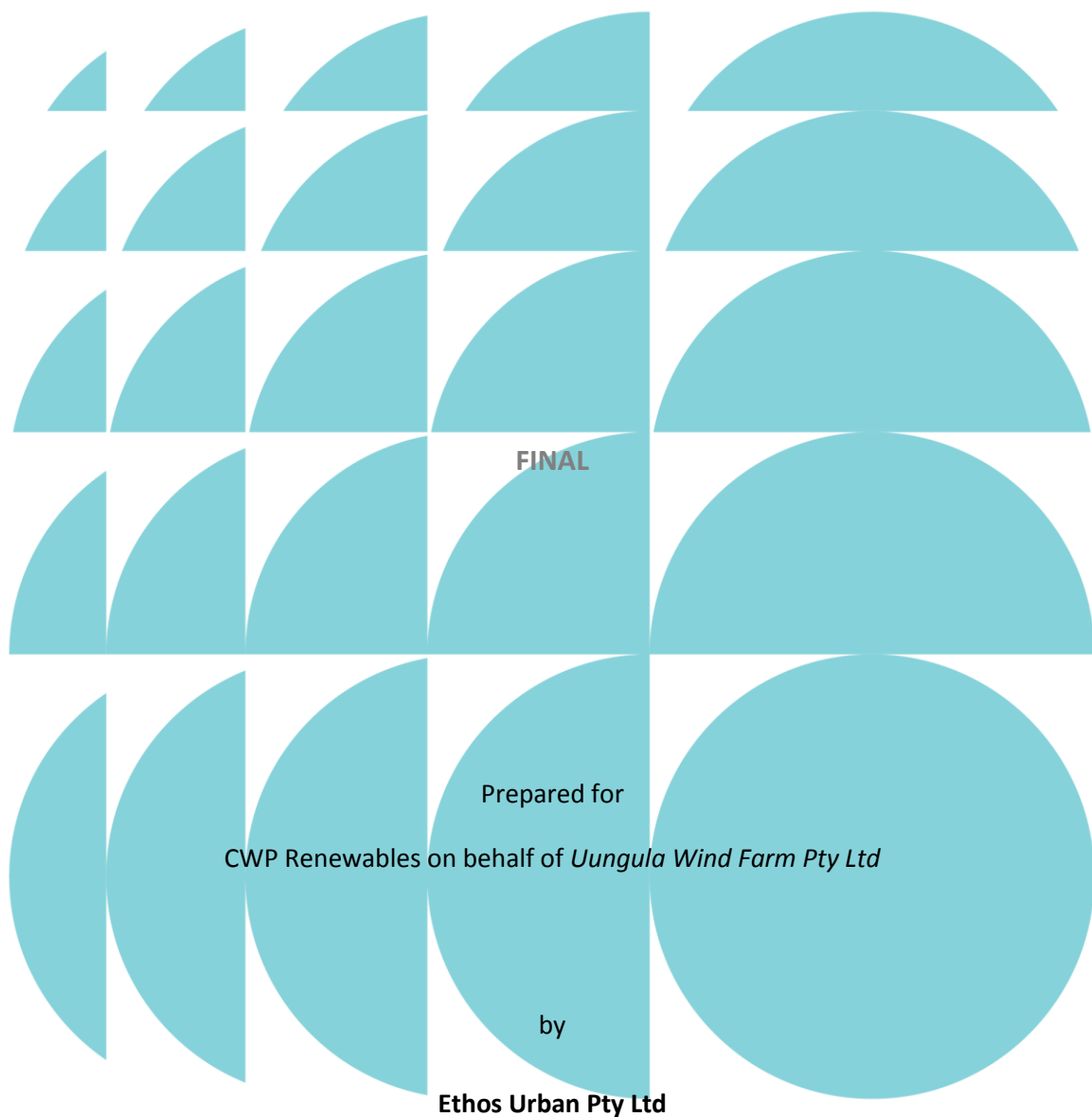


Environmental Impact Statement
Uungula Wind Farm

Appendix V: Economic Impact Assessment (Ethos Urban, 2020)

May 2020

Uungula Wind Farm Economic Impact Assessment



March 2020

Authorship

Report stage	Author	Date	Review	Date
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Disclaimer

Every effort has been made to ensure the accuracy of the material and the integrity of the analysis presented herein. However, Ethos Urban accepts no liability for any actions taken on the basis of the contents of this report.

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EXECUTIVE SUMMARY

CWP Renewables, on behalf of *Uungula Wind Farm Pty Ltd*, have commissioned Ethos Urban to prepare an Economic Impact Assessment (EIA) for the proposed Uungula Wind Farm development to be located on an 11,000ha site between Wellington and Mudgee in the Orana region of NSW.

The installed capacity of the wind turbine generators is expected to be approximately 400 Megawatts (MW). The Uungula Wind Farm will comprise a maximum of 97 wind turbine generators, with a tip height of up to 250 metres.

The wind farm will be located across a number of farming properties and, subject to planning approval and financing, is expected to be fully operational by 2024.

The main findings of this EIA are summarised as follows.

Regional Economic Context

- 1 The Study Area (Dubbo Regional Council) has a resident population of around 53,240 persons in 2018, which is projected to increase to 56,700 persons by 2036.
- 2 The Study Area currently has a relatively low unemployment rate of 2.0% compared to 4.5% for NSW (March 2019). This relatively tight labour market may, if not well managed, have implications in terms of labour supply for the construction phase of the Project, particularly with regard to competing seasonal labour requirements (harvesting, tourism etc) and concurrent infrastructure projects in the region. Note, Wellington has a current unemployment rate of 3.6% with 140 persons unemployed.
- 3 The Study Area's occupational, industry and business structure indicate a good base exists to service the needs of the Project, including approximately 2,770 construction-related workers (based on occupation) and 1,200 construction and transport businesses.
- 4 Wellington (population: 4,080) is the closest township to the proposed wind farm and would provide some support services including accommodation and worker convenience needs. Most the project's requirements would be supported by Dubbo (population: 38,400) as the regional service centre for mid-western NSW. Dubbo has a healthy supply of accommodation options, retail and entertainment services, and medical services, as well as a range of business geared to servicing large civil construction projects. A limited level of project support services could also be sourced from the townships of Gulgong and Mudgee, located to the east of the proposed wind farm site in the Cudgegong Valley.

Economic Impact Assessment

- 5 The Uungula Wind Farm project will involve significant investment during the construction phase and will support 250 direct and 400 indirect Full Time Equivalent (FTE) positions spread over the 24-30 month construction period. Once operational, 12

direct and 35 indirect FTE jobs will be supported by the facility, including approximately 19 FTE positions in the Study Area.

- 6 Allowing for the Project to be carefully managed around the region's peak times for harvesting, tourism etc, and having regard for potentially concurrent infrastructure projects, accessing adequate labour supply should not present a major issue for the Project, noting that most existing and planned infrastructure projects in the Study Area are likely to be completed prior to the construction phase of the Uungula Wind Farm project commencing (late 2021). The peak local employment requirement for the Project (125 FTE positions) represents less than 2% of workers occupied in construction-related activities in the Study Area.
- 7 Competing projects may include a number of proposed solar farms and civil infrastructure projects (airport, hospital, university etc) in the Study Area. However, most of these projects will have been completed by the time the Uungula Wind Farm project enters the construction phase.
- 8 The Uungula Wind Farm project will provide significant participation opportunities for businesses and the labour force located in the Study Area, having regard for the good match of skills and resources available – especially noting many local workers and businesses will have gained skills and experience from other renewable energy projects in the region. In this regard, organisations such as Industry Capability Network might be involved in ensuring maximum local inputs are secured, which would be in addition to the proponent's own local sourcing initiatives.
- 9 The 'external' project labour requirement would be expected to generate an accommodation requirement for 125 project workers at the peak of the Project. This represents only 12% of total commercial accommodation rooms available in the major establishments in the Study Area and would provide a boost to local accommodation operators (especially in Wellington), noting that room occupancy rates are only approximately 55% across the region. Other accommodation providers, such as small-scale hotels/motels, caravan parks, B&Bs and private households, are also likely to benefit from the Project.
- 10 Non-local construction workers living in the Study Area would be expected to inject approximately \$5.6 million in additional spending to the regional economy over the construction phase, supporting approximately 28 FTE jobs in the service sector.
- 11 Agricultural land use will only be marginally affected by the Project, with existing farm activities generally continuing as normal around the wind farm infrastructure.
- 12 Ongoing economic stimulus associated with the operation of the wind farm through financial returns to host landowners and adjacent neighbours, local wage spending associated with new jobs and net rates returns to Dubbo Regional Council is estimated at approximately \$180 million over 30 years (adjusted for CPI @ 2.5%).
- 13 Additional community benefits include the potential for the community to directly invest in the wind farm. Host landowner properties will also benefit from the Project through the construction of new internal roads (90 km) which increase internal agricultural

efficiencies as well as reduce bushfire risks and decrease the likelihood of loss of buildings, machinery, livestock, fencing etc.

- 14 The Project has the capacity to supply sufficient clean energy to power approximately 170,000 homes and, in the process, to reduce CO₂ emissions by 1.1 million tonnes per year.

Table A provides a summary of key economic benefits arising from the construction and operation phases of the 400 MW Uungula Wind Farm development.

Table A: Uungula Wind Farm (400 MW) – Key Economic Benefits

Construction Phase	
Item	Value
Capital Investment	TBC
Construction-related employment (direct and indirect)	650 FTE jobs
Local wage spending stimulus	\$5.6 million
Operational Phase (30 years)	
Ongoing employment (direct and indirect)	47 FTE jobs
- Ongoing Study Area employment (direct and indirect)	19 FTE jobs
Economic Stimulus in the Study Area (over 30 years)	\$182.2 million
- Local economic stimulus (payments to host and neighbouring landowners, acquisitions and new wage spending)	\$169.2 million
- Net rates return to Council	\$13.0 million
Sources:	CWP Renewables; Ethos Urban; ABS Input-Output Tables; ABS Average Weekly Earnings and ABS Household Expenditure Survey. Figures rounded.

INTRODUCTION

Background

CWP Renewables, on behalf of *Uungula Wind Farm Pty Ltd*, have commissioned Ethos Urban to prepare an Economic Impact Assessment for the proposed Uungula Wind Farm development to be located approximately 14km east of Wellington, NSW in the Central-West Renewable Energy Zone (REZ).

The capacity of the wind turbine generators to be installed is estimated at approximately 400 Megawatts (MW). The Uungula Wind Farm will comprise up to 97 wind turbine generators, with a tip height of up to 250 metres.

The Uungula Wind Farm will be developed in an area of approximately 11,000ha, comprising number of individual farming landholdings. Subject to successful development approval and financing, it is anticipated the wind farm could commence construction by late 2021 and be fully operational by 2024.

Objectives

The objectives of this study are:

- To highlight likely local and regional economic benefits arising from the Project, and
- To identify potential impacts associated with the Project.

This Report

This report contains the following chapters:

- Chapter 1: **Project Context**
Presents a description of site location, project components and staging, and definition of the project's Study Area.
- Chapter 2: **Regional Economic Profile**
Presents an overview of population, labour force, occupational structure, industry structure, business structure, and township services, including an audit of commercial accommodation capacity.
- Chapter 3: **Economic Impact Assessment of Proposed Project**
Presents an assessment of the economic impacts of the proposed development, including investment, employment, cumulative effects, business participation, local wage stimulus, impact on accommodation, impact on agricultural activities, financial returns to landowners, Council and community benefits, environmental benefits, and potential tourism-related opportunities.

1 PROJECT CONTEXT

1.1 Site Location

The proposed Uungula Wind Farm is located approximately 14km east of Wellington and approximately 60km south-east of Dubbo, in the Orana region of NSW.

The subject site is approximately 11,000ha in size and covering number of individual landholdings, with this land currently used for farming purposes (sheep, cattle and goat grazing) under the Rural Zone. It is estimated that less than 10% of the site will be utilised for permanent wind farm infrastructure.

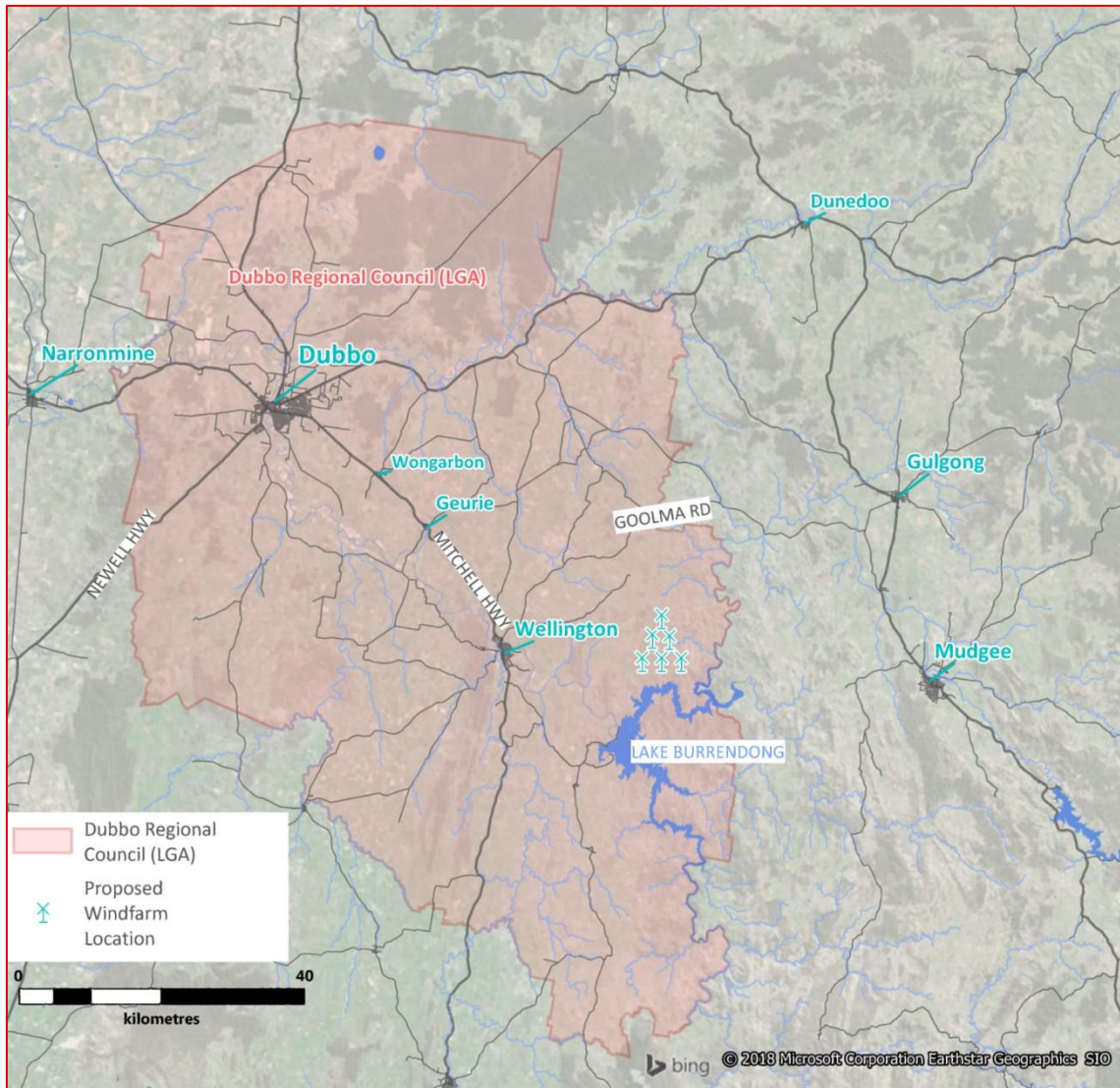
1.2 Study Area

The Study Area for the Project is defined as the Dubbo Regional Council Local Government Area, created through the merger of the City of Dubbo and the Wellington Council in 2015. The Study Area will host all the wind turbine generators, with most economic benefits likely to accrue in this area.

To an extent, benefits are also likely to be generated for the broader region, including specific townships such as Mudgee and Gulgong to the east and Orange to the south in view of their strong industrial bases.

This Study Area and broader region is illustrated in Figure 1.1.

Figure 1.1: Uungula Wind Farm Study Area and Broader Region



Source: Ethos Urban

1.3 Project Description

The proposed Uungula Wind Farm (the Project) is located in the Central-West Renewable Energy Zone (REZ), within the Dubbo Regional Council Local Government Area, approximately 14 km east of Wellington, NSW.

Project elements are summarised in Table 1.1, while Figure 1.2 provides an overview of the preliminary site layout.

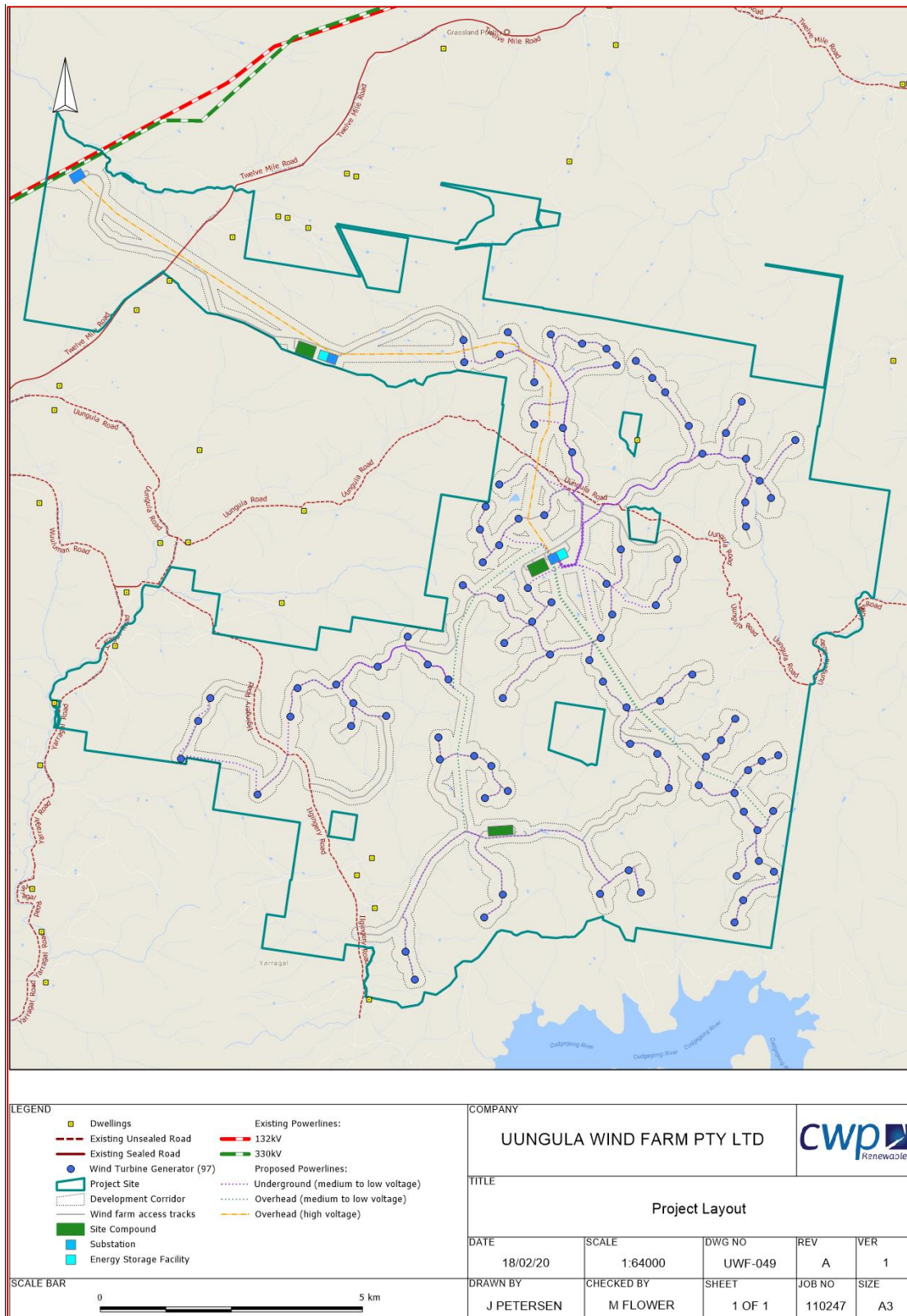
Table 1.1: Uungula Wind Farm - Project components and approximate dimensions

Project Components and Infrastructure	Approximate Dimensions	Quantity
WTGs		
WTG height	Up to 250 m	97
Rotor diameter	170 m	
Uppermost blade tip	250 m	
Lowermost blade tip	40 m – 80 m	
Tower (hub) height	125 m – 166 m	
WTG foundations	27 m diameter	
ESF		
Compound	150 x 150 m	1
Ancillary Infrastructure		
Hardstands	50 x 40 m	97
Internal Roads and drainage	9 m x 90 km	N/A
Substations	Up to 220 x 160 m	Up to 3
Operations and Maintenance (O&M) Compounds	100 x 100 m	2
Overhead transmission lines (high voltage)	12 km external overhead cables (i.e. high voltage transmission lines from the Substations to the grid connection point) with easement width approximately 45-60 m.	N/A
Overhead transmission lines (medium to low voltage)	15 km internal overhead cables (i.e. transmission lines from the WTGs to the Substations) of easement	N/A

Project Components and Infrastructure	Approximate Dimensions	Quantity
	width approximately 30 m.	
Permanent Meteorological Masts (concrete footings for mast and guy wires)	Nine footings of 1 m ² per mast	6
Underground transmission lines (medium to low voltage)	3 m x 90 km	N/A
Earthworks for permanent infrastructure (roads / hardstands) and for temporary facilities	Subject to final design	N/A
Temporary Facilities		
Concrete (or asphalt) batching plants	50 x 100 m	3
Rock crushing facilities	50 x 100 m	3
Site compound and office	300 x 200 m	2
Stockpiles and materials storage compounds	Subject to construction requirements	
Temporary Field Laydown Areas	Subject to construction requirements	N/A
Temporary Meteorological Masts (concrete footing for mast and guy wires)	Nine footings of 1 m ² per mast	12

Source: CWP Renewables

Figure 1.2: Uungula Wind Farm Site Layout and Surrounds



Source: CWP Renewables

1.4 Policy Context

Federal and State policy are important factors in influencing demand and investment in the renewable energy sector, as noted below.

Paris Climate Accord

The Paris Accord is a comprehensive international climate agreement to which Australia is a party. The Accord provides a framework for participating nations to set themselves nationally determined contributions (NDCs), beginning in 2020, with review at five-year intervals. The agreement sets out a global consensus to limit temperature increases to below two degrees Celsius when compared to pre-industrial levels; an additional goal is to maintain this increase at less than one and a half degrees Celsius. NDCs do not have any set lower limit but are required to progress over time (beginning with the intended NDC pledged during the Paris conference), and to be 'ambitious'. Australia's current targets are a reduction in emissions by five percent from 2000 levels by 2020, and by 26-28 percent below 2005 levels by 2030.

Federal Renewable Energy Target

The Renewable Energy Target (RET) is an Australian Government scheme designed to reduce emissions of greenhouse gases in the electricity sector and to encourage the additional generation of electricity from sustainable and renewable sources.

The RET works by allowing both large-scale power stations and the owners of small-scale systems to create certificates for every megawatt hour of power they generate. Certificates are then purchased by electricity retailers who sell the electricity to householders and businesses. These electricity retailers also have legal obligations under the RET to surrender certificates to the Clean Energy Regulator, in percentages set by regulation each year. This creates a market which provides financial incentives to both large-scale renewable energy power stations and to the owners of small-scale renewable energy systems.

In June 2015, the Australian Parliament passed the Renewable Energy (Electricity) Amendment Bill 2015. As part of the amendment bill, the large-scale RET was reduced from 41,000 GWh to 33,000 GWh in 2020, with interim and post-2020 targets adjusted accordingly.

NSW Renewable Energy Action Plan 2013

The NSW Renewable Energy Action Plan (2013) provides a framework to enable the State to meet the RET target through a range of 24 actions associated with:

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

While the NSW Government does not mandate a specific renewable energy target for the State (unlike Victoria and Queensland which have 50 per cent renewable energy targets by 2030), it does have an aspirational target of zero net emissions by 2050.

The NSW Renewable Energy Action Plan Implementation Report was published in December 2018, with the report all 24 actions had been implemented.

NSW Renewable Energy Zone

The NSW Government recently announced plans to create its first “renewable energy zone”, seeking to attract 3,000 MW of investment in the state’s central west (which will cover the area in which the Uungula Wind Farm is to be located) in order to accelerate the state’s efforts to attract cheap wind and solar to replace NSW’s ageing coal-fired power stations. The NSW Government will ask the market for Expressions of Interest to invest in NSW Renewable Energy Zones, starting with a 3,000 MW pilot Renewable Energy Zone in the State’s Central-West.

This pilot Renewable Energy Zone would produce enough energy to power up to 1.3 million homes each year. The NSW Government will set up a dedicated Renewable Energy Zone body that will bring together investors and undertake early planning so benefits for local communities are maximised. Where appropriate, the NSW Government will change the regulatory settings to incentivise generators to cover part of the cost of building new transmission for Renewable Energy Zones.

1.5 Summary

- 1 CWP Renewables are proposing the construction of the 400 MW Uungula Wind Farm near Wellington, in southern NSW. The facility will be located across 11 properties and is likely to provide economic benefits to businesses and communities located in the Dubbo Regional Council area (i.e. project Study Area), and townships further afield.
- 2 Subject to planning approval by the NSW Department of Planning and Environment and project financing, it is anticipated construction of the wind farm could start in late 2021, and the facility may be fully operational by 2024.
- 3 The NSW Government has recently flagged setting up a Renewable Energy Zone in the State’s central-west, which covers the area in which the Ungula Wind Farm is to be located. This initiative is aimed at providing more certainty for the sector, especially with regard to the transmission network, and in doing so stimulate investment.
- 4 To obtain planning approval for the Project, the proponent has undertaken a comprehensive range of studies and investigations, guided by NSW Secretary’s Environment Assessment Requirements (SEARS) and the Federal Environmental Protection and Biodiversity Conservation Act. An Environmental Impact Statement is currently being prepared, which will be publicly exhibited in 2020.
- 5 The following chapters identify the potential economic impacts arising for businesses and communities located in the Study Area, associated with the Project. These impacts are described and quantified for both the construction and operational phases of the Project.

2 REGIONAL ECONOMIC PROFILE

2.1 Population and Demography

The population of the Study Area (Dubbo Regional Council) totalled approximately 53,240 persons as of June 2018, underpinned by a population of 38,390 persons in the regional centre of Dubbo. The next largest area is Wellington ABS Statistical Area 2 (SA2) containing 9,460 persons, with no other township/settlement in the Study Area having a population in excess of 800 persons in 2018.

As Table 2.1 shows, over the period 2018-2036 population levels in the Study Area are expected to expand by 0.4% per annum (pa), or +3,460 persons over the period. Note, due to the amalgamation of Dubbo LGA with Wellington LGA, smaller area population projections are not currently available.

Table 2.1: Population – Study Area, 2018-2031

Location	2018 ¹	2036 ²	Change 2017-36	AAGR 2017-36
Wellington	9,460	n/a	n/a	n/a
Dubbo	38,390	n/a	n/a	n/a
Balance	5,390	n/a	n/a	n/a
Study Area	53,240	56,700	+3,460	+0.4%

Source: ¹ ABS, 3218.0 *Regional Population Growth, Australia*; ² NSW Department of Environment and Planning.

Notes: AAGR = Annual Average Growth Rate
Figures rounded

2.2 Labour Force

As of March 2019 (latest available), the Study Area had an unemployment rate of 2.0%, which is significantly below the rate for New South Wales of 4.5%. However, the unemployment rate for Wellington (SA2) was 3.6% which is closer to the State average.

As Table 2.2 shows, in March 2019 the Study Area had a labour force totalling 28,520 persons, including 570 persons who were unemployed. Wellington, with 140 unemployed persons, was responsible for approximately 25% of all unemployed persons in the Dubbo Regional Council area.

This data highlights at a broad level that labour supply is fairly tight; however, at a local level (i.e. Wellington area) there are a reasonable number of job seekers who may benefit from new employment opportunities afforded by the Project (assuming a suitable skills match), especially in Wellington.

Table 2.2: Labour Force – Study Area, March 2019

Location	Employed	Unemployed	Labour Force	Unemployment Rate
Wellington	3,740	140	3,870	3.6%
Dubbo - East	5,800	140	5,930	2.4%
Dubbo - South	10,030	150	10,180	1.5%
Dubbo - West	4,920	130	5,050	2.6%
Dubbo Region	3,460	20	3,490	0.6%
Study Area	27,950	570	28,520	2.0%
NSW	4,045,500	190,500	4,236,000	4.5%

Source: Department of Employment, Skills, Small and Family Business – *Small Area Labour Markets*, March Quarter 2019.

Note: Figures Rounded

2.3 Occupational Structure

The skills base of the Study Area is reflected in its occupational structure, as shown in Table 2.3.

ABS Census data for 2016 shows 6,920 workers or 31.3% of all Study Area workers were occupied in activities generally associated with the types of skills required for the construction of a wind farm (i.e. technicians and trades workers, machinery operators, drivers and labourers).

The Study Area's representation in these occupations is slightly higher than the State average of 29.8%, indicating a generally suitable occupational base is present to service the proposed project.

Importantly, the occupational structure of Wellington (the closest large township to the subject site) has a significantly higher proportion of workers occupied in construction-related activities with 36.3% of workers (or 420 workers) occupied as technicians and trades workers, machinery operators, drivers and labourers.

Table 2.3: Occupational Structure – Study Area, 2016

	Wellington		Dubbo		Balance of LGA		Study Area		NSW
	No.	Share	No.	Share	No.	Share	No.	Share	Share
Professionals	145	12.6%	3,309	18.3%	459	16.1%	3,913	17.7%	23.6%
Technicians and Trades Workers	175	15.2%	2,629	14.5%	338	11.8%	3,142	14.2%	12.7%
Clerical and Administrative Workers	117	10.2%	2,453	13.5%	304	10.6%	2,874	13.0%	13.8%
Managers	77	6.7%	2,061	11.4%	729	25.5%	2,867	13.0%	13.5%
Community and Personal Service Workers	249	21.7%	2,285	12.6%	289	10.1%	2,823	12.8%	10.4%
Labourers	155	13.5%	1,967	10.9%	319	11.2%	2,441	11.0%	8.8%
Sales Workers	122	10.6%	2,053	11.3%	187	6.5%	2,362	10.7%	9.2%
Machinery Operators and Drivers	87	7.6%	1,068	5.9%	186	6.5%	1,341	6.1%	6.1%
Inadequately described/Not Stated	22	1.9%	301	1.7%	44	1.5%	367	1.7%	1.9%
Total	1,149	100.0%	18,126	100.0%	2,855	100.0%	22,130	100.0%	100.0%

Source: REMPLAN, based on ABS, *Census of Population and Housing*, 2016.

2.4 Industry Structure

ABS Industry structure data for 2016 shows the Study Area has 1,880 workers directly employed in the construction sector and a further 890 workers employed in transport, postal and warehousing sector. In total, these two sectors employ 2,770 workers or approximately 13% of the labour force (the same proportion as for New South Wales).

As with occupational structure, this industry structure indicates the Study Area provides a good labour force base upon which to service the Uungula Wind Farm project.

Industry Structure data is shown in Table 2.4.

Table 2.4: Industry Structure – Study Area, 2016

Industry Structure	Wellington		Dubbo		Balance of LGA		Study Area		NSW
	No.	Share	No.	Share	No.	Share	No.	Share	Share
Health Care and Social Assistance	231	21.0%	2,857	16.16%	316	11.1%	3,404	15.7%	12.9%
Retail Trade	114	10.3%	2,071	11.71%	235	8.3%	2,420	11.2%	10%
Education and Training	100	9.1%	1,694	9.58%	290	10.2%	2,084	9.6%	8.7%
Construction	76	6.9%	1,597	9.03%	206	7.3%	1,879	8.7%	8.6%
Public Administration and Safety	145	13.2%	1,362	7.70%	211	7.4%	1,718	8.0%	6.3%
Accommodation and Food Services	112	10.2%	1,398	7.91%	137	4.8%	1,647	7.6%	7.3%
Manufacturing	29	2.6%	1,082	6.12%	151	5.3%	1,262	5.8%	6.0%
Agriculture, Forestry and Fishing	63	5.7%	458	2.59%	624	22.0%	1,145	5.3%	2.2%
Other Services	47	4.3%	844	4.77%	85	3.0%	976	4.5%	3.8%
Professional, Scientific and Technical Services	38	3.5%	775	4.38%	101	3.6%	914	4.2%	8.4%
Transport, Postal and Warehousing	44	4.0%	744	4.21%	100	3.5%	888	4.1%	4.9%
Wholesale Trade	18	1.6%	580	3.28%	76	2.7%	674	3.1%	3.2%
Administrative and Support Services	26	2.4%	519	2.94%	68	2.4%	613	2.8%	3.6%
Financial and Insurance Services	6	0.5%	341	1.93%	36	1.3%	383	1.8%	5.1%
Arts and Recreation Services	3	0.3%	286	1.62%	60	2.1%	349	1.6%	1.6%
Electricity, Gas, Water and Waste Services	8	0.7%	240	1.36%	45	1.6%	293	1.4%	1.0%
Rental, Hiring and Real Estate Services	10	0.9%	213	1.20%	24	0.8%	247	1.1%	1.8%
Mining	6	0.5%	207	1.17%	27	1.0%	240	1.1%	1.0%
Information Media and Telecommunications	0	0.0%	180	1.02%	21	0.7%	201	0.9%	2.2%
Not stated	26	2.4%	233	1.32%	26	0.9%	285	1.3%	1.4%
Total	1,102	100.0%	17,681	100.0%	2,839	100.0%	21,622	100%	100.0%

Source: REMPLAN, based on ABS, *Census of Population and Housing*, 2016.

2.5 Business Structure

One of the more tangible benefits of an investment project is the extent to which local businesses can participate in the Project, through project contracts and other service provision opportunities. ABS Business Count data for 2018 (latest available at the LGA level) shows the Study Area included 910 construction businesses and a further 290 businesses associated with transport, postal and warehousing service, with these two sectors contributing 1,200 businesses or 23% of all businesses located in the Study Area (a similar ratio to NSW).

This data is included in Table 2.5 and indicates a good presence of the types of firms that may be well-placed to service aspects of the Project. This opportunity is explored in more detail in the following Chapter.

Table 2.5: Business Structure – Study Area, 2018

	Study Area		NSW
	No.	Share	Share
Agriculture, Forestry and Fishing	1,183	23.1%	6.8%
Mining	9	0.2%	0.2%
Manufacturing	155	3.0%	3.4%
Electricity, Gas, Water and Waste Services	14	0.3%	0.3%
Construction	907	17.7%	16.0%
Wholesale Trade	149	2.9%	3.6%
Retail Trade	281	5.5%	5.7%
Accommodation and Food Services	225	4.4%	4.0%
Transport, Postal and Warehousing	290	5.7%	7.6%
Information Media and Telecommunications	7	0.1%	1.2%
Financial and Insurance Services	314	6.1%	9.1%
Rental, Hiring and Real Estate Services	433	8.4%	10.9%
Professional, Scientific and Technical Services	317	6.2%	13.1%
Administrative and Support Services	162	3.2%	4.1%
Public Administration and Safety	13	0.3%	0.4%
Education and Training	52	1.0%	1.4%
Health Care and Social Assistance	252	4.9%	5.9%
Arts and Recreation Services	51	1.0%	1.3%
Other Services	292	5.7%	4.0%
industry not Classified	26	0.5%	0.9%
Total	5,127	100.0%	100.0%

Source: ABS Business Counts, 2018

Note: Figures Rounded

2.6 Township Services Capacity

Commercial Accommodation

The ability to accommodate non-local workers (i.e. those who are not resident in the Study Area or not living within a daily commutable distance) is a key consideration for major construction projects, especially in regional and rural areas underpinned by agricultural activity and tourism that are subject to seasonal demand for labour.

As Table 2.6 highlights, the Study Area has a reasonable supply of commercial accommodation as measured by the ABS Tourism Accommodation series for the March Quarter 2016 – although most of this accommodation is located in Dubbo. This data, which identifies supply for hotels, motels and apartments with 15 rooms or more, shows the Study Area has 35 establishments, 1,010 rooms and 3,039 beds.

Room and bed occupancy rates, 54% and 30% respectively, can be considered modest (noting that this data relates to the peak summer period January-March), indicating the wind farm

project will boost the commercial accommodation sector, especially during off-peak periods. This factor is further discussed in section 3.5.

Table 2.6: Hotel, Motel and Apartments Accommodation (with 15 Rooms or more) – Study Area, March Quarter 2016

	Establishments	Rooms	Beds	Room Occupancy Rate	Bed Occupancy Rate
Wellington	2	n/p	n/p	n/p	n/p
Dubbo	33	1,010	3,090	54.1%	29.7%
Study Area	35	1,010	3,090	54.1%	29.7%

Source: ABS, *Tourism Accommodation Australia*, 2015-16

Wellington provides a good range of small and medium sized hotels and motels, capable of accommodating project workers, including:

- Bridge Motel
- Central Hotel
- Cow & Calf Hotel
- Federal Hotel
- Garden Court Motor Inn
- Grand Hotel
- Motel Mandalay
- Wellington Hotel
- Wellington Motor Inn

The Study Area also provides a range of additional options which could be used for worker accommodation, including the following:

- Caravan/ Holiday parks providing cabins, such as:
 - Wellington Riverside Caravan Park
 - Wellington Valley Caravan Park
 - Reflections Holiday Park, Cudgegong River
 - Dubbo City Holiday Park
 - BIG 4 Dubbo Parklands
 - Discovery Parks Dubbo
 - Westview Caravan Park Dubbo
 - Dubbo North Caravan Park

- Dubbo Midstate Caravan Park
- Bed and Breakfast (e.g. The River Bed & Breakfast, Wellington)
- Guest houses.

Private Accommodation

Private accommodation is often used to support construction worker needs and this could be through leasing of holiday homes and investment properties, either privately or through real estate agents. ABS Census data for 2016 indicates Wellington (SA2) has an above-average level of unoccupied dwellings;

As Table 2.7 shows, 14.6% of Study Area dwellings (505 dwellings) were unoccupied at the 2016 Census, which is well above the average for NSW at 9.9%. Shared private housing accommodation is one potential option for the wind farm project workers, and this is further explored in section 3.5.

Table 2.7: Unoccupied Dwellings – Study Area, June 2016

	No. Occupied Dwellings	No. Unoccupied Dwellings	Total No. Dwellings	Unoccupied Dwelling Share
Wellington SA2	2,945	505	3,450	14.6%
Dubbo State Suburb	13,790	1,550	15,340	10.1%
Study Area	16,735	2,055	18,790	10.9%
New South Wales	2,604,320	284,740	2,889,060	9.9%

Source: ABS, *Census of Population and Housing*, 2016

Township Services

In addition to accommodation, workers locating temporarily to the Study Area will require a wide range of other convenience services, and the Project will also need to source trade and other services from businesses located in the immediate region. The following paragraphs provide an overview of the services located in the main townships in the Study Area, as well as in towns located outside the Study Area which are likely to make some contribution to the Project (e.g. Gulgong, Mudgee).

Wellington

Figure 2.1: Wellington Town Centre



Source: Ethos Urban

Wellington, with a population of some 4,080 persons, is the closest town to the proposed wind farm (some 10km direct line distance). Situated in the Macquarie River Valley and in the shadow of the Mount Arthur Range, Wellington functions as a local service hub for surrounding agriculture aspects, as well as visitors to the Wellington Caves Complex, Lake Burrendong State Park, and Mount Arthur Reserve. In addition, two prisons are in proximity to the town: Wellington Correctional Centre and Macquarie Correctional Centre, which provide local employment.

Key services in Wellington include:

- A good range of commercial accommodation options (see above)
- Wellington District Hospital – a small regional hospital with an emergency department
- Two full-line supermarkets – Coles and Woolworths
- Entertainment & Dining – Federal Hotel, Court House Hotel, Wellington Hotel, Central Hotel Wellington and Calf & Cow Hotel; cafes/restaurants include Smoko & Lunches, Cactus Café & Gallery, Chinese and Thai food restaurants, and KFC and McDonalds

- A limited collection of commercial and financial services, including Commonwealth and NAB branches
- Fuel Supplies – Caltex, BP, Metro Petroleum
- Postal Services
- Education – two primary schools (Catholic and public), a secondary school (public) and a TAFE NSW Campus (Wellington TAFE)
- Train Station – Wellington Station is situated in the Central West line which has a daily service operating between Sydney and Dubbo.

Service industry in Wellington geared to major civil construction works is limited. Wellington Sand & Gravel (quarries/landscaping products) is most noted in this context.

The Wellington Caves complex, located some 8km south of the township, is Wellington's foremost visitor attraction. Three different guided tours are offered daily from the complex: Cathedral Cave, Garden Cave, and the Phosphate Mine. A Council-operated Holiday Park provides a range of options (camping, caravanning, park cabins etc) for visitors seeking overnight accommodation at the Caves and in proximity to Wellington Golf Club and Osawano Japanese Gardens (which are also located at the Wellington Caves complex).

The Wellington Caves Holiday Park was recently upgraded in 2017. The project included upgrades to the complex's entranceway and conference room, as well as the refurbishment of 14 high-end cabins. The Caves Complex has also recently received a grant of almost \$3.8 million from the State Government for a redesign of the visitor centre, with these works expected to be completed in April 2019.

Another visitor attraction is Lake Burrendong located around 18km south-east of Wellington. The lake is particularly popular with holiday makers in the summer months for its water skiing and fishing. A large holiday park (Reflections Holiday park) located at the Lake provides a range of accommodation options (cabins, powered sites, unpowered sites etc) for families and individuals. A Recreation Centre is also located at Lake Burrendong and caters for school camps, kids' camps etc.

Dubbo

Figure 2.2: Dubbo Town Centre



Source: Ethos Urban

Dubbo, located some 50km north-west of the subject site (approximately 50 minute drive), is the major regional centre for NSW's Central West region and accommodates a population of 38,400 persons (see previous Section 2.1). Dubbo provides significant access to major civic, education, health and commercial services for an expansive rural area comprising a network of many smaller towns.

Key services in Dubbo include:

- Wide range of commercial accommodation options (see above) – in view of the town's regional service role, as well its strategic location as the half-way point for vehicles travelling between Queensland and Victoria (via the inland route).
- Large range of retail services including the following malls/shopping centres:
 - Dubbo City Centre (anchored by Coles and Target)
 - Orana Mall (anchored by Woolworths and Big W)
 - Riverdale Shopping Centre (anchored by Woolworths and Reading Cinema).

- Large range of professional/commercial services – solicitors, accounting, conveyancing etc.
- Major banks and financial institutions
- Entertainment – parks, hotels, clubs, sports and recreational activities.
- Dubbo Airport, which accommodates some 200 passenger flights per week to and from destinations including Sydney, Brisbane, Canberra, Melbourne, as well regional centres such as Newcastle and Broken Hill. Four airlines operate from Dubbo Airport: Fly Pelican, Fly Corporate, Qantas Link and Regional Express.
- Dubbo Base Hospital – operates as the major regional hospital with emergency department for the Central West region of NSW. Recent upgrades include a \$91.3 million redevelopment in 2015 providing a new clinical services building featuring maternity and operating theatres and day surgery services, as well as additional car parking. A further \$150 million development is underway for a new clinical building which will include an emergency department, medical imaging, ambulance care services and critical care floor. Planning is also currently underway for a \$35 million Cancer Centre.
- Education – Dubbo’s network of education institutions comprises 4 tertiary institutions (Charles Sturt University, University of Sydney – School of Rural Health, TAFE Western Dubbo College and Western College); 3 private secondary schools and 3 public secondary schools; and a range of primary and early education facilities.

Dubbo has an expanded range of service industry geared to civil construction works. Key businesses include:

- John Holland (depot)
- Inland Petroleum (bulk fuel delivery)
- NACAP Depot (bespoke equipment for civil projects – roads, mining, dams etc)
- MCR Modules (portable building construction)
- EMS (depot)
- Cobra (plant and crane hire)
- Cole for Cranes (crane hire)
- Ezyquip Hire (earthmoving equipment hire)
- Rod Pilon Transport

Wongarbon

The small village of Wongarbon is located just off the Mitchell Highway, around 16km south-east of Dubbo, and has a population of approximately 610 persons, as per the latest ABS Census 2016.

Services/facilities in Wongarbron include a small primary school, a general store/post office and a pub (Ploughman's Rest Hotel).

Geurie

Geurie, another small village, is located on the Mitchell Highway some 25km south-east of Dubbo and has a population of around 480 persons (ABS Census 2016).

Services/facilities in Geurie include a primary school, a general store/post office and the Mitchell Inn pub. In addition, the village contains a swimming pool and tennis courts and is home to the Geurie Goats rugby club.

Goolma

Goolma is a small settlement with a population of approximately 100 persons (ABS Census 2016). Goolma is located approximately 40km north-east of Wellington via Goolma Road. Local services/facilities include a roadhouse, hotel, public school and recreational facilities.

Townships outside Dubbo Regional Council

Gulgong

Gulgong, a township of some 1,960 persons (ABS Census 2016) is located in the neighbouring Mid-Western Regional Council and is situated around 40km north-east of the wind farm site. Founded as a gold mining settlement, today the township predominantly functions as a service hub for local agricultural activities.

The township has a somewhat limited range of facilities and services, including:

- Commercial accommodation – 3 motels and a hotel (Prince of Wales Gulgong)
- Gulgong District Hospital – small local hospital
- Supermarkets – Supa IGA and Coles
- Cafes, bakeries, restaurants and take-away
- Commonwealth Bank branch
- Fuel supplies (Shell and BP)
- Postal Services
- Automotive Mechanics
- Entertainment (parks, hotels, clubs, sports and recreational activities – swimming pool, bowls club etc)
- Education – primary and secondary schools (both public) and a Catholic primary school (All Hallows Primary School).

- Limited industry – Macquarie Geotech (soil testing), Ace Engineering etc.

Mudgee

Mudgee, with a population of some 10,920 persons, is the regional service centre for the Cudgegong River Valley region and Mid-Western Regional Council. The township is located around 43km from the wind farm site (direct line distance) and about a 1-hour driving distance by car. While the Mudgee district is historically noted for gold mining, the township now operates as a regional services hub for local agriculture including viticulture, sheep and cattle grazing, cropping etc, as well as mining (Ulan Coal Mines).

The level of services/facilities in Mudgee is generally consistent with the township's regional service role, and include:

- A range of commercial accommodations options (hotels, motels, caravan parks etc)
- Entertainment (parks, hotels, clubs, sports and recreational activities)
- Education – primary and secondary schools (both public), and a Catholic primary school (St Matthew's Catholic School)
- Medical and emergency services (Mudgee District Hospital, police station etc)
- Supermarkets – full-line Coles and Woolworths supermarkets, as well as ALDI
- Cafes, bakeries, restaurants and take-away
- Range of commercial and financial institutions – banks, solicitors, conveyancing etc
- Fuel supplies & Automotive Mechanics
- Mechanic and Hardware supplies – Bunnings, Furney's Building & Plumbing Supplies and Supercheap Auto
- Some business with potential to service major civic projects including Coates Hire, Westrac CAT, Mid State Freight.

Additionally, Mudgee Airport operates as a regional airport within NSW's Mid-Western Region. Fly Pelican commenced passenger operations between Mudgee and Sydney in 2015 and currently operates 20 flights per week between the two destinations.

2.7 Conclusions

The key findings of this Regional Economic Profile are as follows:

- 1 The Study Area has a resident population of around 53,240 persons in 2018, which is projected to increase to 56,700 persons by 2036.
- 2 The Study Area currently has a relatively low unemployment rate of 2.0% compared to 4.5% for NSW (March 2019). This relatively tight labour market may, if not well managed, have implications in terms of labour supply for the construction phase of the

Project, particularly with regard to competing seasonal labour requirements (harvesting, tourism etc) and concurrent infrastructure projects in the region. Note, Wellington has a current unemployment rate of 3.6%.

- 3 The Study Area's occupational, industry and business structure indicate a good base exists to service the needs of the Project, including approximately 2,770 construction-related workers (based on occupation) and 1,200 construction and transport businesses.
- 4 Wellington (population: 4,080) is the closest township to the proposed wind farm and would provide some support services including accommodation and worker convenience needs. Most the project's requirements would be supported by Dubbo (population: 38,400) as the regional service centre for mid-western NSW. Dubbo has a healthy supply of accommodation options, retail and entertainment services, and medical services, as well as a range of business geared to servicing large civil construction projects. A limited level of project support services could also be sourced from the townships of Gulgong and Mudgee, located to the east of the proposed wind farm site in the Cudgegong Valley.

3 ECONOMIC IMPACT ASSESSMENT

3.1 Project Investment

Significant investment (value to be confirmed) will be required to construct the Uungula Wind Farm. The major investment cost is associated with the purchase of wind turbine generators and towers, although considerable investment is also required for civil, electrical and grid connection works. Additional investment will be required with regard to project management, planning and approvals, financing, insurance and other project costs.

3.2 Project Employment

Construction Phase

Project employment is assessed in terms of Direct jobs (i.e., site-related) and Indirect (or flow-on) jobs in the local and wider economies (i.e., jobs that are generated by the employment multiplier through the industrial and consumption effects).

Direct Construction Employment

CWP Renewables estimate a workforce requirement of 250 Full Time Equivalent (FTE) jobs over the construction phase of a wind farm project.

Construction jobs are expected to be associated with a wide-range of on and off-site activities, including:

- Structural concrete foundations
- Earthworks
- Roads and access tracks
- Fencing
- Landscaping
- Vehicle and equipment hire
- Trade services
- Security
- Office cleaning
- Waste disposal
- Building maintenance
- Foundation laying

- Electrical transformer installation
- Crane works
- Cabling
- Temporary site facilities (power, water, telecommunications)
- Transport of components/workers.

Local/ regional professional services could likely include:

- Civil engineering
- Mechanical engineering
- Environmental engineering and specialist consultants
- Employment agencies
- Electrical engineering
- Legal and financial services.

Indirect Construction Employment

In addition to direct employment, significant employment will be generated indirectly through the employment multiplier effect. By applying an industry-standard multiplier for the construction industry of 1.6 (based on ABS Input-Output tables for 'other construction'), the Project is estimated to generate an additional 400 FTE jobs over the construction period.

Indirect or flow-on jobs include those supported locally and in the wider economy (including metropolitan Sydney, regional NSW and interstate), as the economic effects of the capital investment flow through the economy. Indirect employment creation within the region would include jobs supported through catering, accommodation, trade supplies, fuel supplies, transportation, food and drink etc.

Total Construction Employment

In summary, approximately 650 FTE jobs (250 FTE direct and 400 FTE indirect) are expected to be generated by the Uungula Wind Farm project spread across the 24-30 month construction phase.

As identified earlier, the Study Area has a relatively low unemployment rate and the labour market is subject to seasonality and cumulative impacts relating to other major infrastructure projects. The level of local employment required at the peak of the Project is estimated by the proponent to be 125 FTE jobs (50% of the total project requirement).

This represents less than 2% of the Study Area's labour force who are occupied in construction-related activities (6,920 workers) and this should not present a constraint to regional labour supply. Additionally, 570 labour force participants in the Study Area are

currently unemployed (including 140 Wellington residents); therefore, the wind farm project presents new employment opportunities for these jobseekers (subject to an appropriate skill match).

Employment requirements for potentially competing infrastructure projects also need to be considered, and this factor is discussed in section 3.3.

Operational Phase

Direct Operational Employment

CWP Renewables indicate that approximately 12 FTE jobs will be supported in the Study Area on an ongoing basis through the operation of the Uungula Wind Farm (including casual contractors). Local positions would be associated with managerial and maintenance activities.

Indirect Operational Employment

A number of additional jobs will also be supported indirectly through the employment multiplier effect. By applying an industry-standard multiplier for the electricity industry of 2.9 (based on ABS Input-Output tables) to the 12 FTE direct operational and maintenance jobs, a further 35 FTE permanent jobs would be generated in the wider State and national economies, with some of these jobs generated locally through existing supply chains.

Operational-related employment is for the lifetime of the Project (i.e. at least 30 years); therefore, while job creation is relatively small, it represents new long-term employment opportunities at a local, regional and state-wide level.

For the purposes of this assessment it is assumed that 20% of indirect FTE jobs are created/supported in the Study Area. This equates to approximately a further 7 ongoing FTE positions.

Total Operational Employment

In summary, approximately 47 FTE jobs (12 FTE direct and 35 FTE indirect) are expected to be generated by the Uungula Wind Farm through its ongoing operations, with 19 FTE positions (rounded) expected to be created locally (i.e. within the Study Area) through direct and indirect impacts.

3.3 Cumulative Effects

The Uungula Wind Farm may need to compete for labour, accommodation and construction-related resources with other renewable energy and public infrastructure projects that are under-construction or are planned to be developed in the Study Area in the coming years. Discussions with Dubbo Regional Council identified the following key ongoing and planned projects which may be developed in the short-term.

Renewable Energy – Approved

- Wellington Solar – located some 2km north-east of Wellington at Wuuluman, this 174 MW plant with lithium-ion based battery (energy storage) was approved by the NSW Department of Planning and Environment in May 2018. Construction on the project commence in December 2019 according to the proponent, Lightsource BP.
<https://www.lightsourcebp.com/au/projects/wellington-solar-farm/>
- Dubbo Solar Hub – this 29 MW project comprises ground-mounted solar panels situated across two sites in proximity to Dubbo: Dubbo South and Narromine. Neoen are the project proponent and the construction phase has now been completed for both sites.
- Bodangora Wind Farm – located approximately 14km north-east of Wellington, the facility comprises 33 wind turbine generators with an installed capacity of 115 MW. The proponent, Infigen, advise that construction of the facility construction was completed in early 2019 and the operational phase has now commenced.
<https://www.infigenenergy.com/bodangora/>

Renewable Energy – Planned

- Wellington North – this 300 MW plant with substation had been proposed for a site north-east of Wellington, off Goolma Road, and 50 kilometres south-east of Dubbo. The proponent AGL has submitted Environmental Impact Study (EIS) to the NSW Department of Planning & Environment. At this stage the construction timing of this facility is unknown.
- Suntop Solar Farm – this 170 MW plant (proponent Canadian Solar Inc) is proposed for site located approximately 10km west of Wellington. The project was granted development approval in late 2018, with construction of the facility likely to commence in 2020.
- Mumbil Solar Farm – located around 16km south-east of Wellington, this proposed 178MW facility is still in the planning phase. If approved, construction would commence sometime in 2020 according to the proponent Photon Energy.
- Arthurville Solar Farm – Dubbo Regional Council have advised that a Solar Farm is planned (but not approved) for a site at Arthurville, west of Wellington.

In total, these renewable energy projects are likely to require +1,300 workers during the construction phase, according to Council. This assumes all these projects will be approved, financed and constructed.

Other Projects

Other projects with potential to compete with the proposed Uungula Wind Farm for labour and resources during its construction phase include:

- Dubbo Hospital Redevelopment – this \$35 million investment will see the development of the Western Cancer Centre at the campus. This builds on \$240 million of investment

in redeveloping Dubbo Hospital over recent years. The Western Cancer Centre is due for completion in 2021.

- Western Institute of Sport – this \$23.3 million facility, including an indoor sports stadium with basketball courts, is to be located at the Charles Sturt University Campus in Dubbo. Construction is due to start shortly, with a further stage planned in the future (subject to funding).
- Wellington Cave Visitor Centre Upgrades – The Wellington Caves Complex received a grant of nearly \$3.8 million from the State Government in April 2018 for a redesign of the visitor centre. These works have now commenced and the upgrades are expected to be completed by early 2020.
- Duplication of LH Ford Bridge in Dubbo – this project is still in the planning phase.

Summary

While a significant number of renewable energy and civil infrastructure projects are planned or underway in the Study Area, the timing of these projects is the most important consideration when assessing cumulative impacts with the Uungula Wind Farm project.

In this regard, the construction phase of the Uungula Wind Farm project is not expected to commence until late 2021. By this time, most of the construction projects listed above will have been completed, including all the renewable energy projects under construction. Additionally, the proposed solar farm projects (yet to be approved or yet to commence construction) will generally be constructed in a relatively short timeframe (6-9 months) and require significantly less labour compared to a wind farm project, such as the construction of the Uungula Wind Farm.

The Uungula Wind Farm project, therefore, is likely to add to the pipeline of renewable energy projects in the Study Area and provide new opportunities for local workers and contractors who have gained skills and experience on previous solar and wind farm projects.

3.4 Industry and Business Participation Opportunities

In terms of cost efficiencies (lower transport, labour costs etc), many large construction projects located in regional areas are, where possible, serviced from within the same region.

As identified above, the Study Area comprises 840 construction firms (which includes individual contractors) and many other businesses associated with activities likely to be required for the Project. These include transport operators, trade suppliers, vehicle and machinery hire, and repair companies, among others.

As a regional centre, Dubbo is likely to have firms of sufficient scale to compete for project contracts (major civil engineering firms) and many smaller firms which could supply fencing, machinery hire, waste disposal, electrical services and the like. Wellington is likely to provide some supporting services to the Project, including quarry materials and other small-scale construction services.

In order to maximise local business participation a number of strategies should be implemented, such as widespread advertising of contracts in local media and directly through the project's website. CWP Renewables maintains a database of potential local (and non-local) suppliers who have expressed an interest in providing services to the Project.

The Industry Capability Network (ICN) is another organisation that often plays an important business facilitation role for major infrastructure projects, such as the proposed wind farm. The ICN is an independent, non-profit organisation funded by the Federal Government to support business opportunities, including linking suppliers to project contracts at a local level through its ICN Gateway website where details of work packages are advertised.

3.5 Housing and Commercial Accommodation Sector Impacts

Information supplied by CWP Renewables indicates that up to 125 non-local staff may need to be accommodated in the region at the project's peak. These staff will comprise a range of occupations, including managers and specialist technicians. Contracts lengths will vary. These aspects highlight the need for a number of types of accommodation which would be expected to range from higher-end options for professional staff on longer-term contracts, to convenient low-cost options for those on short-term contracts.

As highlighted in Chapter 2, the Study Area has a capacity of around 1,010 commercial rooms (ABS audit of hotels, motels and serviced apartments with 15 rooms or more). Assuming each non-local worker requires individual accommodation, approximately 12% of total accommodation stock would be required at peak times to service the Project. The actual proportion is likely to be much lower on the expectation that some workers will be accommodated in smaller motels/hotels, caravan parks (cabins or powered sites), B&Bs, private rentals or with family or friends – none of these categories is included in the ABS accommodation audit. Additionally, some workers are likely to share motel rooms/cabins, private rentals etc to reduce personal costs.

ABS Tourism Accommodation data for 2015/16 shows the Study Area had a room occupancy rate of approximately 54% and a bed occupancy rate of 30% for its hotels, motels and serviced apartments (15 rooms or more) in the March Quarter, 2016 (refer to Table 2.6).

This data indicates that adequate capacity exists in the region to accommodate the numbers of non-local workers expected at the peak of the wind farm project, noting also the comments above regarding cumulative impacts. Importantly, the influx of these workers would support higher occupancy rates and revenues for local accommodation operators over the construction period, especially in the low seasons.

3.6 Local Wage Spending Stimulus

CWP Renewables estimate that 50% of construction jobs (125 jobs) are likely to be sourced from outside the Study Area, particularly specialist and management positions.

This level of employment would equate to \$10.0 million in wages (2019 dollars) on the basis that each is employed for 12 months on the Project and at an average construction wage of

approximately \$80,000 including on-costs (source: ABS Average Weekly Earnings 6302.0, May 2019).

A considerable portion of these wages would be spent within the Dubbo Regional Council area, especially in Dubbo and Wellington. An estimated \$5.6 million in wages (2019 dollars) would likely be directed to local and regional businesses and service providers during the construction period (once 25% in average income taxes are accounted for). This estimate is based on reference to the ABS Household Expenditure Survey which indicates that approximately 75% of post-tax wages are likely to be spent by workers in the regional economy in view of the wide range of goods and services available. This spending would be likely to include the following:

- Housing expenditure, including spending on accommodation at hotels, motels, caravan parks and private rental dwellings
- Retail expenditure, including spending on supermarket items, clothing, books, homewares etc
- Recreation spending associated with day trips and excursions, gaming (lottery, sports betting, etc), purchases in pubs and clubs (although noting that expenditures at restaurants is included in the retail category)
- Personal, medical and other services, such as GP fees and local prescriptions, household cleaning services, fuel, vehicle maintenance and so on.

This level of personal spending would support approximately 28 FTE jobs (rounded) in the services sector (1 job allocated for every \$200,000 of spending), including jobs in the Study Area associated with retail, accommodation, trade supplies, cafes and restaurants etc. These jobs are included in the 'indirect employment' estimates outlined in Section 3.2 above.

3.7 Impact on Agricultural Land

The impact of the Ungula Wind Farm on agricultural activity is likely to be small, due to the following factors:

- Only a small proportion of agricultural land, estimated at up to 10% of the site area, will be used for permanent infrastructure which would include, for example, internal access roads, siting of wind turbine generators, and other infrastructure requirements.
- The land is of low quality in agricultural terms and is principally used for sheep grazing associated with wool and lamb production. Grazing can continue as normal within the subject site, minus up to 10% of the land required for permanent wind farm infrastructure.
- Aerial spraying is used by some landowners. These landowners will be provided areas free from transmission lines/wind turbine generators to allow spraying to continue or be compensated for the loss of aerial spraying. Agricultural activities; therefore, are expected to be largely unaffected.

- The site can be rehabilitated to its original condition at the end of the wind farm’s operational phase when all above-ground infrastructure is removed.

It is also important to recognise efficiencies to host landowners from the Project through improved access across their properties facilitated by an estimated 90 km of new internal roads. These new access roads will also help reduce bushfire risks across these landholdings, thus decreasing the likelihood of loss of buildings, machinery, livestock, fencing etc.

3.8 Ongoing Economic Stimulus

Landowners

The Project will be making approximately \$3.0 million in annual payments to associated landholders including hosts, neighbours, and acquisitions required.

These new income streams can be particularly important in supporting the financial sustainability of some farms, especially as primary agricultural activities are not impacted upon to any great extent, as outlined above.

Securing a guaranteed 30-year drought proofed income stream, indexed to the CPI, provides farming families more flexibility in the long-term planning for their farming operations, including succession planning. Potential exists for landowners to continue to host wind turbine generators post the initial 30-year period (assuming the wind farm is not decommissioned) and this would provide income for future generations or new landowners.

Neighbour Agreements also provide ongoing stimulus to some landowners directly adjacent to the wind farm which are affected by the Project. Under the terms of these Neighbour Agreements annual payments will be provided to these landowners (indexed to CPI) for the operational lifecycle of the wind farm.

Wage Stimulus

An estimated 28 FTE permanent local jobs (direct and indirect) will be created through the Project (refer to section 3.2), and wage spending associated by these jobs will benefit local businesses and communities. The extent of retained local spending has been calculated in line with the methodology outlined in section 3.6., which shows that retained wages in the local economy from these new jobs would generate \$1.3 million in Year 1 of full operations.

3.9 Returns to Council and the Community

Council Rates Revenue

Unlike other states (such as Victoria), NSW does not currently have in place a specific legislative framework to assist in determining rates payable for electricity generating facilities.

The NSW Valuer General’s Policy No. 12 (*valuation of land used as a wind farm*) states that the value of land under lease for the purpose of a wind farm has an increased value compared to similar land without a wind farm lease – this has implications for taxes and Council rates. The

proponent has made a commitment to cover any increase in Council rates caused by the installation of wind farm infrastructure.

This increased land value is likely to result in a net increase in annual rates returns to Council from the subject site, but at no additional cost to the host landowners (who will also be benefiting from annual payments from the proponent for hosting wind turbine generators). The proponent estimates the increase in council rates is likely to be approximately \$295,000 in Year 1 of operations.

Unlike a new residential development (where Council incurs costs such as garbage collection; maintenance of parks, open space, roads, footpaths; provision of community services; etc), the cost to Council of providing resources for the wind farm site is likely to be relatively small and would be limited to road maintenance, garbage removal and the like. Therefore, an uplift in rates revenues generated from the operation of the wind farm on the subject site represents a net return to Council.

Community Initiatives

CWP Renewables is considering how to initiate and support community initiatives as part of the Project. The proponent has been in discussions with potential participants and recipients of community benefits, including a number of community organisations and Dubbo Regional Council.

The proponent is in ongoing discussions with Dubbo Regional Council regarding a community benefits fund. Generally, a fund of this type will be based on an annual payment by the operator on a 'per wind turbine generator' basis, with this payment indexed to CPI. The revenue raised can then be used to support local community groups, programs, infrastructure and services. The proponent will continue discussions with potential participants and recipients of community benefits through the development process.

Community Investment

CWP Renewables is investigating the potential for local community investment in their renewable energy projects. Community co-investment is where members of the community are invited to invest in a renewable energy project that is developed, financed and managed by a third party. Depending on the outcome of these investigations, local residents within the Study Area may be offered the opportunity to invest in the Uungula Wind Farm.

An example of how this program might work is CWP Renewables Sapphire Wind Farm project <https://www.sapphirewindfarm.com.au/community-investment>. Expressions of interests were sought from the community during the construction phase of the project, with approximately 340 community members identifying an interest and pledging \$7.5 million in investment. Due to this high level of community interest in the project, the community investment program has proceeded and pledges accepted.

3.10 National Grid Supply Benefits

The Uungula Wind Farm has the potential to provide sufficient renewable energy to support the annual electricity needs of approximately 170,000 NSW households. This annual calculation is based on:

- Annual electricity generation of 1,245,000 MWhrs / by average annual NSW electricity consumption per household of 7.3 MWhr = 170,550 households.

In a regional context, the Study Area currently contains 47,630 dwellings (refer to Table 2.7) and therefore the Uungula Wind Farm has the potential to provide the annual electricity needs of the Study Area 3.5 times over, highlighting the importance of the facility from a clean electrical generation perspective.

3.11 Environmental Benefits

Once fully-operational, the Uungula Wind Farm will result in the reduction of an estimated 1 million tonnes in carbon dioxide (CO₂) emissions on an annual basis compared to the same level of electricity generation using fossil fuels. This annual calculation is based on:

- 1,245,000 MWhrs x CO₂ savings per KWhr (0.84 tonnes) = 1,045,800 tonnes pa

This reduction on CO₂ emissions is the equivalent of taking approximately 373,500 cars off the road annually, based on an average of 14,000km travelled with CO₂ emissions of 200g/km (or 2.8 tonnes of CO₂ emissions per car pa).

3.12 Conclusions

- 1 The Uungula Wind Farm project will involve significant investment during the construction phase and will support 250 direct and 400 indirect FTE positions over the construction period. Once operational, 12 direct and 35 indirect FTE jobs will be supported by the facility, including approximately 19 FTE jobs in the Study Area.
- 2 Allowing for the Project to be carefully managed around the region's peak times for harvesting, tourism etc, and having regard for potentially concurrent infrastructure projects, accessing adequate labour supply should not present a major issue for the Project, noting that most existing and planned infrastructure projects in the Study Area are likely to be completed prior to the commencement of the construction phase of the Uungula Wind Farm project. The peak local employment requirement (125 FTE positions) represents less than 2% of workers occupied in construction-related activities in the Study Area.
- 3 Competing projects may include a number of proposed solar farms and civil infrastructure projects (airport, hospital, university etc) in the Study Area.
- 4 The Uungula Wind Farm project will provide significant participation opportunities for businesses and the labour force located in the Study Area, having regard for the good match of skills and resources available – especially noting local workers and businesses will have gained skills and experience from other renewable energy projects in the

region. In this regard, organisations such as ICN could be involved in ensuring maximum local inputs are secured, which would be in addition to the proponent's own local sourcing initiatives.

- 5 The 'external' project labour requirement would be expected to generate an accommodation requirement for 125 project workers at the peak of the Project. This represents only 12% of total commercial accommodation rooms available in the major establishments in the Study Area and would provide a boost to local accommodation operators, noting that room occupancy rates are only around 55% across the region. Other accommodation providers, such as small-scale hotels/motels, caravan parks, B&Bs and private households, are also likely to benefit from the Project.
- 6 Non-local construction workers living in the Study Area would be expected to inject approximately \$5.6 million in additional spending to the regional economy over the construction phase, supporting approximately 28 FTE jobs in the service sector.
- 7 Agricultural land use will only be marginally affected by the Project, with existing farm activities generally continuing to operate as normal.
- 8 Ongoing economic stimulus associated with the operation of the wind farm – through the financial returns to host landowners and neighbours, acquisitions, local wage spending from new jobs, and net rates returns to Dubbo Regional Council – are estimated at approximately \$180 million over 30 years (adjusted for CPI @ 2.5%).
- 9 Additional community benefits include the potential for the community to directly invest in the wind farm. Host landowner properties will also benefit from the Project through the construction of new internal roads which reduce bushfire risks and decrease the likelihood of loss of buildings, machinery, livestock, fencing etc.
- 10 The Project has the capacity to supply sufficient clean energy to power approximately 170,000 homes and, in the process, to reduce CO₂ emissions by 1.1 million tonnes per year.