek Wind Farm SSD-41134610	Warrumbungle Shire LGA & Dubbo Regional LGA	Development of up to 117 wind turbines.	2025–2028	Sweeneys Lane, Elong Elong (80 km) Located within CWO REZ	Up to 300 construction jobs.	Construction timeframes may overlap throughout the Project's construction phase. Cumulative impact on housing, employment and access to services is **possible** given distance between projects.
Dubbo Gas Energy Storage System (Dubbo Firming Power Station) SSD-28088034	Dubbo Regional LGA	60 MW gas fired power station, hydrogen generation plant and 2.5 km and 500 m gas pipelines.	2024–2025	Yarrandale Rd, Dubbo (185 km)	Not Available.	Construction timeframes may overlap earlier in the Project's construction phase. Cumulative impact on housing, employment and access to services is **unlikely** given distance between projects.
Moolarben OC3 Extension Project SSD-33083358	Mid-Western Regional LGA	Extension of open cut mining at OC3 to the south.	Construction to be completed in 2025	Ulan Rd, Ulan (48 km)	Not Available.	Construction timeframes may overlap earlier in the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given distance between projects.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Orana BESS SSD-45242780	Dubbo Regional LGA	Development of a 400 MW / 1600 MWh battery energy storage system and associated infrastructure and connection works.	2024	Goolma Road, Montefiores (140 km)	100–150 jobs during construction.	Construction timeframes may overlap earlier in the Project's construction phase. Cumulative impact on housing, employment and access to services is **unlikely** given distance between projects.
Valley of the Winds Wind Farm SSD-10461	Warrumbungle Shire LGA	800 MW wind farm, up to 175 wind turbines.	2025–2027	Coolah (57 km) Located within CWO REZ	400 peak construction workforce.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given distance between projects and overlapping construction time frames.
Tallawang Solar Farm SSD-23700028	Mid-Western Regional Council	Development of a 500 MW solar farm with 200 MW battery energy storage system and associated infrastructure.	2025–2027	Puggoon Rd (50 km) Located within CWO REZ	380 full time equivalent (FTE) jobs during construction (with a peak of 420), and 10 FTE jobs during operation.	Construction timeframes may overlap later in the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given distance between projects and overlapping construction timeframes.
Birriwa Solar Farm SSD-29508870	Mid-Western Regional LGA	600 MW solar farm with 1000 MW BESS.	2025–2027	Barneys Reef Rd, Birriwa (60 km) Located within CWO REZ	Peak construction workforce of 800. 20 full time equivalent jobs throughout operations, 28-month construction period.	Construction timeframes may overlap throughout in the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given distance between projects and overlapping timeframes.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Assessment						
Bowmans Creek Wind Farm SSD-10315	Muswellbrook LGA, Singleton LGA & Upper Hunter Shire LGA	Construction and operation of a wind farm with up to 60 wind turbines and associated infrastructure.	Commencing 2024 (tentative)	Bowmans Creek (96 km)	150 peak construction workforce.	Construction timeframes may overlap earlier in the Project's construction phase. Cumulative impact on housing, employment and access to services is **possible** given distance between projects and differences in development phases.
Hills of Gold Wind Farm SSD-9679	Tamworth Regional LGA, Upper Hunter Shire LGA & Liverpool Plains LGA	Up to 65 wind turbines with a maximum capacity of 420 MW.	2024–2026	Morrisons Gap Rd, Hanging Rock (101 km)	Up to 272 jobs during construction and up to 34 operational jobs.	Construction timeframes may overlap earlier in the Project's construction phase. Cumulative impact on housing, employment and access to services is **unlikely** given distance between projects.
Determination						
Dubbo Quarry Continuation Project SSD-10417	Dubbo Regional LGA	Expansion of existing hard rock quarry into two new areas.	N/A	Sheraton Rd, Dubbo (180 km)	12 equivalent FTE, with a peak of 14.	Cumulative impact **unlikely** due to location and low workforce numbers.
Maryvale Solar Farm SSD-8777	Dubbo Regional LGA	Development of a 125 MW solar farm and relevant infrastructure	2024	Maryvale Rd, Maryvale (150 km)	Approximately 100 workers during construction.	Cumulative impact **unlikely** due to distance and construction timing.
Dubbo Project (formerly known as the Dubbo Zirconia Mine) SSD-5251	Dubbo Regional LGA	Mining of ore to produce Zirconia and Niobium products.	2022–2024	Toongi Rd, Toongi (190 km)		Cumulative impact **unlikely** due to distance and construction timing.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Apsley Battery Energy Storage System SSD-35160796	Dubbo Regional LGA	Development of a 120 MW / 240 MWh battery energy storage facility with associated infrastructure.	2024	Mitchell Highway, Apsley (150 km)	50 jobs during peak construction, with 5 FTE staff during operation with the potential for up to 50 casual positions.	Cumulative impact **unlikely** due to distance, construction timing and low workforce numbers.
Wellington North Solar Farm SSD-8895	Dubbo Regional LGA	Development of a 300 MW solar farm and associated infrastructure.	2022–2024	Goolma Rd, Wellington (100 km)	250 peak construction workforce.	Cumulative impact **unlikely** due to distance and construction timing.
Wollar Solar Farm SSD-9254	Mid-Western Regional LGA	290 MW solar farm.	2024	Mudgee (22 km)	Construction workforce of up to 300 over a two-year period.	Construction timeframes may overlap throughout the Project's construction phase. Cumulative impact on housing, employment and access to services is **highly likely** given proximity between projects.
Uungula Wind Farm SSD-6687	Dubbo Regional LGA	Development of up to 97 wind turbines with energy storage and relevant infrastructure.	2024–2025	Uungula (120 km)	250 direct and 400 indirect full time equivalent positions over the construction period. Once operational, there would be 12 direct and 35 indirect jobs. Construction expected to take approx. 30 months.	Cumulative impact unlikely due to distance between projects.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Dunedoo Solar Farm SSD-8847	Warrumbungle Shire LGA	Development of a 55 MW solar farm with energy storage.	2024	Allweather Road, Dunedoo (70 km)	100–125 Peak workforce, with a 10–12 month construction period. Up to three FTE staff during operation.	Construction timeframes may overlap earlier in the Project's construction phase. Cumulative impact on housing, employment and access to services is **possible (though limited)** given small workforce.
Stubbo Solar Farm SSD-10452	Mid-Western Regional LGA	400 MW solar farm with energy storage.	2025–2026	Blue Springs Rd, Stubbo (48 km) Located within CWO REZ	Employment generation would include approximately 400 people during construction over 2 years.	Construction timeframes may overlap throughout the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given distance between projects.
Bowdens Silver Mine SSD-5765	Mid-Western Regional LGA	Development of an open cut silver mine and associated infrastructure.	2024–2026	Maloneys Rd, Lue (100 km)	Construction workforce up to 246 on-site workers and 74 off-site, and between 192–228 workers over 15 years of operations. Peak workforce of 320. Construction timeframe of 18 months.	Construction timeframes may overlap throughout the Project's construction phase. Cumulative impact on housing, employment and access to services is **possible (though limited)** given distance between projects.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Liverpool Range Wind Farm SSD-6696	Warrumbungle Shire LGA, Upper Hunter Shire LGA & Mid-Western Regional LGA	Up to 1,000 MW wind farm with up to 267 wind turbines.	2025–2027	Coolah (55 km) Located within CWO REZ	Up to 800 construction workers and 47 roles during operations. 550 peak workforce, approx. 24–36 months for construction.	Construction timeframes may overlap throughout the Project's construction phase. Cumulative impact on housing, employment and access to services is **likely** given distance between projects.
Operational						
Suntop Solar Farm SSD-8696	Dubbo Regional LGA	Development of a 170 MW solar farm.	N/A	Suntop Rd, Suntop (161 km)	N/A.	No, project is operational.
Dubbo Hospital Redevelopment Stage 1/2 SSD-5250	Dubbo Regional LGA	Dubbo Base Hospital Redevelopment Stage 1 and 2.	N/A	Myall Street, Dubbo (180 km)	Not Available.	No, construction is complete.
Dubbo Base Hospital Redevelopment Stage 3/4 SSD-7720	Dubbo Regional LGA	Construction and operation of Dubbo Base Hospital Redevelopment Stage 3 and 4.	N/A	Myall Street, Dubbo (180 km)	Not Available.	No, construction is complete.
Beryl Solar Farm SSD-8183	Mid-Western Regional LGA	109 MW solar farm	N/A	Beryl (50 km)	N/A.	No, project is operational.
Kyoto Wind Farm MP06_0055	Muswellbrook Shire LGA & Upper Hunter Shire LGA	A 200 MWh wind farm.	N/A	Middlebrook and Mountainview Stations, Scone (62 km)	N/A.	No, project is operational.

State Significant Development	LGA	Description	Indicative Construction Timeline (where available)	Location and Distance from the Project	Approximate Workforce Numbers	Cumulative Impact
Bodangora Wind Farm MP10_0157	Dubbo Regional LGA	A 113 MW operational wind farm.	N/A	Gillinghall Rd, Bondangora (130 km)	N/A.	No, project is operational.
Ulan Coal Complex, Moolarben Coal Complex and Wilpinjong Mine	Mid-Western Regional LGA	Open cut and underground mine, operational with approval until 2033.	N/A	29 km	Production of up to 20 MT if run-of-mine coal per annum, with a peak workforce of 931.	Cumulative impacts **possible** given distance between projects and existence of an operational workforce.
Cobbora Coal Mine MP10_0001	Warrumbungle Shire LGA, Mid-Western Regional LGA & Wellington LGA	Operational Coal Mine.	N/A	Cobbora (140 km)	N/A.	No, project is operational.
Wellington Solar Farm SSD-8573	Dubbo Regional LGA	A 174 MW solar farm and associated infrastructure.	N/A	Goolma Rd, Wellington (100 km)	N/A.	No, project is operational.

Source: (Department of Planning and Environment, 2023).

2.6.1 Impact of Local Events

As the Hunter Valley is a popular tourism destination, there may also be competition for accommodation during peak tourism periods or during key events or festivals, when local accommodation may experience high occupancy rates.

These periods include the Christmas and Easter holiday periods, school holiday periods, the autumn harvest period of March to May (which coincides with the Hunter Valley Harvest Festival), as well as during popular local events such as the Festival of the Fleeces in Merriwa in June, the Merriwa Springtime Show in September, and wider events such as the Hunter Valley Wine and Beer Festival around June. The Hunter Valley region is also a popular location for music festivals and concerts through the year. Although individual events may be located in specific towns distant to the Project, visitors to the region for these events may choose to travel through and visit other towns in the Project's host or neighbouring LGAs, and patronise local accommodation providers.

LSbp could help mitigate accommodation impacts by actively avoiding occupying rooms in local accommodation providers during peak periods.

3.0 Key Stakeholder Engagement

To support the preparation of the AES, targeted engagement has been undertaken between 5 October and 2 November 2023 with the following stakeholder groups. This engagement has been in addition to other community and government agency consultation undertaken to inform and support the preparation of the Response to Submissions and Amendment Report.

Table 3.1 Stakeholder Engagement to Inform the AES

Stakeholder Name	Location	Engagement Mechanism	Key Themes/Findings	Timing in 2023
Accommodation Providers				
Local developer (name redacted)	Upper Hunter Shire LGA	MS Teams Meeting	• The project aims to build a 500-room workers camp in Merriwa using recycled shipping containers, which will accommodate the staff of renewable energy projects in the area. The camp will offer various facilities and benefits for the workers and the local community, and will have potential long-term uses for tourism, aged care, housing, or relocation.	9 October 2023
The Golden Fleece Motor Inn	Upper Hunter Shire LGA	In person discussion	• The hotel owner is willing to host the project workers, but has limited availability due to high demand from various customers. The hotel has 17 rooms and a high occupancy rate of 95%, and faces challenges in expanding and staffing.	11 October 2023
The Royal Hotel Cassilis	Upper Hunter Shire LGA	In person meeting	• The pub owner is keen to cater for the project, as it will boost their business. They offer dinner and lunch on selected days, and have 15 rooms available for accommodation. They are planning to expand and could provide more rooms and cabins if they have a formal agreement with LSbp.	12 October 2023
Merriwa RSL	Upper Hunter Shire LGA	In person meeting	• The RSL is exploring the option of adding up to 25 modular units in its backyard to accommodate the project workers. They are in talks with a modular dwelling company.	12 October 2023
RM Property	Upper Hunter Shire LGA	In person meeting	• The rental manager has a high occupancy rate of 98% for their rentals and Airbnb's in the area, which vary depending on the season and the demand. They suggest that the project should use a hybrid approach of different accommodation options to share the economic benefit with the local community.	13 October 2023

Stakeholder Name	Location	Engagement Mechanism	Key Themes/Findings	Timing in 2023
Merriwa Motor Inn	Upper Hunter Shire LGA	In person discussion	• The Motor Inn has 14 rooms available for the project workers at a discounted rate.	13 October 2023
The Property Shop Mudgee	Mid-Western Regional LGA	Phone call	• The owner highlighted the challenge of finding accommodation for the project workers in Mudgee and surrounds, due to the low availability of housing stock and the negative community perception of previous solar farm workers. Also noted the lesson learnt from mining companies who made a deal with local council to build cabins and guarantee their occupancy, however, the shared community memory of mining affects the town's tourism and property market.	5 October 2023
Sandy Hollow Tourist Park	Upper Hunter Shire LGA	In person discussion	• The tourist park can currently offer 25 rooms (including cabins, hotel rooms, and a house), but have plans to expand their capacity up to 40 rooms for the project workers with additional cabins.	13 October 2023
Ellamara Giants Creek	Upper Hunter Shire LGA	In person discussion	• Expressed capacity to book out up to 17 beds (requires room sharing with king singles) with the capacity to build up to 12 more rooms.	13 October 2023
Grapevine Motel – Denman	Muswellbrook Shire LGA	In person meeting	• Would consider booking out 10–12 rooms at a time to the project, however, currently has 98% occupancy rate. Explained that they would not book out entire venue to solar farm workers, as they want to continue relationship with regulars.	13 October 2023
Brightlands Living	Muswellbrook Shire LGA	MS Teams Meeting	• Discussed existing development in planning in Muswellbrook, including 450 lots of long-term housing with the capacity to house the Project workforce.	17 October 2023
Employment Providers				
Blackrock Industries	Muswellbrook Shire LGA	In person meeting	• Discussed opportunities to place local workers, apprentices, and prisoner-program participants on the project. Also discussed the opportunity to partner with Brightlands Living in their accommodation.	12 October 2023

Stakeholder Name	Location	Engagement Mechanism	Key Themes/Findings	Timing in 2023
			• Blackrock Industries described how participants from their successful prisoner program found work in the local mining industry, and how these learnings could be transferred to this Project. Blackrock Industries also described their ability to engage local people into the Project's construction workforce, including opportunities for trainee and apprenticeships for people who identify as Indigenous. Blackrock Industries assumes they would be able to provide at least 30 local workers for the construction of the Project, being a mix of prisoner program participants, labouring roles, and some trainees.	
Programmed	Muswellbrook Shire LGA	Phone call	• Would be interested in working with LSbp to help provide local (Merriwa, Muswellbrook and Singleton) skilled labour, but also a campaign targeting Year 12 students, labouring roles and farming workers who could do flexible shifts. • Programmed indicated their interest in working with LSbp, as they would be able to provide skilled local workers from Merriwa, Muswellbrook, and Singleton to work on the Project. They indicated they could implement a campaign targeting various cohorts such as students in year 12, labouring roles, and farm workers with the flexibility to do other part-time work. Considering the competitive industries in the region, and what Programmed have been able to provide for other Projects in the area, Programmed indicated there is a key opportunity for the Project in terms of employing local workforce, should LSbp provide traineeships and/or apprenticeships for local people.	19 October 2023
Local Government				
Upper Hunter Shire Council	Upper Hunter Shire LGA	In person meeting	• Discussed social impacts of population growth in Merriwa. Raised concerns about the proposed design of the accommodation campsite.	12 October 2023
		MS Teams Meeting	• Discussed the proposed accommodation campsite, and where it was up to in the development process. • Discussed the Project's response to the incoming workforce impact to medical services in the area. Explained the conversation with the local health provider, and LSbp shared their Telehealth offering to all incoming workforce. LSbp provided an update on the AES process.	8 November 2023

Stakeholder Name	Location	Engagement Mechanism	Key Themes/Findings	Timing in 2023
Muswellbrook Shire Council	Muswellbrook Shire LGA	In person meeting	• Expressed desire to see renewable energy proponents support transition programs to help those working in mining to move to renewable energy, acknowledging there aren't many operational roles. Expressed preference for long-term housing and options that encouraged people to remain in the community, not Drive-in-Drive-Out (DIDO).	12 October 2023
Mid-Western Regional Council	Mid-Western Regional LGA	MS Teams Meeting	• Expressed satisfaction with the Project AES plan to avoid use of temporary accommodation in Mid-Western Region.	19 October 2023
Industry / Community Groups				
Merriwa Chamber of Commerce	Upper Hunter Shire LGA	In person meeting	• The Chamber of Commerce invited LSbp to attend a meeting to present the project and the accommodation plans to the local businesses. They expressed a positive attitude towards the project and its economic benefits, and suggested that LSbp should collaborate with TAFE and schools to promote the industry to young people.	13 October 2023
Merriwa – Cassilis Alliance	Upper Hunter Shire LGA	Phone call	• Advertising to all the smaller business owners and Airbnb hosts is important, as they may be looking at building additional accommodation. Great opportunities for local people.	5 October 2023
Gulgong Chamber of Commerce	Mid-Western Regional LGA	Phone call	• Lack of available accommodation in Gulgong currently.	5 October 2023
Health Provider				
Merriwa Surgery	Upper Hunter Shire LGA	In person discussion	• Indicated there were sufficient health services in Merriwa at present, especially if workers were encouraged to seek non-urgent care in their home communities while being triaged through the Multi-Purpose Centre for emergency care.	13 October 2023

Source: Umwelt, 2023.

4.0 Accommodation Framework

4.1 Accommodation Framework Scope

This Accommodation Framework aims to provide evidence-based recommendations to manage the social opportunities and impacts associated with housing the temporary construction workforces required for the Project.

4.2 Accommodation Profile – Review of Options

In developing the framework and profile, the following accommodation types have been considered:

- **Existing short-term accommodation** – this includes self-catering houses and units (typically listed on short stay services such as Airbnb and HomeAway), motels, hotels and camping/caravan parks (most suitable would-be cabin style facilities), with the availability of properties influenced by a strong visitor economy.
- **Emerging short-term accommodation** – this includes new short-term accommodation (as defined above) that is likely to become available in time for Project construction timelines. This new housing has been identified through stakeholder engagement with local accommodation providers currently planning to expand their offerings in response to anticipated future demand.
- **Longer term accommodation** – this includes rental properties available in the social locality. The availability of these properties is influenced by the supply and future development of housing options in the target area.
- **Custom-built temporary accommodation** – this includes purpose-built worker's sites designed to meet the needs of a single project or multiple proximal projects.

4.2.1 Existing Short-term Accommodation

This section considers levels of availability of this accommodation type, based on the following assumptions and limitations:

- Short-term accommodation stock:
  - For the purposes of this study, an 'entire place' on Airbnb has been counted as two beds, despite there likely being opportunity to fit more than one person in a home and multiple workers sharing a rental being a common practice in the industry. Similarly, each room listed in short-term accommodation has been counted as space for one person, despite some rooms including more than one bed. These are conservative estimates and reflect a 'worst case scenario' in relation to accommodation availability.
  - For the purposes of this analysis, all short-term accommodation has been considered as 'able to be occupied' by incoming work forces. However, it is likely that certain accommodation types, e.g., cottages or luxury retreats are unlikely to be utilised by the incoming workforce. This assumption is therefore less conservative.

- Short-term accommodation occupancy:
  - Data derived from AirDNA (2023) identified that across the three LGAs the average occupancy rate ranged between 51% and 61.6% (see **Figure 4.1**). The highest occupancy rate was recorded in Muswellbrook LGA (61.6%). Although this data is based on Airbnb occupancy only, it is assumed that this is indicative of occupancy and demand trends for short-term accommodation in general.
  - Between January 2022 and April 2023, occupancy rates in Upper Hunter Shire and Mid-Western Regional LGAs Airbnb peaked in April 2022 at 66.7% and 71.9%. Occupancy rates peaked in May 2022 for Muswellbrook LGA, which recorded an occupancy rate of 79.9%.
  - This framework uses a conservative estimate of 80% occupancy rates across Airbnb and hotel and motel accommodation, thus assuming that 20% of total stock is available to incoming workforces.
  - This framework acknowledges the cumulative impact of multiple construction projects competing for access to remaining short-term accommodation. It therefore aims to access 20% of the available short-term accommodation. This approach also accounts for the presence of accommodation in the room count that is not 'appropriate' for the workforce.
  - Following discussions with Mid-Western Regional Council, it has been determined that short-term accommodation providers within Mid-Western Regional LGA will not be considered as available to the Project. Subsequently, while data is presented for Mid-Western Regional LGA in **Table 4.1** and **Table 4.2**, they are not considered in the final room availability figures.

Table 4.1 below provides an overview of short-term accommodation availability across the Upper Hunter, Mid-Western Regional, and Muswellbrook LGAs, while **Table 4.2** provides an overview of Airbnb availability for the same LGAs.

As mentioned, assessment of room occupancy rates is based on a conservative estimate of 80% occupancy rates across Airbnb and hotel and motel accommodation, and final availability is based on the assumption that 20% of available stock is available to the incoming Project workforce.

Table 4.1 Short Term Accommodation Availability

LGA	Town	No. of short-term accommodation providers	Total no. of short-term accommodation rooms	Number of rooms available at 80% occupancy rate	Number of rooms available to the Project (20% of rooms available)
Upper Hunter Shire LGA	Merriwa	3	36	7	1
	Scone	10	46	9	2
Mid-Western Regional LGA[5]	Mudgee	94	1,033	361	0
	Gulgong	5	53	18	0
	Wollar	0	0	0	0
	Kandos	1	4	0	0
Muswellbrook LGA	Muswellbrook	2	124	25	5
	Denman	0	0	0	0
Total		**115**	**1,296**	**451**	**8**

Source: (Accommodation Tourism Data Warehouse, 2023).

[5] Following discussions with Mid-Western Regional Council, it has been determined that short-term accommodation providers within Mid-Western Regional LGA will not be considered as available to the Project.

Table 4.2 Airbnb Rooms Available as of May 2023

LGA	Number of Listings	Number of rooms	Number of Rooms available at 80% Occupancy Rate	Number of Rooms available to the Project (20%)
Muswellbrook LGA	24	48	10	2
Upper Hunter Shire LGA	46	92	18	4
Mid-Western Regional LGA[6]	621	1,242	0	0
Total	**691**	**1,382**	**42**	**6**

Source: (AirDNA, 2023).

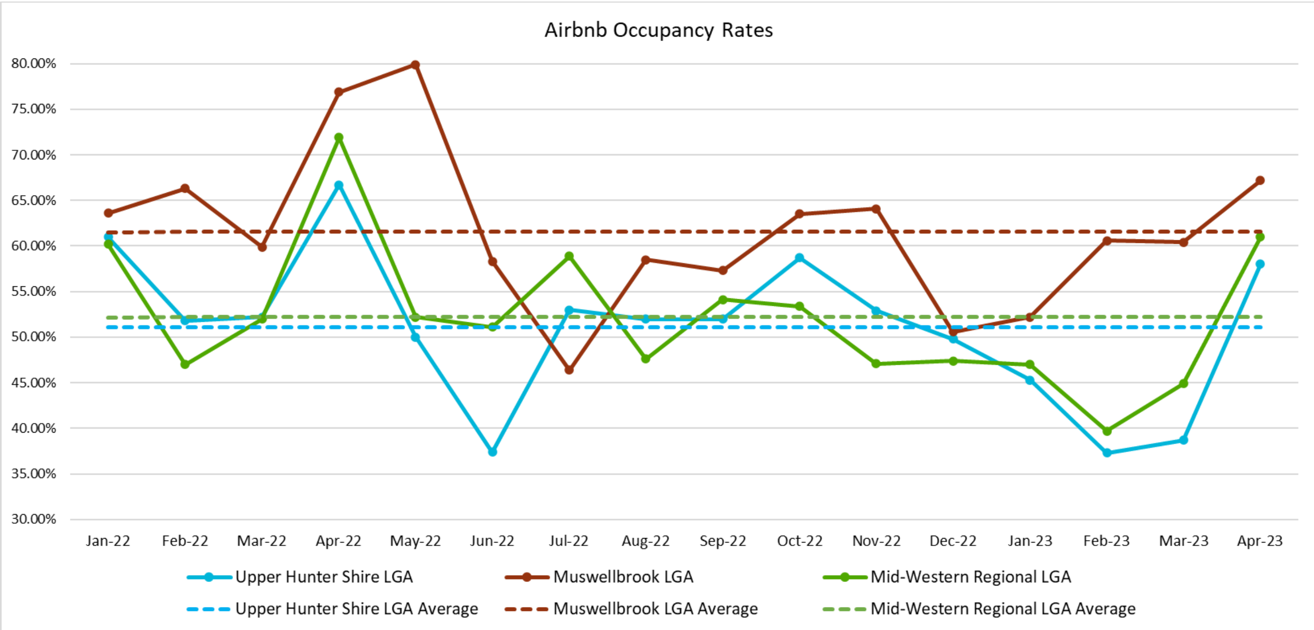


Figure 4.1 Airbnb Occupancy Rates

Source: (AirDNA, 2023).

Based on the above analysis and assumptions made, the accommodation framework anticipates that approximately 14 workers may be housed in existing proximal short-term accommodation without causing significant impact to the existing tourism sector and other short-term accommodation users within the social locality.

4.2.2 Emerging short-term accommodation

Based on engagement conducted for this AES (summarised in **Section 3.0**), there is evidence that many existing accommodation and service providers in the region are considering expanding or establishing accommodation offerings to meet anticipated future demand, as outlined in **Table 4.3** below.

6 Following discussions with Mid-Western Regional Council, it has been determined that short-term accommodation providers within Mid-Western Regional LGA will not be considered as available to the Project.

Table 4.3 Accommodation Providers With Potential Future Expansion

Options	Current Number of Beds	Potential Expansion	Benefits
The Golden Fleece Motor Inn	25	Up to 10 beds	Within 30 min drive of the project. Walking distance to services in Merriwa town.
The Royal Hotel Cassilis	15	Between 15 to 25 beds	Within 30 min drive of the project. Have indicated willingness to expand to 25 beds.
Merriwa RSL	0	Potentially 25 beds	Within 30 min drive of the project. Walking distance to services in Merriwa town.
RM Property	2	Approximately 15 beds	Within 1 hour drive of the Project.
Merriwa Motor Inn	14	14 beds	Within 30 min drive of the project. Walking distance to services in Merriwa town.
Sandy Hollow Tourist Park	25	Up to 40 beds	Within 30–45 min drive of the project. Existing food and transport facilities for workers.
Ellamara Giants Creek	0	Approximately 15 beds	Within 45 min drive from the Project. Self-contained facilities.
Brightlands Living – Muswellbrook	0	450 beds (proposed), however, distance from the Project is likely to be prohibitive	Within 90 min drive from the Project.

Source: Umwelt, 2023.

It is likely a proportion of these providers will follow through with plans to expand their accommodation offerings, especially if Lightsource bp commits to renting a proportion of beds during the Project's construction period. This AES conservatively considers **up to 40 additional beds are likely to become available to the Project** through local expansion projects.

4.2.3 Longer Term Rental Accommodation

The information presented in this section regarding rental availability is based on desktop reviews undertaken in September 2023. There is currently low rental availability in the key townships surrounding the Project area (refer to **Table 4.4**).

Table 4.4 Rental Accommodation Availability as of September 2023

Township	Rental Population	Vacancy Rate	Rental Stock Available	Stock Available to the Project (up to 5%)
Merriwa	24.1%	0.67%	7	0
Scone	27.5%	0.52%	14	1
Mudgee	30.7%	2.29%	124	0

Township	Rental Population	Vacancy Rate	Rental Stock Available	Stock Available to the Project (up to 5%)
Gulgong	23.3%	0.56%	7	0
Wollar	23.8%	N/A	0	0
Kandos	23.5%	1.43%	11	0
Muswellbrook	34.8%	0.78%	46	2
Denman	21.6%	0.45%	4	0
Total (excluding NSW)			**213**	**3**

Source: (Real Estate Investor, 2023).

With respect to houses available for rent and their contributions to this accommodation framework:

- It is assumed that approximately three workers per rented house may be housed in each rental property as house-sharing is common across rosters and most homes in the area are three or four bedrooms.
- It is recommended that Lightsource bp avoid accessing more than 5% of available rental homes in any locality to avoid displacing lower income households or increasing rental prices.
- Therefore, a **maximum of 3 homes, housing approximately 9 workers**, are likely to be available to the Project construction workforce.

4.2.4 Temporary Workforce Accommodation Facility

On-site accommodation that utilises temporary or demountable accommodation is not yet commonly used in the surrounding areas, although stakeholder engagement and EIS documentation from proximal projects suggests this is changing. While the region has a history of some temporary workforce facilities designed to house mining and infrastructure construction workforces, there are currently no temporary workforce accommodation facilities with the capacity to house workforces associated with the Project.

However as of November 2023, Lightsource bp has signed a Memorandum of Understanding (MOU) with a local developer who are proposing the development of 500 fully furnished, self-contained ensuite units within the township of Merriwa. Lightsource bp has an option in place to rent up to 300 rooms during the construction period of the Project, with potential to increase the number of rooms if required. The commencement of this facility is being coordinated between the two parties to align with the ramp up of workforce numbers onsite at Goulburn River.

4.2.5 Accommodation Overview Summary

Table 4.5 provides an overview of accommodation availability and likely distribution based on the accommodation profiling conducted for the Project. It reflects accommodation composition at a peak workforce of 350, with accommodation composition changing over the course of construction to reflect fluctuations in on-site workforce. Accommodation modelling has been based on conservative estimates and assumes all proposed proximal projects will proceed and at the times indicated in their EIS or website documentation. Access to accommodation may differ depending on changing timelines and local conditions and is likely to be higher than the figures modelled in the following table.

As shown in **Table 4.5** (and explained in **Section 5.2.1**), it is predicted that approximately 35 workers are likely to live locally and remain in their own homes. Further, approximately 14 rooms of existing short-term accommodation and 40 rooms of new short-term accommodation are likely to be available to construction workforce during peak construction, without materially infringing on short-term accommodation access for other users. Additionally, up to three rental homes are likely to be available to construction workforce. The remaining workers during the peak construction phase will need to be housed in the Temporary Workforce Accommodation Facility (TWA Facility) described in **Section 4.2.4**.

Table 4.5 Accommodation Option Breakdown at Peak Workforce

Accommodation Components (assumes peak workforce of 350)	Number of Workers housed	Housing Form
Local Workforce	Approximately 35	Existing homes
Existing short-term accommodation	14	14 rooms
New short-term accommodation	40	40 rooms
Rental Accommodation	9	3 rented homes
Subtotal available beds	**Up to 100**	
Custom-built Temporary Workforce Accommodation Facility	Up to 300[7]	Temporary Workforce Accommodation Facility
Total available beds	**Up to 400**	

Source: Umwelt, 2023.

4.3 Objectives/ Intended Social Outcomes

The key objectives of the accommodation framework for the Project are to:

- Maximise use of a temporary workforce accommodation facility to meet workforce needs in a location near to construction activities.
- Ensure accommodation is accompanied by sufficient recreational opportunities and health services to avoid negative impacts on existing communities.
- Prioritise sustainable use of local accommodation a maximum of 75 minutes-drive or 100 km from the development.
- Reduce or avoid upward pressure on housing prices, rental costs and demand that may result from development activities.
- Prioritise procurement and employment of local business and workers to reduce impact on housing demand.

These objectives inform the proposed actions and mitigation strategies in the following section.

[7] Note that Lightsource bp currently has a MOU in place with the Merriwa TWA Facility developer to lease 250 rooms during Project construction. There is potential to expand this number should additional rooms be required.

4.4 Accommodation Actions and Mitigation Strategies

The actions in **Table 4.6** are proposed to prioritise the use of local accommodation options for the Project planning and construction phase of the development.

Table 4.6 Accommodation – Implementation Actions and Objectives

Aspect	Mitigation/Management Objective	Development Phase				Responsible Party			Implementation Actions
		Early Works Construction	Main Works Construction	Operations and Maintenance	Decommissioning	Lightsource bp	EPC Contractor	All staff	
Short-term accommodation availability	Avoid placing unsustainable pressure on existing short-term and tourism accommodation and 'crowding out' other visitors.	X	X			X	X		Ensure sufficient access to a TWA Facility to avoid unsustainable pressure on existing short-term accommodation and rental accommodation in the social locality. See **Section 4.2.1** for justification.
	Avoid placing unsustainable pressure on existing short-term and tourism accommodation and 'crowding out' other visitors.	X	X			X	X		Work with local accommodation providers to provide advanced notice of accommodation requirements and anticipate timing of key tourism events.
									Engage with local stakeholders including local councils and accommodation providers to communicate upcoming accommodation and housing demand and to monitor, pre-empt and address accommodation issues as they arise. This includes planning to avoid times of peak demand due to local events and activities.
Workforce population impacts	Avoid placing unsustainable pressure on existing health systems due to workforce population influx.		X			X			Ensure provision of a telehealth service for construction workforce is delivered for all workers associated with Project construction.
Rental accommodation availability	Avoid placing inflationary pressures on rental prices or displacing other residents of the social locality by competing for limited rental housing.		X			X	X	X	Ensure sufficient access to a TWA Facility to avoid unsustainable pressure on existing short-term accommodation and rental accommodation in the social locality. See **Section 4.2.3** for justification.
Local workforce	Maximise local procurement and employment opportunities to reduce the need for accommodating a non-local workforce.	X	X	X	X	X	X		Follow the actions identified in the employment framework (See **Table 5.4**).
New accommodation availability	Encourage the development or expansion of existing accommodation providers where appropriate.	X	X			X	X		Consider partnering with or funding existing local accommodation providers to expand their accommodation capacity. See **Table 4.3** for a list of providers currently considering expansion.
Traffic management and workforce fatigue management	Reduce individual workforce traffic impacts and reduce worker fatigue and road safety risk.	X	X			X	X	X	Provide shuttle buses from key short-term accommodation locations to and from the Project Site. Prioritise social procurement from local companies or social enterprises for shuttle services.
Temporary workforce accommodation facility	Meet the accommodation and catering needs of a temporary workforce while reducing impacts on existing residents and communities.	X	X			X	X		Prioritise use of a new temporary workforce facility to minimise negative social and environmental impacts.

5.0 Employment and Procurement Framework

5.1 Employment and Procurement Framework Scope

The purpose of this local employment and procurement framework is to provide evidence-based recommendations to manage the local employment and procurement opportunities associated with the Project.

An effective local employment and procurement strategy ensures that local entities have full, fair and reasonable opportunity to bid for the supply of key goods or services for the Project. Therefore, outcomes of an effective local employment and procurement strategy will ideally include:

- Creation of training and employment opportunities through procurement processes, clauses and specifications in contracts. It is important to note that these opportunities may lag and trainees may not have the opportunity to benefit from the Project but will have the opportunity to benefit from future projects.
- Directly targeting harder-to-reach or more vulnerable and marginalised groups when creating employment and procurement opportunities.
- Encouragement of local economic development and growth.
- Engagement of local small-to-medium enterprises (SMEs) and social benefit suppliers, providing them with the same opportunities as other larger businesses, including the ability to engage in procurement processes.

5.2 Employment Profile - Employment and Procurement Context

The Project will generate an anticipated peak of around 350 FTE direct construction jobs, with an average of 250 FTE direct jobs from mid-2024 to 2026 (refer to **Figure 1.1** for employment histogram). Employment is likely to extend through local supply chains to fuel supply, vehicle servicing, uniform suppliers, hotels/motels, B&Bs, cafés, pubs, catering and cleaning companies, tradespersons, tool and equipment suppliers and many other businesses through Project multiplier effects.

Almost 75% of jobs in renewable energy over the next 15 years are likely to be available for labourers, trades and technicians and professionals (Briggs, Rutovitz, Dominish, & Nagrath, 2020). **Figure 5.1** illustrates the diverse range of jobs and skill sets that renewable projects require and shows the percentage breakdown of different roles on a typical solar farm project (for example, 11% of solar farm roles are for electrical trade assistants, and around 4.1% are for administrative workers).

As shown in **Figure 5.1**, electrical trade and technicians (18%), electrical trade assistants (11%) and solar roofers/ installers (9.8%) will be the largest number of jobs created.

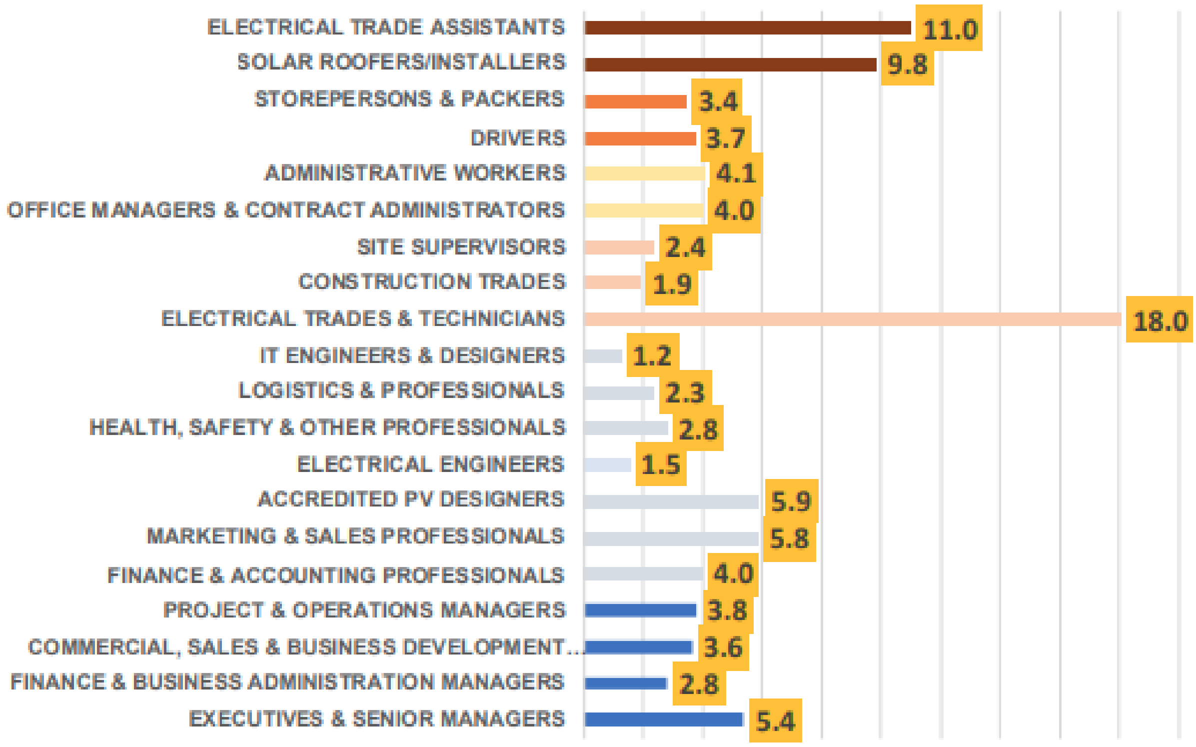


Figure 5.1 Key Occupations for Solar Farms

Source: (Briggs, Rutovitz, Dominish, & Nagrath, 2020).

5.2.1 Employment Profile and Opportunity Across the Social Locality

This section of the AES considers the existing employment profile of the social locality and assesses the degree to which jobs associated with the Project are likely to be filled by local residents. Analysis focuses on local workers employed in the construction sector or employed as trade workers and technicians, as existing research suggests these sectors and roles are most likely to benefit from jobs in renewable energy construction (Doyle, 2014). It also considers those who are currently unemployed and seeking work in the social locality, as another key potential source of workforce.

The AES tests three potential scenarios of local employment opportunities during peak construction (see **Table 5.1**), testing the likelihood of 5%, 10% or 15% of total peak workforce being derived from workers residing in the social locality.

Table 5.1 Local Employment Scenarios at Peak Construction

Local Employment Scenarios	Scenario One (5% of peak workforce)	Scenario Two (10% of peak workforce)	Scenario Three (15% of peak workforce)
Number of local people who could be employed	18	35	53

Source: Umwelt, 2023.

As **Table 5.2** shows, across Mid-Western Regional, Upper Hunter Shire and Muswellbrook LGAs there are a total of 32,696 people employed in any industry, 4,066 people employed as trade workers and technicians and 1,952 people employed in construction.

Table 5.2 Employment by Industry and Job Type Summary

	Mid-Western Regional LGA	Upper Hunter Shire LGA	Muswellbrook LGA	Total
Total Employed Workforce	11,231	6,651	14,814	32,696
Workforce Employed in Construction	942	478	505	1,952
Workforce Employed as Trade Workers and Technicians	1,998	1,152	1,466	4,066

Source: (ABS, 2021).

Considering those in the labour force who are currently unemployed, there are a total of 1,088 unemployed people across the three LGAs who are looking for either full-time or part-time work (see **Table 5.3**).

Table 5.3 Labour Force Status for the Social Locality

	Mid-Western Regional LGA	Upper Hunter Shire LGA	Muswellbrook LGA	Total
Unemployed, looking for full-time work	282	136	234	**652**
Unemployed, looking for part-time work	187	89	160	**436**
Total	**469**	**225**	**394**	**1,088**

Source: (ABS, 2021).

The estimated 18, 35 or 53 local workers represent 0.4%, 0.9% or 1.3% of all workers employed as trades workers and technicians, 0.9%, 1.8% or 2.7% of all those working in the construction industries or 1.7%, 3.2% or 4.9% of all unemployed people in the social localities[8].

Based on an assessment of cumulative proximal projects, stakeholder engagement and desktop analysis of local employment conditions, a 10% local employment proportion (or 35 local workers) is considered most likely. This is also the figure assumed for the preceding accommodation assessment (see **Section 4.2.5**).

5.2.2 Procurement Opportunities Across the Social Locality

The capacity for local businesses to benefit from procurement opportunities depends on both the internal processes, priorities and policy of the procuring company and the capacity and connectedness of local companies and organisations and the networks that support them (Esteves, Brereton, Samson, & Barclay, 2010). Additionally, the availability of appropriately skilled employees will need to be accounted for, as multiple projects will likely be under construction at the same time, with similar procurement and workforce needs. This is particularly relevant for the Upper Hunter Shire and Mid-Western Regional LGAs, due to their locations within the CWO REZ and the scale of concurrent renewable energy project predicted for the area.

This section of the report highlights the number of companies in each LGA, by annual turnover.
While business size and industry does not directly reflect capacity to supply goods or services to the Project, it provides an overview of local business capacity and helps to inform Project procurement strategies.

[8] These figures do not consider the applicability of the skillsets of unemployed people in the social locality.

Note also that business locations are determined by the location in which the business is registered, which is complicated by businesses which operate in multiple locations. Therefore, the following business counts do not necessarily reflect all business operations within their respective LGA.

5.2.2.1 Upper Hunter Shire LGA

As **Figure 5.2** shows, there are currently 1,838 businesses operating within the Upper Hunter Shire. The majority of these businesses are in the agriculture, forestry and fishing sector and therefore are likely to have limited opportunity to service the Project. Within the LGA, 232 businesses were in the Construction sector, making it the second largest in the LGA. 42 businesses (2.3%) are Manufacturing-based. Around 49% of Construction businesses and 54% of Manufacturers are larger businesses with an annual turnover of over $200,000, providing some opportunity for Lightsource bp to source local contractors from within the LGA.

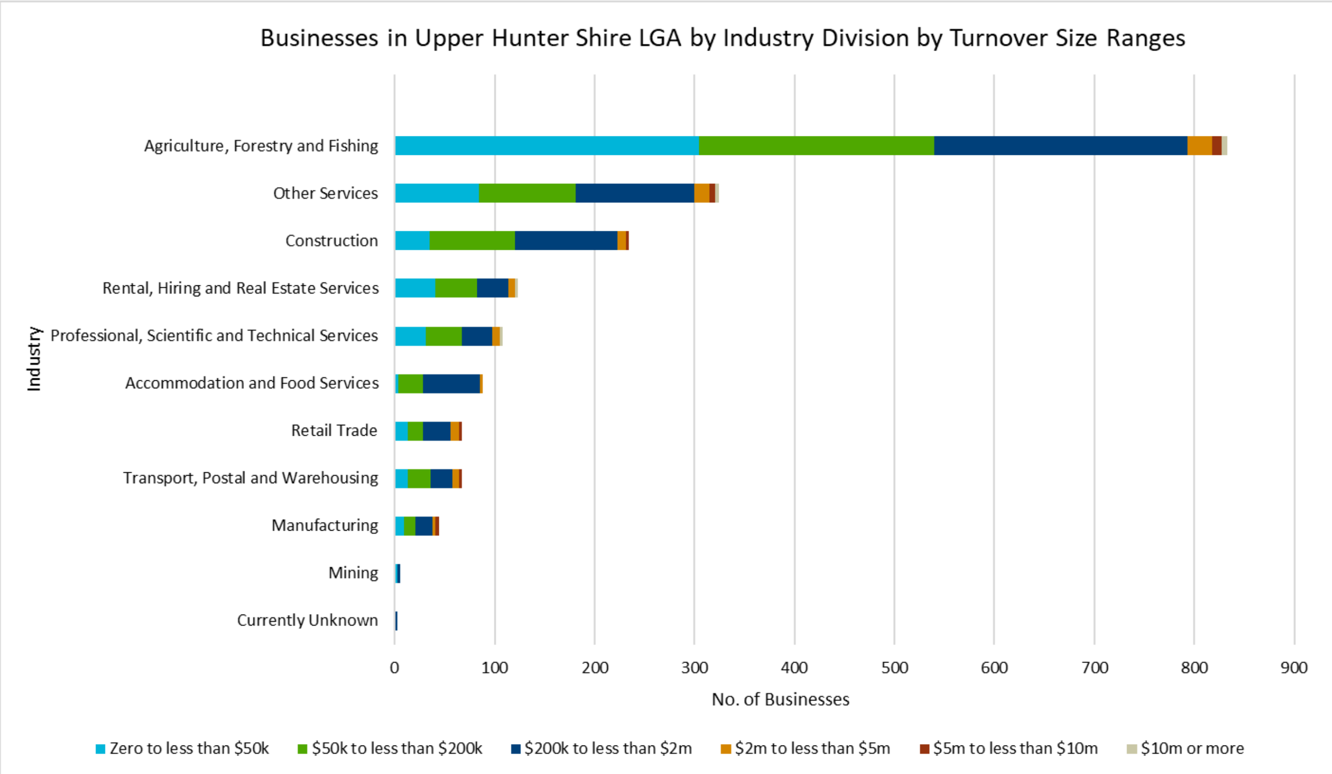


Figure 5.2 Businesses in Upper Hunter Shire LGA by Industry Division by Turnover Size Ranges

Source: (ABS, 2022).

5.2.2.2 Muswellbrook LGA

Figure 5.3 indicates that there are currently 1,067 businesses operating within Muswellbrook LGA. Like Upper Hunter LGA, the largest number of businesses relate to agriculture, forestry and fishing. Of all businesses, 117 were in the Construction sector (11%) and 33 businesses (3.1%) were Manufacturers. Around 46% of Construction businesses and 36% of Manufacturers have an annual turnover of over $200,000, providing some opportunity for Lightsource bp to source local contractors from within the LGA.

Note that Mining is Muswellbrook LGA's largest industry and employer, employing a third of the workforce (REMPLAN, 2023), however is not represented in **Figure 5.3** since virtually all mining businesses are registered outside of the LGA.

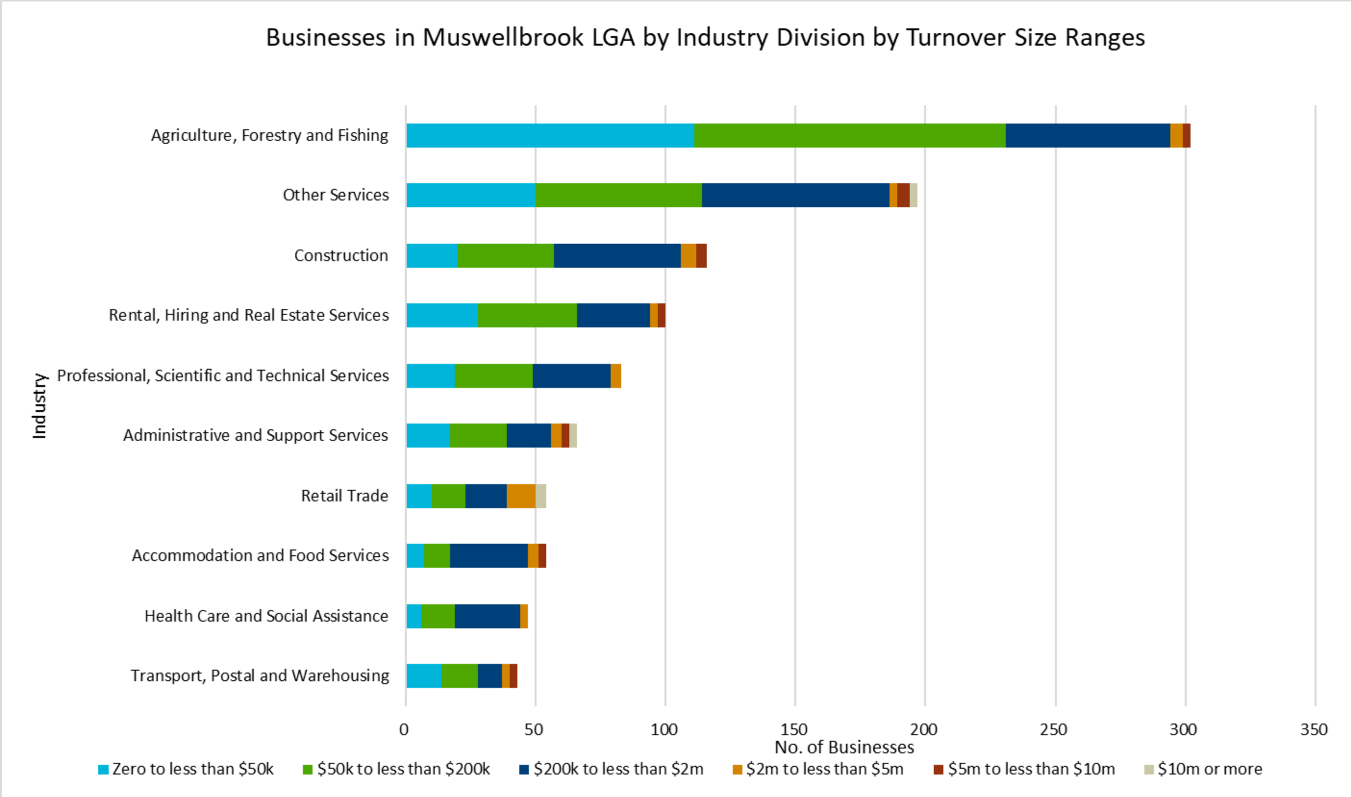


Figure 5.3 Businesses in Muswellbrook LGA by Industry Division by Turnover Size Ranges

Source: (ABS, 2022).

5.2.2.3 Mid-Western Regional LGA

As **Figure 5.4** illustrates, in the Mid-Western Regional LGA, there were 2,856 businesses operating in the LGA with over 42% of these businesses being in the Agricultural, Forestry and Fishing sector. Construction is the second largest industry by number of businesses (433), representing just over 15% all businesses in the LGA. Of these construction businesses, 42% have a turnover size of over $200,000 per year and 6% have a turnover size of over $2,000,000.

Manufacturing in the Mid-Western Regional LGA is the 9th largest industry by turnover size, with 117 businesses. 53% of these businesses have a turnover of over $200,000, while 11% have a turnover of above $2,000,000. As a result, Mid-Western Regional LGA is likely to have a larger capacity to benefit from procurement opportunities associated with the Project than Muswellbrook and Upper Hunter LGAs.

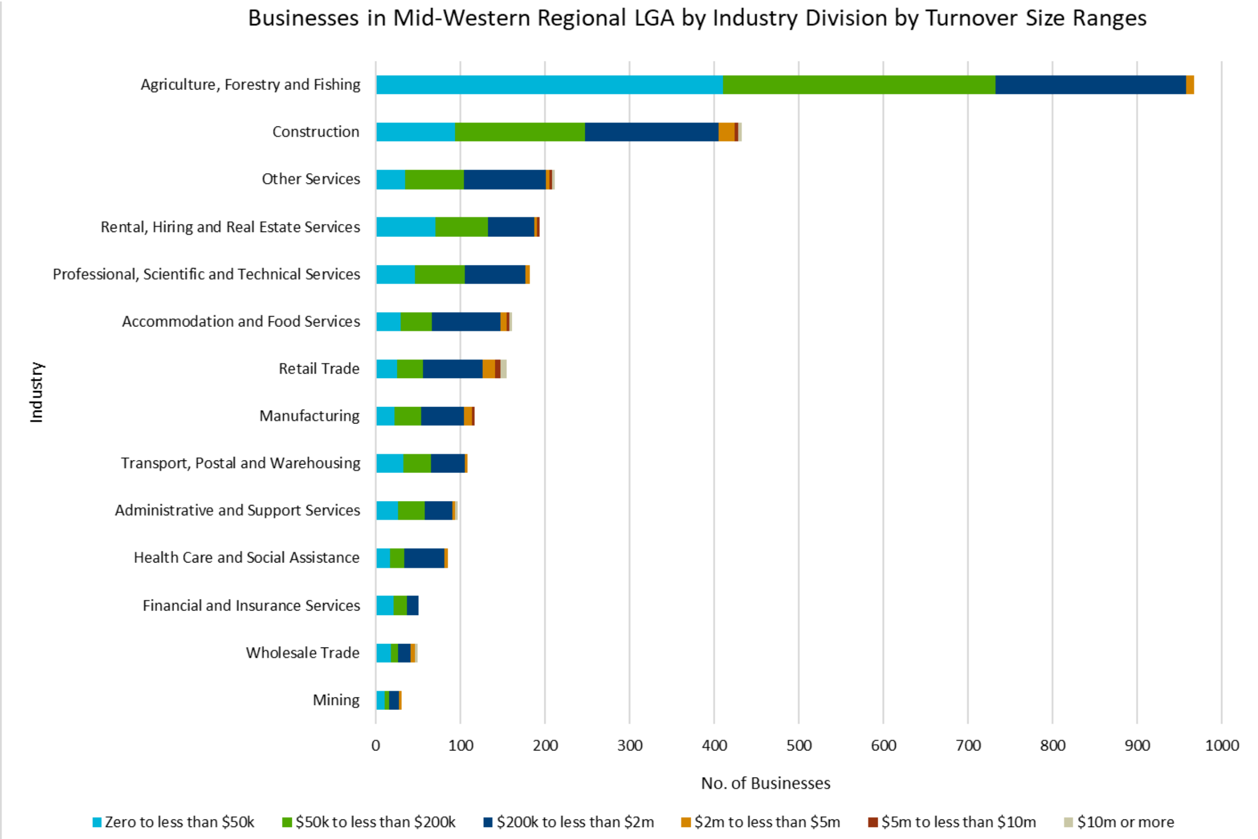


Figure 5.4 Businesses in Mid-Western Regional LGA by Industry Division by Turnover Size Ranges

Source: (ABS, 2022).

5.2.2.4 Local Procurement Summary

An analysis of existing Construction and Manufacturing businesses within the study area indicated that Mid-Western Regional LGA has the largest number of businesses with likely capability to service the Project.

Both Muswellbrook and Upper Hunter Shire LGAs are significantly smaller in terms of population and their Construction and Manufacturing capacity. While Muswellbrook may benefit from strong regional strengths in mining and related industries, Upper Hunter's existing reliance on agriculture may indicate a lower capability to benefit from Project procurement opportunities.

5.3 Objectives/Intended Social Outcomes

All local employment and procurement strategies will build on initiatives already undertaken by the renewable energy sector in enhancing sustainable and strategic procurement practice, thus contributing to building stronger communities and generating wider social benefits.

The key objectives of the employment framework for the Project are to:

- Implement strategies to target a minimum of 35 construction phase workers (representing 10% of the workforce) sourced locally (i.e., from neighbouring LGAs).

- Meet the baseline requirements and implement strategies to support achievement of the stretch goals of Merit Criteria 8 of the AEMO Tender Guidelines for regional economic development. This includes a goal of 40% of supply chain inputs coming from Australia and New Zealand during the development phase, 51% during the operations and maintenance phase and 10% of steel products and components using locally milled steel where doing so does not undermine the viability of the Project as a whole.
- Implement strategies and procurement weightings to maximise the number of sub-contractors and suppliers sourced locally.
- Generate lasting training and skills development opportunities for the region.
- Pro-actively generate opportunities for under-represented communities, including First Nations people, women, and unemployed and under-employed people.
- Transparently communicate employment and procurement opportunities to the local community and provide updates on whether objectives are achieved.
- These objectives inform the proposed actions and mitigation strategies in the following section.

5.4 Employment Actions and Mitigation Strategies

The following actions are proposed to prioritise and support local employment and procurement for the planning and construction phase of the development.

Table 5.4 Employment and Procurement – Implementation Actions and Objectives

Aspect	Mitigation/Management Objective	Project Phase				Responsible Party			Implementation Action for Consideration
		Early Works Construction	Main Works Construction	Operations and Maintenance	Decommissioning	Lightsource bp	EPC Contractor	All staff	
Local employment and procurement	Encourage local employment and procurement.	X	X	X	X		X		Establish, review and maintain a Lightsource bp Goods and Services Register database. Communicate regularly with the database via email updates or other communications method. Ensure the Goods and Services Register relates to ICN Gateway or other industry pathways. Engage with local training providers such as Blackrock Industries and Programmed to explore training and apprenticeship opportunities to maximise local employment.
Local employment and procurement	Build local familiarity and connections with Lightsource bp and the Project requirements.	X	X	X	X	X	X		Utilise Project newsletters, website, and media releases at key milestones throughout the Project development, construction and operation timeline to promote information on how local suppliers may become involved in the project. Attend and host industry forums that target local and regional business sectors to communicate employment and procurement opportunities on the projects, including: • Establish an ICN Gateway pre-construction. • Hold a "Meet the contractor" drop-in session for local businesses to familiarise themselves with the successful EPC contractor. • Schedule early ICN industry briefings in major towns around projects to give an overview of the projects and their resourcing needs. • Provide social procurement information and links to support for SMEs to respond to social procurement requirements. • Link attendees to industry partners that can assist with their tender. • Document events and register Expressions of Interest collected at these events. • Work directly with local stakeholders including the Merriwa Chamber of Commerce, Gulgong Chamber of Commerce, Regional Development Australia, Blackrock Industries, Programmed and local schools and TAFE to co-host local events to advertise employment and procurement opportunities.
Local employment and skills development	Ensure Australian entities have full, fair and reasonable opportunity to bid for the supply of key goods and services.	X	X	X		X			Include a requirement in contracts that procurement entities comply with any binding Australian Industry and Aboriginal Participation Plan (IAPP). Information and support will be offered through a workshop that outlines the AIP requirements, including procurement from local companies.

Aspect	Mitigation/Management Objective	Project Phase				Responsible Party			Implementation Action for Consideration
		Early Works Construction	Main Works Construction	Operations and Maintenance	Decommissioning	Lightsource bp	EPC Contractor	All staff	
Local employment and skills development	Collaborative approach to support pathways into training and regional employment and procurement opportunities.	X	X	X		X	X		Schedule workshops with regionally based local employment agencies to discuss opportunities and develop a collaborative approach to workforce opportunities.
Local procurement	Link local companies and organisations with larger contractors and manufacturers to support local opportunities across the entire supply chain.	X	X	X	X	X	X		Ensure supplier enquiries received via Lightsource bp Goods and Services Register are shared with solar panel manufacturers and major construction companies.
Local employment and skills development	Building local skills capacity.	X	X	X		X			Investigate partnering with local TAFEs and providers such as Blackrock Industries, Programmed and Protech to develop training programs and scholarships directly related to key skills shortages in the region, particularly electrical trades and engineering. Partnering with the Country Education Fund to provide opportunities for students to gain industry experience through work experience, internships, traineeships etc.
Local employment and skills development	Build pathways into the renewable energy sector for school leavers.	X	X			X	X		Work with local schools to establish annual excursions, vocational training partnerships and sponsorship of school awards nights.
Local employment and procurement	Contribute to the development of local supply chain and industry capability	X	X	X	X	X	X		Explore opportunities for investment and innovation in the local supply chain in the NSW renewable energy sector, including innovative responses to R&D related challenges faced by the project. LSbp is currently investigating the development of a renewable energy training centre based in Wellington.
First Nations local employment and skills development	Advertise employment and procurement opportunities broadly, with a particular focus on First Nations businesses and community members.	X	X	X		X	X		Partner with LGAs and organisations (e.g., NSW Indigenous Chamber of Commerce) to identify Certified and Registered Indigenous businesses. Engage with Aboriginal-owned companies to explore Aboriginal employment and training opportunities. Establish and maintain a register of key communication channels, key contacts and mechanisms for engaging with relevant stakeholders and ensure consistent use of these channels throughout construction and operation of the Project. Ensure that all direct recruitment activities, procurement opportunities, workforce and service needs targeting Aboriginal and local community members are visible through multiple channels, including: • LGAs • LALCs • Native Title holders or applicants • Traditional Owner Corporations • Aboriginal employment and health services • Community organisations and agencies that support opportunities for Aboriginal people.

Aspect	Mitigation/Management Objective	Project Phase				Responsible Party			Implementation Action for Consideration
		Early Works Construction	Main Works Construction	Operations and Maintenance	Decommissioning	Lightsource bp	EPC Contractor	All staff	
First Nations local employment and skills development	Increase First Nations participation and employment.	X	X	X		X	X		Partner with LGAs and organisations (e.g., NSW Indigenous Chamber of Commerce) to identify Certified and Registered Indigenous businesses. Establish processes and selection criteria that provide equal opportunity for First Nations employment and procurement. Register with organisation (e.g., Supply Nation) to enable access to their register of Aboriginal businesses. Establish and maintain a register of local and regional Certified and Registered Aboriginal businesses. Embed selection criteria to prioritise sub-contractors that are Certified and Registered Aboriginal businesses, or are owned, managed or staffed by Aboriginal people.
First Nations local employment and skills development	Facilitate pathways for Indigenous job seekers to build required skills and move into available employment opportunities.	X	X			X	X		Work with existing schools and relevant organisations (e.g., the Clontarf Foundation), to develop scholarships and training programs for Indigenous school leavers. Prioritise working with Registered Training Organisations with existing protocols and mechanisms for encouraging Indigenous trainees.
First Nations local employment and skills development	Build in participation targets for First Nations industry and community	X	X	X		X	X		Deliver Industry and Aboriginal Participation Plan (IAPP) that demonstrates commitments towards achieving baseline requirements and stretch goals for First Nations people.

6.0 Conclusion

The AES for the Goulburn River Solar Farm has provided an overview of the baseline economic, social and housing context relevant to the Project. It has identified considerable housing, accommodation, employment and procurement constraints in the social locality, linked to the Project's location. The impact of the Project has also been considered, with additional analysis to assess cumulative impacts of concurrent SSD projects proposed nearby; and has identified existing regional strengths, including regional expertise in mining and construction sectors and access to land with the capacity to host a temporary workforce accommodation facility for workers.

Data has been collected through a combination of desktop analysis of existing databases as well as direct engagement with key stakeholders. This information has been used to inform an evaluation of accommodation and employment options and opportunities.

The AES finds that a 10% local employment option (or 35 workers, assuming a peak workforce of 350 personnel) is most likely. Up to 100 workers may be accommodated in existing accommodation without creating undue strain on the existing local accommodation and housing environment (including the assumed 35 local workers who would be residing in their existing homes). These accommodation options, supplemented by the TWA Facility in Merriwa, will deliver enough accommodation to accommodate the construction workforce associated with the Project.

As detailed in **Section 4.4** and **Section 5.4**, this strategy includes several recommendations to enhance positive social outcomes and mitigate negative social outcomes for the Project. These include:

- Limiting the number of existing short-term accommodation beds accessed to no more than 14 existing short term accommodation beds across the study area on any given night. This is designed to avoid 'crowding out' effects on other accommodation users. This figure could be re-assessed if substantial reductions in local occupancy rates are identified and recorded in the social locality.
- Limit the use of existing rental accommodation as a housing source for the Project by ensuring sufficient access to custom-built temporary workforce accommodation.
- Work with local accommodation providers to provide advanced notice of accommodation requirements and anticipate timing of key tourism events.
- Consider partnering with or funding existing local accommodation providers to expand their accommodation capacity.
- Establish, review and maintain a Lightsource bp Goods and Services Register database and make this available to head contractors to support local procurement.
- Utilise Project newsletters, website and media releases at key milestones throughout the Project development, construction and operation timeline to promote information on how local suppliers may become involved in the project.
- Promote and fund Apprenticeships and Traineeships as a key employment strategy and work with regional employment agencies, Training Services NSW, education providers and Group Training Organisations to develop strategies to enable apprentices to access experience across different infrastructure projects.

This AES has identified substantial opportunities to house the anticipated construction and operational workforces, employ local workers, and procure local goods and services while also maximising social benefits to communities and reducing potential negative impacts. Proactive management and monitoring of outcomes will be achieved through post-approval management strategies and mechanisms, as outlined in this report.

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