TALLAWANG SOLAR FARM

Scoping Report

FINAL

July 2021

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FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
RES Australia (Pty) Ltd

Project Director:	Malinda Facey
Project Manager:	Marion O'Neil
Report No.	21139/R01
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Newcastle

75 York Street
Teralba NSW 2284

T| 1300 793 267
E| info@umwelt.com.au

www.umwelt.com.au

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Document Status

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	Name	Date	Name	Date
Final	Marion O'Neil	09/07/2021	Malinda Facey	09/07/2021

Executive Summary

RES Australia Pty Ltd (RES) is proposing to develop a solar farm in the Central West region of New South Wales (NSW), approximately 8 km northwest of Gulgong within the Mid-Western Local Government Area. The proposed Tallawang Solar Farm (the Project) will include up to 500 megawatts (MW) of solar electricity generation with a Battery Energy Storage System (BESS) of approximately 500 MW/1,000 MW-hours. The Project will further include transmission infrastructure located on the neighbouring proposed Barneys Reef Wind Farm (north of the Project) which will connect the Project to the proposed Central West Orana Renewable Energy Zone (CWO REZ) Transmission Line. RES is also the proponent for the Barneys Reef Wind Farm project.

The Project is located within the CWO REZ established under the *NSW Government's Electricity Strategy*, which has been identified as a suitable location for renewable energy projects. The Project will contribute to achieving State and Federal commitments for establishing renewable energy generation within NSW.

The Project is State significant development as defined under the *State Environmental Planning Policy State and Regional Development 2011* and will require development consent under Part 4 of the EP&A Act. RES is seeking the NSW Department of Planning, Industry and Environment (DPIE) Secretary's Environmental Assessment Requirements (SEARs) for the environmental impact statement (EIS) being prepared for the Project.

A stakeholder engagement strategy has been developed for the Project and engagement with key stakeholders has commenced. The consultation undertaken to date is outlined in **Section 4.0** and **Appendix A**. The results of the stakeholder and community engagement indicate a number of issues that will be investigated through the EIS. An analysis of the environmental constraints and opportunities have highlighted the following key issues:

- **Biodiversity** – loss or modification of terrestrial habitats due to vegetation clearing with potential for impacts to threatened species and endangered ecological communities within the Project Area.
- **Aboriginal and historic heritage** – potential for impacts to Aboriginal and/or historic heritage objects or heritage values within or in close proximity to the Project Area.
- **Visual amenity** – potential for impact to scenic landscape and character of the locality, loss of visual amenity of neighbouring properties, and potential for night lighting.
- **Land use conflict** – potential for loss of agricultural land and conflict associated with the shift in land use to energy generation.
- **Social** – potential for social amenity impacts due to land use change, changes in the local population and pressure of local facilities and services, property valuation and economic benefits associated with local employment and training for staff.
- **Economic** – potential for financial benefits to the state and local community as well as direct and indirect benefits to local services through the construction and operational phase.
- **Water (including groundwater and surface water) and soil resources** – potential for soil erosion associated with land clearing during construction and runoff from solar modules during operation, and water supply for construction and operational purposes.
- **Noise and vibration** – potential disturbance associated with increased road traffic and works during construction phase as well as noise and vibration disturbance associated with the operations of the transmission line and substations.
- **Traffic and transport** – potential for disruption to traffic due to heavy vehicle delivery of project materials and accelerated degradation of roads.

- **Cumulative impacts** – potential cumulative impacts of the currently planned, proposed and constructed wind and solar farm projects in the CWO REZ in relation to traffic and transport, visual amenity, social amenity, land use conflict and economic impacts.

The proposed approach to the assessment of these key issues is outlined in **Sections 5.1** to **5.11**. The Project layout and design will be subject to further analysis and refinement as part of the EIS process, as informed by the detailed specialist assessments and additional community and stakeholder engagement.

The EIS will accompany a development application for the Project and will include the relevant detailed technical studies to confirm the environmental and socio-economic impacts of the Project. Mitigation measures will be developed for inclusion in the EIS and will address the management of key issues and other issues identified in the assessment process.

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1.0 Introduction

1.1 Background

RES Australia Pty Ltd (RES) is proposing to develop a solar farm in the Central West region of New South Wales (NSW), approximately 8 kilometres (km) northwest of Gulgong within the Mid-Western Local Government Area (LGA) (**Figure 1.1**).

The proposed Tallawang Solar Farm (the Project) may include up to 500 megawatts (MW) of solar electricity generation with a Battery Energy Storage System (BESS) of approximately 500 MW / 1,000 megawatt-hours (MWh). RES is also proposing to develop Barneys Reef Wind Farm directly to the north of the Project.

The capital value of the Project is split between a battery storage component and solar farm component. The battery storage component is currently valued at $420 million but is yet to be confirmed. The solar farm component is currently valued at $760 million. The Project is therefore considered a State Significant Development (SSD) under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP) (threshold is $30 million).

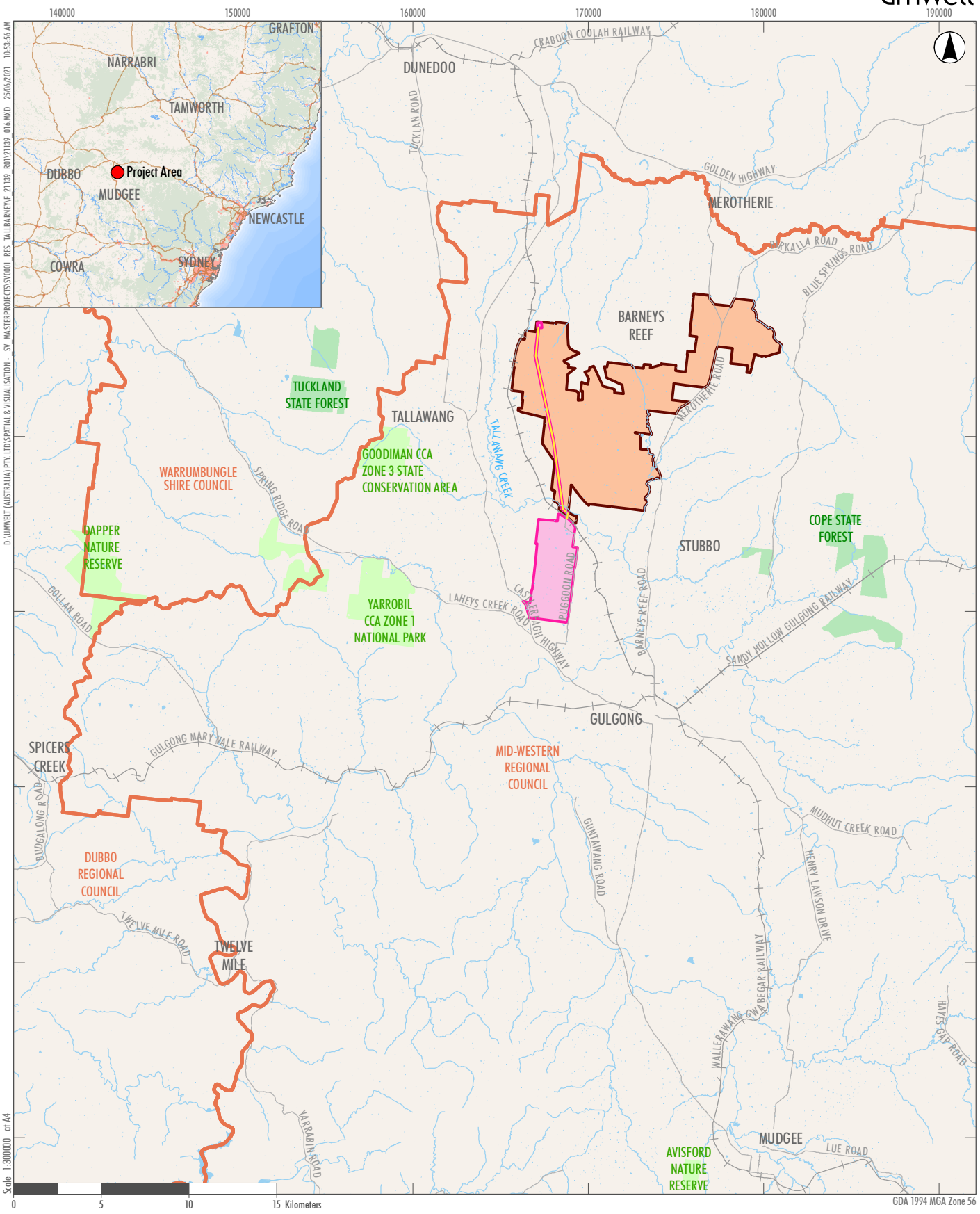
The Project lies within the Central West Orana Renewable Energy Zone (CWO REZ), which has been identified as one of five REZs under the NSW Government's Electricity Strategy. The REZs will play a vital role in delivering affordable, reliable energy to assist in replacing NSW's existing power stations as they come to the end of their operational life and are progressively decommissioned.

The Project will include the construction, operation and decommissioning of the proposed solar farm and BESS as well as associated infrastructure, including operations and maintenance buildings, civil works, and electrical infrastructure required to connect to the electricity transmission network. The Project will have access off the Castlereagh Highway.

The Project Area encompasses eight freehold properties (four for the solar farm site and four for the preferred overhead transmission line route and substation) and a number of Crown Roads ('paper roads'), covering an area of approximately 1,370 hectares (ha). These properties are primarily utilised for cropping and grazing activities.

The Project will connect to a newly constructed 330 kilovolt (kV) transmission line proposed as part of the CWO REZ, via an approximately 11 km long 330 kV overhead transmission line across four freehold properties. The overhead transmission line will connect to the 330 kV CWO REZ transmission line via a newly constructed substation on the proposed Barneys Reef Wind Farm. The alignment of this overhead transmission line will cross the adjacent railway line north of the Project. The newly constructed substation (on Barney's Reef Wind Farm) will be shared by both the Tallawang Solar Farm and Barneys Reef Wind Farm projects and will be included in both development applications and environmental impact assessments (**Figure 1.1**).

The preliminary layout, alignment of the overhead transmission line, position of the shared substation and site access requirements will be subject to further review and refinement as the environmental and social impact assessments progress.



Legend

- Tallawang Solar Farm Project Area
- Barneys Reef Wind Farm Project Area
- Transmission Line
- Local Government Area Boundary
- National Parks (NPWS Estate)
- State Forest
- Road
- Drainage Line
- Railway Line

FIGURE 1.1

Site Context and Project Area

Image Source: Data source: Geoscience Australia; Forestry Corporation of NSW (2019); DSFI (2017); NPWS Estate (2019)

1.2 Purpose of this Scoping Report

This Scoping Report has been prepared by Umwelt (Australia) Pty Limited (Umwelt) to meet the requirements of the Department of Planning, Industry and Environment (DPIE) for issue of the Secretary's Environmental Assessment Requirements (SEARS). The SEARs provide the matters for consideration for the Environmental Impact Statement (EIS) under Part 4 of the EP&A Act. This report has been prepared in accordance with the draft *Scoping an Environmental Impact Statement Guideline* (DPIE, 2017).

The Scoping Report provides the following information:

- Description of the proposed development, including the site and its surroundings
- Justification and alternatives considered for the proposed development and reasons they were not preferred
- Strategic and statutory planning framework applicable to the proposed development
- Consideration of environmental constraints and opportunities associated with the proposed development
- Discussion on the level of assessment and the proposed assessment approaches where known
- Identification of matters of concern to the community and other stakeholders
- A summary of community and stakeholder engagement undertaken during the scoping phase of the project and details of the engagement program to be implemented during the EIS process. This information is provided in a Social Impact Scoping Report attached at **Appendix A** in accordance with the draft *Social Impact Assessment Guideline for State Significant Projects* (DPIE, 2020 c).

The Scoping report will use the following terminology:

- **The Project** – this is in reference to the proposed development, including the solar farm, BESS and all associated infrastructure including the overhead transmission line and substation, as described in **Section 2.1**.
- **The Project Area** - located over eight freehold properties spanning multiple lots, covering an area of approximately 1,370 ha. This includes the site areas for the solar farm and BESS, the overhead transmission line alignment, and the electrical substation located in the Barneys Reef Wind Farm project area, as identified on **Figure 1.1**.
- **Involved Landholder** – a landholder that is involved in the Project.
- **Non-Involved Landholder** – a landholder that is not involved in the Project.

Refer to **Section 9.0** for the glossary of terms and abbreviations used in this Scoping Report.

1.3 The Proponent

The proponent for the development application for the Project is RES Australia Pty Ltd (RES) (ABN 55 106 637 754). RES is the world's largest independent renewable energy company active in both onshore and offshore wind, solar, energy storage and transmission and distribution.

A family-owned business at the forefront of the industry for nearly 40 years, RES has delivered over 20 GW of renewable energy projects across the globe and supports an operational asset portfolio of 7 GW worldwide.

Since 2004, RES has a strong history of working with communities to develop projects in Australia, including the Taralga Wind Farm (NSW), Ararat Wind Farm (VIC), Murra Warra Wind Farm stage 1 and 2 (VIC), Emerald Solar Farm (QLD), the construction and asset management of the Lal Lal Wind Farm (VIC) and the Columboola Solar Farm (QLD). The construction and asset management portfolio currently under management by RES in Australia is over 1.1 GW.

To achieve positive local and regional community outcomes, RES is committed to building strong relationships with key stakeholders and local communities. At the early development stage, emphasis is put on encouraging local participation and community input.

2.0 The Project

The Project will include the construction, operation and decommissioning of a photovoltaic (PV) solar farm with a capacity of up to 500 MW (AC) that would supply electricity to the national electricity grid. The solar farm and associated infrastructure are located across an area of up to 1,370 ha, with the PV modules and associated infrastructure likely to occupy around 1,119 ha of this area. The Project will include a BESS with a proposed capacity of up to 500 MW/1,000 MWh.

Subject to final design, the key components of the Project (shown on **Figure 2.1**) include:

- Approximately 1,238,500 bifacial solar PV modules in an east-west single-axis tracking arrangement with a maximum height of 5 metres (m) above ground level (refer to **Plate 2.1**).
- Approximately 1,000 MWh of DC-coupled battery storage units distributed throughout the solar farm site, adjacent to the inverters. The battery storage units will have the following specifications:
    - A total of 92 power conditioning unit (PCU) skids across the site, comprising two DC-coupled inverters and four battery storage units per skid.
    - Containerised battery storage units – Subject to final procurement, the dimensions of each battery storage unit will be approximately 12.2 m long, 2.5 m wide, and up to 3 m tall. A typical DC-coupled battery storage layout is provided in **Appendix B**.
- Up to 184 inverters and voltage step-up transformers.
- Onsite switchyard and 330 kV solar farm substation, with underground electrical conduits and cabling.
- Site office and operations and maintenance building with parking for the operations team.
- Primary solar farm site access point from the Castlereagh Highway and access points to the proposed Barneys Reef substation and overhead transmission line from Gingers Lane, north of the Project Area. Three secondary access points along Puggoon Road are proposed to allow for emergency vehicles and stock movements.
- Internal access allowing for site maintenance.
- Approximately 11 km of overhead 330 kV line connecting the proposed Tallawang Solar Farm substation to the grid via the proposed Barneys Reef substation (as shown on **Figure 2.2**).
- A 330 kV substation located in the Barneys Reed Wind Farm project area (**Figure 2.2**) which will provide a shared connection point for the wind farm and the Tallawang Solar Farm, with a footprint of approximately 2.3 ha. The substation will comprise a switching station with various electrical infrastructure, a control building up to 4 m tall, conductor support towers up to 6 m tall, and lightning rods up to 8 m tall.
- Vegetation screening if and where required following consultation with surrounding landholders and completion of the visual impact assessment as part of the EIS.
- Drainage line crossings if and where required to manage existing surface water flows (to be determined during further design development) and access points for construction purposes.
- Perimeter security fencing, crossing gates, water tanks or dams, and potential alternate secondary access points to facilitate sheep grazing.

CASTLEREAGH HIGHWAY

PUGGOON ROAD

LAHEYS CREEK ROAD

JENKINGS LANE

JACKSONS LANE

0 0.5 1 2 km

TALLAWANG SOLAR FARM

FIGURE 2.1

PRELIMINARY PROJECT LAYOUT

- PRIMARY PROJECT ACCESS
- SECONDARY ACCESS
- SINGLE ACCESS TRACKER
- DC-DC COUPLED PCU WITH HARDSTANDING
- PROPOSED SOLAR FARM SUBSTATION
- PROPOSED GRID ROUTE
- PROPOSED ACCESS TRACK
- EXCLUSION ZONE
- AREA UNSUITABLE FOR TRACKERS
- INVOLVED DWELLING
- SOLAR BORE & PUMP
- WATERCOURSE (SIXMAPS)
- WATERCOURSE BUFFER
- WATER AREAS TO AVOID
- DAM (SIXMAPS)
- TREES (DIGITISED FROM IMAGERY)
- TREE BUFFER, 40m
- ROCKY OUTCROP
- STATE ROAD
- LOCAL ROAD
- EXISTING VEHICULAR TRACK
- 22kV DISTRIBUTION LINE (TO BE REROUTED WHERE NECESSARY)
- PROJECT AREA BOUNDARY

INFRAS DWG	N/A	APPD DATE	10-06-2021
LAYOUT DWG	N/A	LAYOUT NO.	INFRASTRUCTURE04_20210511

DRAWING NUMBER

04651-RES-IMP-DR-PT-001

SCALE - 1:25,000 @ A3

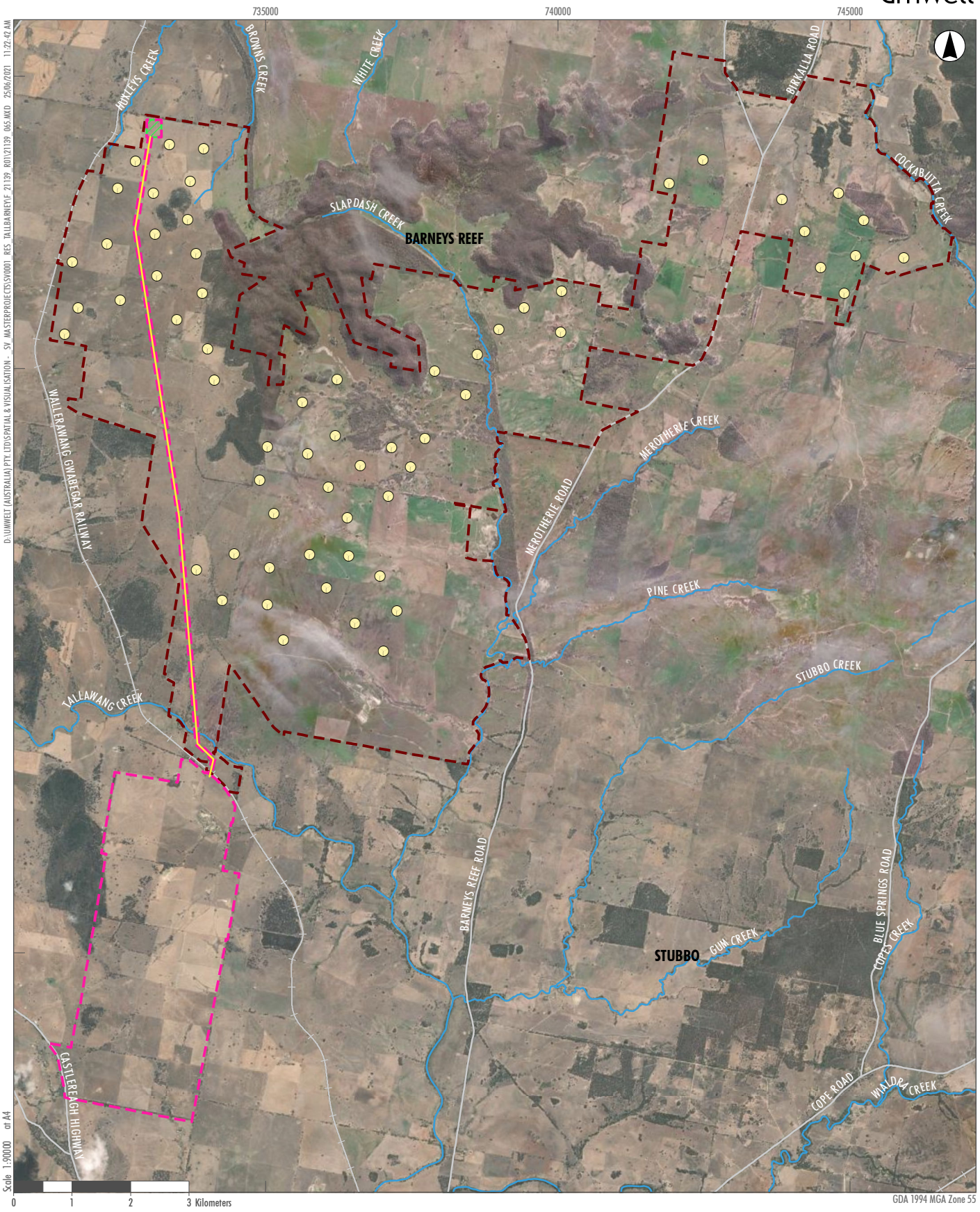
COORDS

GDA 1994 MGA Zone 55

PLANNING PERMIT APPLICATION

SUITE 6.01, LEVEL 6
165 WALKER STREET,
NORTH SYDNEY, NSW 2060

EMAIL: info-australia@res-group.com



Legend

- Tallawang Solar Farm Project Area
- Barneys Reef Wind Farm
- Transmission Line
- Proposed Turbine Location
- Possible Substation Location

FIGURE 2.2

Indicative Location of Transmission Line and Shared Substation

Data source: RES Australia (2021), NSW DFSI (2020), RES (2021)

The preliminary layout (shown on **Figure 2.1**), the alignment of the overhead transmission line, and position of the shared substation (shown on **Figure 2.2**) including the site access requirements, will be refined as the environmental and social impact assessments progress.

Construction compound areas (including laydown areas, security hut and temporary parking) are proposed on the solar farm site and close to the primary solar farm site access point off the Castlereagh Highway. Internal access tracks for the construction phase will be approximately 6 m and constructed of compacted gravel.

The Project is expected to operate for 35 years following an approximated 34-month construction period. After the initial 35-year operating period, the solar farm would either be decommissioned, removing all above ground infrastructure and returning the site to its existing land capability, or repurposed with new PV equipment subject to technical feasibility, landowner discussions and planning consents.

The capital value of the Project is split between a battery storage component and solar farm component. The battery storage component is currently valued at $420 million but is yet to be confirmed. The solar farm component is currently valued at $760 million. A capital investment value (CIV) will be calculated and presented in the EIS to support the development application.

Plate 2.1 Example of 2P solar panel mounting

2.1 The Project Area

The Project Area comprises the Tallawang Solar Farm site, the 330 kV overhead transmission line connecting the Project with the electricity grid via the proposed Barneys Reef substation, and the Barneys Reef substation. The Project Area is located between Tallawang (to the northwest) and Gulgong (to the southeast), as shown on **Figure 1.1**. The solar farm and associated infrastructure are located across an area of up to 1,370 ha and compromises (wholly or partly) 31 cadastral lots, which are listed in the table.

The Project Area is located on the following parcels of land:

- Solar farm site:
  - 1//332044
  - 68//750762 (also within the overhead transmission line corridor)
  - 74//750762
  - 78//750762
  - 89-90//750762
  - 96-98//750762
  - 105//750762
  - 112-114//750762
  - 120//750762
  - 147-148//750762
  - 150//750762
  - 152//750762
  - 101//1079036.
- Barneys Reef substation:
  - 97//750764 (also within the overhead transmission line corridor)
- Overhead 330 kV transmission line:
  - 1//728707
  - 74//750762 (also part of the solar farm site)
  - 193//750762
  - 82//750764
  - 108//750764
  - 118//750764

- 97//750674 (also the Barneys Reef substation site)
- 98//750764
- 36//750767
- 38//750767
- 44//750767
- 56-58//750767
- 61-62//750767
- 68//750767
- 71//750767
- 74//750767
- 84-87//750767.

The solar farm site will be accessed directly off the Castlereagh Highway, while the shared substation in the Barneys Reef Wind Farm project area and the overhead transmission line will have access from Gingers Lane, to the north of the Project Area. Further detail regarding the proposed access and transport route is provided in **Section 5.5**. The proposed access and transport route will be subject to further technical review and may be revised as the environmental and social impact assessments progress through the EIS.

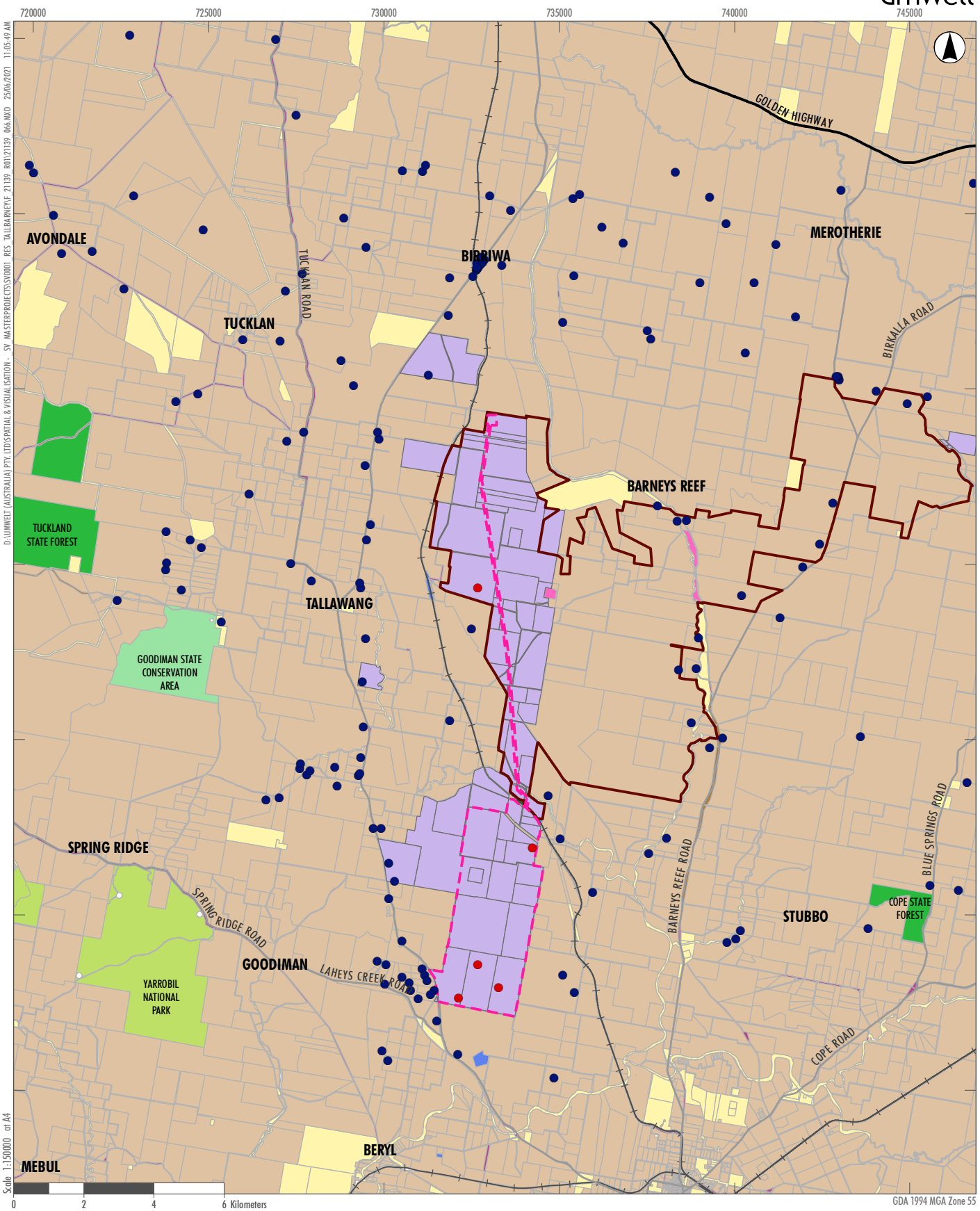
The proposed 330 kV transmission line will be located across approximately 70 ha of freehold land over four properties, of which the Barneys Reef substation will make up approximately 2.3 ha of freehold land on a single property (refer to **Figure 2.2**).

The Project is located within the CWO REZ, adjacent to the proposed Barneys Reef Wind Farm. To gain efficiencies across the two projects, the proponent is proposing to construct a shared connection point on the proposed Barneys Reef Wind Farm project site that will facilitate a network connection for both projects. This connection, comprising both a substation and overhead transmission line, will form part of the development application for both projects. In all other aspects the projects will be independent of each other. The Project is proposed to connect to the CWO REZ transmission infrastructure. Should the CWO REZ not proceed, an alternative connection arrangement to the existing 330kV Wellington to Wollar line (located immediately south of the Project) will be evaluated.

2.2 Land Ownership

As mentioned in **Section 1.1**, the Project Area encompasses a total of eight involved landholders with the majority of land surrounding the Project Area in private ownership. The solar farm site is proposed to be located on four of these freehold properties, covering an area of approximately 1,370 ha. The properties are currently used for cropping and grazing activities. The solar farm site further includes a number of Crown Roads (‘paper roads’) (**Figure 2.3**).

The preferred route for the 330 kV overhead transmission line connecting the Tallawang Solar Farm substation to the CWO REZ 330 kV transmission line crosses four free hold properties in a corridor approximately 60 m wide and 11 km long, covering an area of approximately 70 ha. It will also cross the TfNSW Wallerawang Gwabegar Railway line passing over the rail reserve (maintained by the Australian Rail Track Corporation (ARTC)).



Legend

- Tallawang Solar Farm Project Area
- Barneys Reef Wind Farm Project Area
- Involved Landholder Dwelling
- Non-involved Landholder Dwelling
- Private - Involved Landholder
- Crown Land
- Private
- Local Government Authority
- NSW Government
- The State of NSW
- Transport for NSW
- Shared Crown/Council
- National Park
- State Conservation Area
- StateForest

FIGURE 2.3

Land Tenure

Image Source: ESR Basemap Data source: RES Australia (2021), NSW DFSI (2020)

The Barneys Reef substation is proposed to be located on one freehold property with a footprint of approximately 2.3 ha, within the proposed Barneys Reef Wind Farm project area.

It is anticipated that should any upgrades be required to roads external to the site, these would be undertaken within the road reserve. This will be further investigated during the EIS phase.

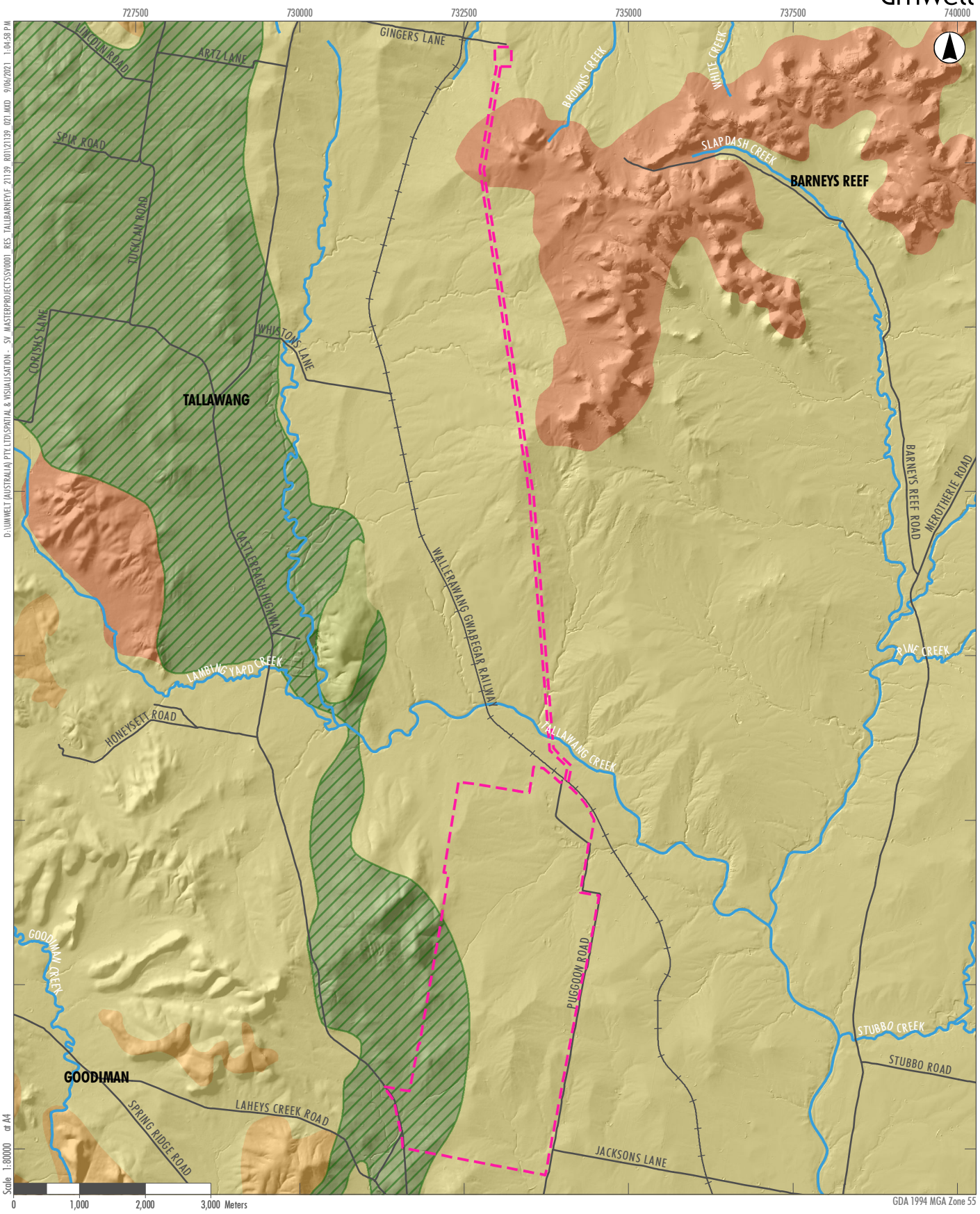
2.3 Environmental and Community Context

Land within and surrounding the Project Area has been subject to extensive vegetation clearing associated with historic agricultural land uses and is predominately utilised for grazing activities. Agriculture (primarily sheep grazing with some cattle grazing) is the main land use in the LGA. There are some areas of forestry, mining and nature conservation.

Land in the Project Area is Class 3 and 5 under the NSW Land and Soil Capability Assessment Scheme. Class 3 is considered high capability land able to sustain high-impact land uses such as cropping with cultivation, while Land Class 5 is considered moderate to low capability agricultural land with significant limitations for high-impact land uses. Approximately 228 ha in the south-western corner of the Project Area is Land Class 3 (**Figure 2.4**) and this is mapped as Biophysical Strategic Agricultural Land (BSAL) (DPIE, 2021) indicating that it has high quality soil and water resources capable of sustaining high levels of productivity.

The Project Area is zoned RU1 Primary Production under the *Mid-Western Regional Local Environmental Plan 2012* (Mid-Western Regional LEP). The 330 kV overhead transmission line will cross the Wallerawang Gwabegar Railway line, which is zoned SP2 Infrastructure. Approximately 1145 ha of the Project Area is subject to mineral exploration licences (EL8160 and EL8405). No part of the Project Area is subject to a mining/production lease (**Figure 2.5**).

There are approximately 60 dwellings located within 10 km of the Project Area (**Figure 2.6**). Six of these dwellings are involved dwellings (owned by landholders involved in the Project) whereas the remaining dwellings are non-involved dwellings (owned by landholders not involved in the Project). The closest non-involved dwelling is located approximately 200 m west of the Project Area. The proximity and number of non-involved dwellings (sensitive receivers) will be further investigated during the EIS process.



Legend

- Tallawang Solar Farm Project Area
- Biophysical Strategic Agricultural Land (BSAL)

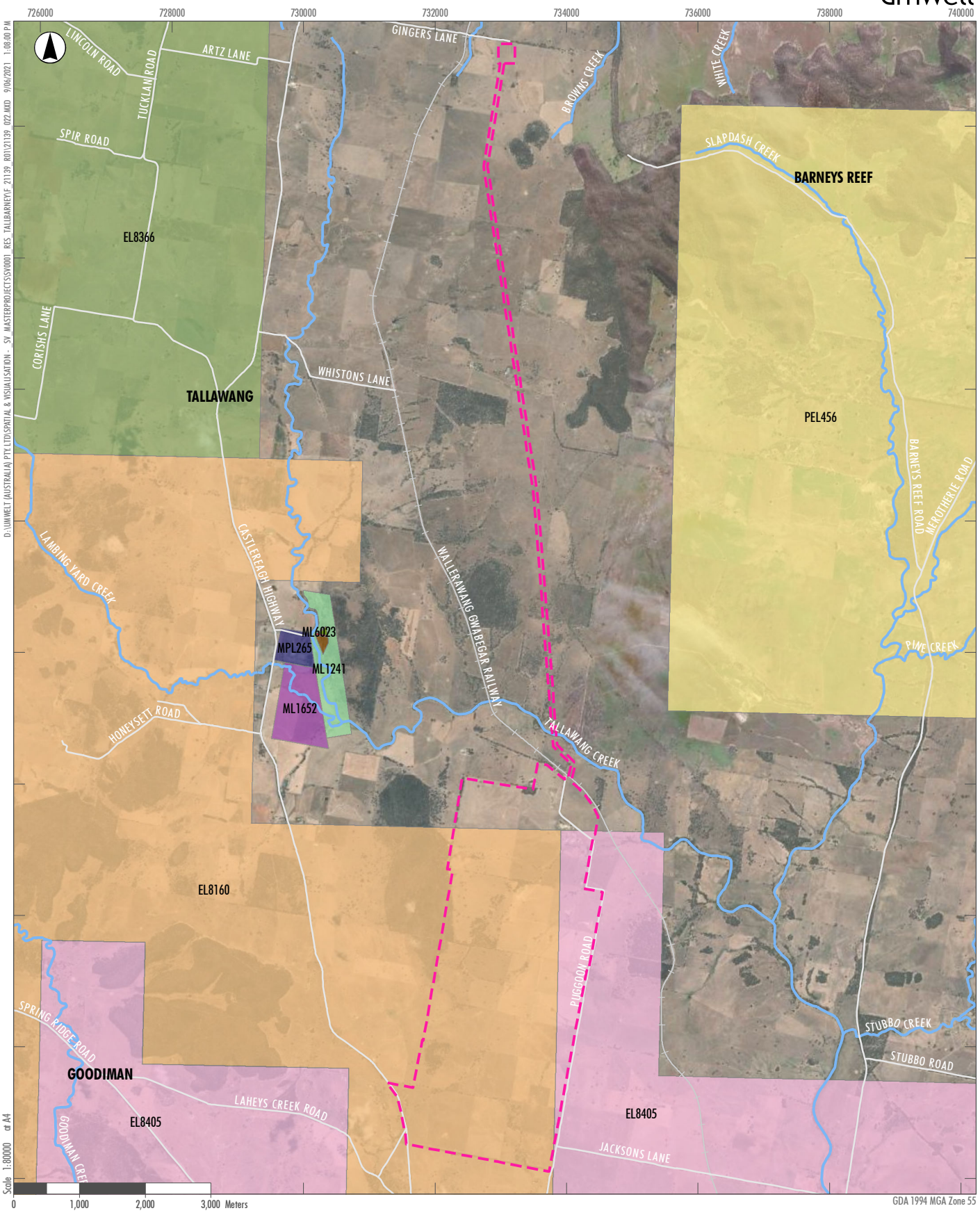
Land and Soil Capability

- 3 - Moderate Limitations
- 4 - Moderate to Severe Limitations
- 5 - Severe Limitations
- 6 - Vey Severe Limitations
- 7 - Extremely Severe Limitations

FIGURE 2.4

Land and Soil Capability

Image Source: ESR Basemap Data source: RES Australia (2021), NSW DFSI (2020), NSW Department of Planning and Infrastructure (2013)



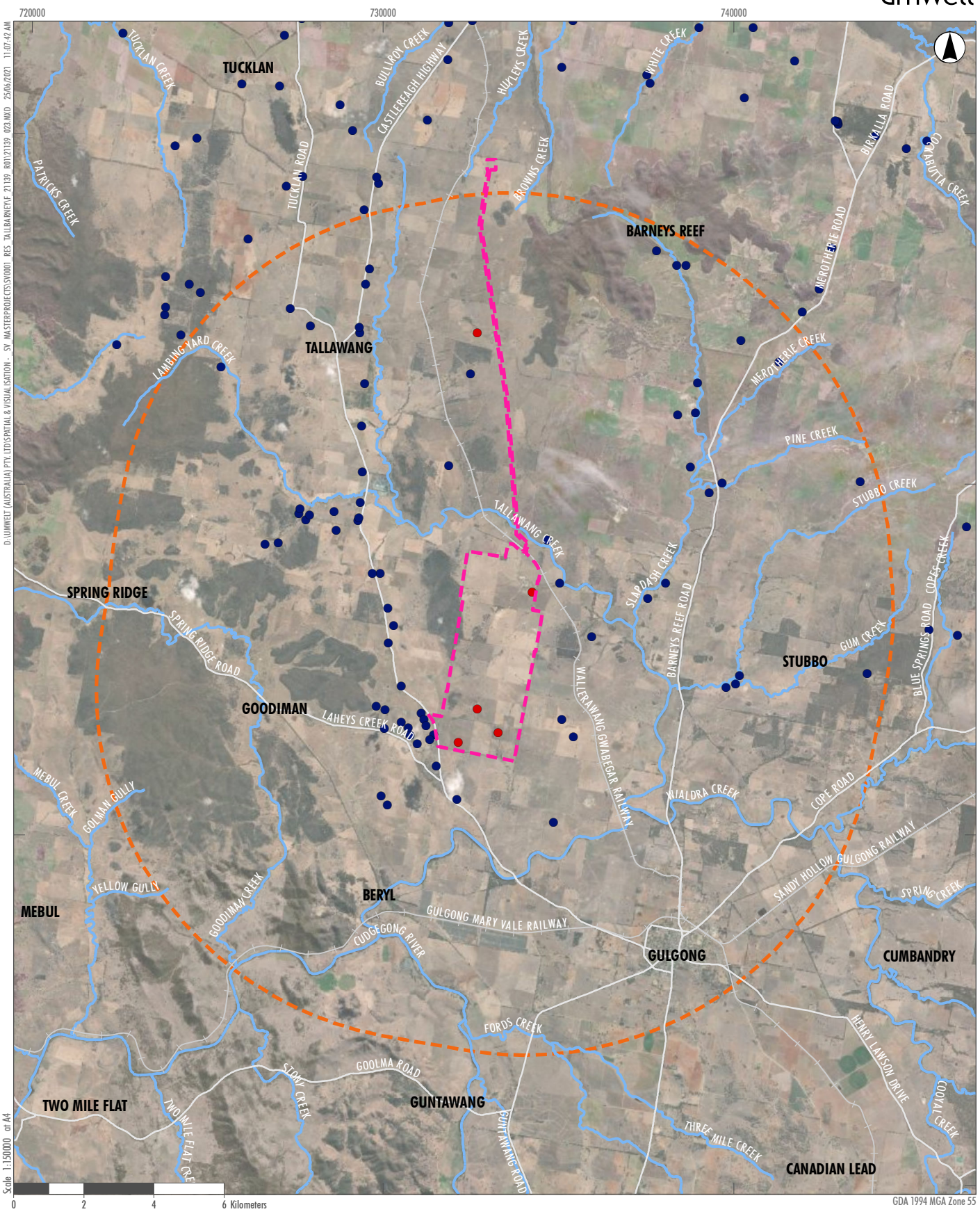
Legend

- Tallawang Solar Farm Project Area
- EL8160
- EL8366
- EL8405
- ML1241
- ML1652
- ML6023
- MPL265
- PEL456
- PLL1093
- PLL3610

FIGURE 2.5

Exploration and Mining Titles in the Project Area

Image Source: ESR Basemap Data source: RES Australia (2021), NSW DFSI (2020), MinView (2021)



Legend

- Tallawang Solar Farm Project Area
- Involved Landholder Dwelling
- Non-involved Landholder Dwelling
- 10km Buffer

FIGURE 2.6

Dwellings located within 10km of the Project Area

Image Source: ESR Basemap Data source: RES Australia (2021), NSW DFSI (2020)

3.0 Strategic and Planning Framework

3.1 Strategic Planning Context

3.1.1 NSW 2021 Plan & Renewable Energy Action Plan

The *NSW 2021 Plan* sets state-wide priorities for action and also guides resource allocation (NSW Government, 2011). Goal 22 of this plan seeks to protect the natural environment and includes a specific target to increase renewable energy. The plan states:

'We will contribute to the national renewable energy target by promoting energy security through a more diverse energy mix, reducing coal dependence, increasing energy efficiency and moving to lower emission energy sources. Specific initiatives include:

- *Establishing a Joint Industry Government Taskforce to develop a Renewable Energy Action Plan for NSW to identify opportunities for investment in renewable energy sources.'*

Since release of the 2021 plan, the NSW Government has overseen the development of the *NSW Renewable Energy Action Plan* (REAP), released in September 2013. The vision of the plan is a 'secure, affordable and clean future for NSW'. Goal 1 of the REAP is to attract renewable energy investment, including to '*support mid-scale solar PV to enable an uptake of solar technologies where they are most cost effective'*.

The proposed Project aligns with this State led objective and is consistent with the goal and intent of the REAP.

3.1.2 NSW Electricity Strategy

The *NSW Electricity Strategy* (the Strategy) provides an overview of the current and projected electricity status in NSW and states the aims for the electricity system which is to provide reliable, affordable, and sustainable electricity.

The Project Area is located within the Central West Orana region which is identified as a REZ under the Strategy. A REZ involves the coordinated development of new grid infrastructure in renewable energy-rich areas to connect multiple generators (such as solar and wind farms) in the same location. The designation of REZs is intended to result in the development of additional capacity of renewable electricity generation at a lower cost (DPIE, 2020 b). The REZs are expected to play a vital role in the delivery of affordable energy across NSW as the State's existing power stations close over the coming decades.

The CWO REZ will be the State's first pilot REZ. This region benefits from relatively low transmission build costs due to its proximity to the existing backbone transmission network, a strong mix of energy resources and significant investor interest (DPIE, 2020 b). The NSW Government expects that the CWO REZ will unlock up to 3,000 MW of new electricity capacity by the mid-2020s, providing up to 3,900 construction jobs at one time (DPIE, 2020 b).

There are a number of renewable energy projects within the region which are operational, under construction or at different stages of the approval process, as discussed in **Section 5.12**.

The proposed Central West Orana REZ Transmission Line corridor (refer to **Figure 5.7**) traverses to the north of the Project Area, with the study corridor passing through the north west and north east portions of the Barneys Reef Project Area. This proposed transmission line corridor will better connect the REZ with the broader NSW electricity network.

3.1.3 Central West and Orana Regional Plan 2036

The *Central West and Orana Regional Plan 2036* is the NSW Government's strategic long-term plan for guiding planning and land use decisions for the Central West and Orana region until 2036. The Regional Plan sets out four regionally focused goals for the region:

- The most diverse regional economy in NSW
- A stronger, healthier environment and diverse heritage
- Quality freight, transport and infrastructure networks
- Dynamic, vibrant and healthy communities.

The Regional Plan aims to strengthen the region's diverse regional economy, improve transport connections with metropolitan cities to the east to provide capacity and connectivity and to foster greater market and industry diversification. In particular, the Regional Plan acknowledges that recent landmark solar, wind and bioenergy projects distinguish the region as a leader in renewable energy development.

The proposed Project aligns to several 'directions' in the Regional Plan. As described in **Table 3.1**, the Project will increase renewable energy generation and lead to decreased reliance on fossil fuel power generation, while also protecting agricultural land through continued sheep grazing. Environmental and Aboriginal cultural heritage assets will be protected and managed throughout all stages of the Project, including design, construction, operation and decommissioning.

Table 3.1 Alignment of the Project with directions in the *Central West and Orana Regional Plan 2036* (adapted from DPE, 2017)

Regional Plan direction	Project alignment with directions
1. Protect the region's diverse and productive agricultural land	The Project allows for ongoing agricultural activity through continued use of the Project Area for sheep grazing, preventing fragmentation of agricultural land in the region.
8. Sustainably manage mineral resources	Renewable energy developments such as the Project leads to reduced reliance on fossil fuels for power generation. In regional areas of NSW where mining is an important contributor to the economy, including the Central West, renewable energy projects also support communities to transition out of mining as mineral extraction diminishes.
9. Increase renewable energy generation	The Project is located within an identified REZ and will increase renewable energy generation in NSW. The Project is using best practice community engagement methods to promote community engagement and identify opportunities for the community to benefit from the Project. This is discussed more in **Section 4.0**.
13. Protect and manage environmental assets	The Project involves identification of environmental assets including threatened ecological communities (TECs) and habitat for threatened species in the Project Area. As discussed in **Section 5.1**, the Project has been strategically designed to avoid impacts to some TECs. Where impacts are unavoidable, the Project will mitigate and manage those impacts throughout construction, operation and decommissioning.

Regional Plan direction	Project alignment with directions
16. Respect and protect Aboriginal heritage assets	The Project involves identification of Aboriginal heritage assets in the Project Area. Public databases indicate that no Aboriginal heritage assets are recorded in the Project Area (see **Section 5.2**). An Aboriginal Cultural Heritage Assessment will be undertaken as part of the EIS, involving engagement with local Aboriginal stakeholders, to confirm this. If any assets are identified, impacts from the Project would be avoided.
24. Collaborate and partner with Aboriginal communities	As described above, local Aboriginal stakeholders will be engaged as part of the EIS process to identify whether the Project Area contains any items of heritage value and appropriate measures for avoiding impacts.

3.2 Environmental Planning Instruments

3.2.1 NSW Planning Approval Pathway

There are several planning instruments in NSW which regulate the planning and environmental impact of development. The primary instrument is the *Environmental Planning and Assessment Act 1979* (EP&A Act) which regulates the environmental assessment and approval process for development in NSW. The EP&A Act is supported by the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation).

3.2.1.1 NSW *Environmental Planning and Assessment Act 1979 (EP&A Act, 1979)*

The Project will require development consent under Part 4 of the EP&A Act. The Project is State Significant Development (SSD) under the provisions of the State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP) (see **Section 3.2.1.2**) and is subject to the provisions of Division 4.7 of the EP&A Act. The development application will be lodged with the Planning Secretary of the DPIE. This report accompanies the request for the SEARs for the EIS.

Section 4.15 of the EP&A Act describes the matters for consideration in assessing SSD, including provisions of relevant environmental planning instruments, proposed instruments that have been the subject of public consultation, development control plans, planning agreements, and statutory regulations. The assessment of SSD must also consider the likely impacts of the development, suitability of the Project Area, any submissions received, and the public interest.

Section 4.41 of the EP&A Act clarifies that development consent for SSD includes authorisations under the following statutory provisions, meaning that separate planning approval processes do not apply:

- A permit under Section 201, 205 or 219 of the *Fisheries Management Act 1994* (FM Act)
- An approval under Part 4, or an excavation permit under Section 139, of the *Heritage Act 1977* (Heritage Act)
- An Aboriginal heritage impact permit under Section 90 of the *National Parks and Wildlife Act 1974* (NPW Act)
- A bushfire safety authority under Section 100B of the *Rural Fires Act 1997*
- A water use approval under Section 89, a water management work approval under Section 90 or an activity approval (other than an aquifer interference approval) under Section 91 of the *Water Management Act 2000*.

3.2.1.2 *State Environmental Planning Policy (State and Regional Development) 2011*

Clause 20 of Schedule 1 of the State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP) states that the following is considered a SSD:

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

(a) has a capital investment value of more than $30 million, or

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

The proposed Project has a capital investment value of greater than $30 million. Therefore, the Project is declared as SSD under Part 4 of the EP&A Act.

3.2.1.3 *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP)

Clause 34(7) of the *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP) states that development for the purpose of a solar energy system may be carried out by any person with consent on any land. A solar energy system includes a PV electricity generating system.

The Project, being located on land zoned as RU1 Primary Production, is therefore permissible with consent.

3.2.1.4 *State Environmental Planning Policy 33 – Hazardous and Offensive Development* (SEPP 33)

SEPP 33 requires the consent authority to consider whether an industrial proposal is a potentially hazardous industry or a potentially offensive industry. A hazard assessment is completed for potentially hazardous development to assist the consent authority to determine acceptability.

A hazard and risk assessment will be completed for proposed Project as part of the EIS (refer to **Section 5.10**).

3.2.1.5 *State Environmental Planning Policy No 55 – Remediation of Land* (SEPP 55)

SEPP 55 requires the consent authority to consider whether a site is contaminated and if it must be remediated to be suitable for the proposed development.

A review of the NSW Environment Protection Authority (EPA) Contaminated Land Record and List of NSW contaminated sites notified to the EPA, undertaken on 16 April 2021, confirmed there are no known contaminated sites in or near the Project Area. Based on the historical agricultural use of the site, it is unlikely that significant contamination exists at the site. Potential historic contamination will be further investigated during the EIS phase, including an assessment of contamination risk as a result of the Project. Construction and operation of the Project is unlikely to pose a significant contamination risk. A Construction Environmental Management Plan (CEMP) would address management of contamination if identified during construction.

3.2.1.6 Mid-Western Regional LEP

The Project is located within the Mid-Western Regional LGA and is zoned as RU1 Primary Production under the Mid-Western Regional LEP. Electricity generating works are permitted with consent in this zone.

Under Clause 8(1) of the ISEPP, the provisions of the ISEPP prevail where there are inconsistencies with any other environmental planning instruments, including LEPs. The proposed 330 kV overhead transmission line

will cross the Wallerawang Gwabegar Railway line, which is zoned SP2 Infrastructure under the Mid-Western Regional LEP. Transmission lines or utilities are not explicitly permitted in this zone unless associated with railway development. In this instance, the transmission lines would be permitted under the ISEPP under Clause 34(7).

Furthermore, a Voluntary Planning Agreement (VPA) will be considered based on ongoing engagement with Council. Further details in this regards will be provided in the EIS.

3.2.2 Other NSW Legislation

Other NSW legislation applicable to the Project is outlined in **Table 3.2**.

Table 3.2 NSW legislation relevant to the Project

Applicable Legislation	Description
Biodiversity Conservation Act 2016 **(BC Act)**	Under the BC Act, biodiversity assessment in accordance with the Biodiversity Assessment Method (BAM) is required for any SSD project. The Project (as SSD) will trigger the need to prepare a Biodiversity Development Assessment Report (BDAR) in accordance with the BAM. The EIS will include a BDAR.
National Parks and Wildlife Act 1974	The NPW Act sets out to protect and preserve Aboriginal heritage values. Part 6 of this Act refers to Aboriginal objects and places and prevents persons from impacting on an Aboriginal place or relic, without consent or a permit. An Aboriginal Cultural Heritage Assessment will be undertaken as part of the EIS for the Project and will ensure compliance with the NPW Act.
Heritage Act 1977 **(Heritage Act)**	The Heritage Act aims to conserve heritage values. The Act defines 'environmental heritage' as those places, buildings, works, relics, moveable objects and precincts listed in the Local or State Heritage Significance. A property is a heritage item if it is listed in the heritage schedule of the local Council's LEP or on the State Heritage Register, a register of places and items of particular importance to the people of NSW. Under Section 4.41 of the EP&A Act, an approval under Part 4 or a permit under Section 139 of the Heritage Act 1977 would not be required for a State Significant Development.
Protection of the Environment Operations Act 1997 **(POEO Act)**	The POEO Act regulates pollution to the environment and requires licences for environmental protection including waste, air, water and noise pollution control. Solar farms are not a scheduled activity under the POEO Act, thus the Project does not require an Environment Protection Licence (EPL).
Water Management Act 2000 **(WM Act)**	Any water extractions from water sources (surface and groundwater) regulated by a Water Sharing Plan (WSP) required for construction purposes will require licensing under the WM Act. The potential water requirements during construction will be assessed as part of the EIS. Any necessary licences would be obtained for the Project.
Roads Act 1993 **(Roads Act)**	A consent is required under Section 138 of the Roads Act to work on or above a road or to connect a road to a classified road. Consents under Section 138 may be required for the proposed road upgrades if they are required for classified roads. This will be examined during the preparation of the Traffic and Transport Impact Assessment for the EIS.

Applicable Legislation	Description
Crown Land Management Act 2016 **(Crown Land Act)**	The Crown Land Act provides for the administration and management of Crown land in NSW. Crown land may not be occupied, used, sold, leased, licensed, dedicated, reserved or otherwise dealt with unless authorised by the Crown Land Act. There are some parcels of Crown land within the Project Area. Consent from the Minister for Water, Property and Housing would be required should any infrastructure or construction be proposed on these Crown roads. Consultation with Crown Land has commenced, detailed further in **Section 4.4**..
Contaminated Land Management Act 1997 **(CLM Act)**	The CLM Act establishes the process for investigating and if required, remediating land that the NSW Environment Protection Authority (EPA) considers to be sufficiently contaminated so as to require regulation under Part 3, Division 2. The Project Area does not contain land listed on the Contaminated Lands Register. Relevant mitigation and management measures would be incorporated into the EIS to address any potential contamination issues.
Mining Act 1992	Approximately 612 ha of the Project Area is subject to a mineral exploration licence (EL8160). No part of the Project Area is subject to a mining/production lease (**Figure 2.3**). Consultation with the holder of mining exploration licences EL8160 and EL8405 has commenced and will continue throughout the EIS phase.
Dark Sky Planning Guideline 2016	The *Dark Sky Planning Guideline (2016)* is a matter for consideration for all development under the EP&A Act before development consent is granted within the local government areas of Coonamble, Dubbo, Gilgandra and Warrumbungle and the assessment of significant development within 200 kilometres of the Observatory at Siding Spring, also referred to as the Dark Sky Region. The Project falls within the Dark Sky Region. A Visual Impact Assessment will be undertaken as part of the EIS (refer to **Section 5.3**) and will consider night lighting in regard to the Dark Sky Planning Guidelines.

3.2.3 Commonwealth Legislation

3.2.3.1 *Environment Protection and Biodiversity Conservation Act 1999*

The EPBC Act provides a framework for protection of the Australian environment, including its biodiversity and natural and culturally significant places. Any action which could have a significant impact on a Matter of National Environmental Significance (MNES) must be referred to the Minister for the Environment. There are nine MNES:

- World heritage properties
- National heritage places
- Wetlands of international importance (listed under the Ramsar Convention)
- Listed threatened species and ecological communities
- Migratory species protected under international agreements
- Commonwealth marine areas
- The Great Barrier Reef Marine Park

- Nuclear actions (including uranium mines)

- A water resource, in relation to coal seam gas development and large coal mining development.

The Project Area is not within a world heritage property or national heritage place, is not in proximity to wetlands of international importance, is not within either a Commonwealth marine area or the Great Barrier Reef Marine Park, and does not relate to a nuclear action, coal seam gas or coal mining development.

Preliminary ecological investigations have identified that the *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* (BGW) threatened ecological community (TEC) may be present in the Project Area. Further field surveys are needed to determine whether the vegetation communities identified in the Project Area conform with the TEC. No Commonwealth listed threatened species have been identified (refer to **Section 5.1**).

A referral will be submitted to the Commonwealth Department of Agriculture, Water and the Environment (DAWE) to confirm whether the Project requires assessment and approval under the EPBC Act. If the Project is determined to be a controlled action, it will be assessed under the Assessment Bilateral Agreement currently in place between the NSW and Commonwealth Governments, which allows DPIE to undertake assessments of MNES on behalf of DAWE for certain developments, including SSD.

4.0 Stakeholder Engagement

Umwelt are preparing a social impact assessment (SIA) to support the EIS. The scoping phase (Phase 1) of the SIA has been conducted in accordance with the *draft Social Impact Assessment Guideline for State Significant Projects* (DPIE, 2020) and has involved key phases of work to inform Project planning and design process including consultation with relevant stakeholders to identify social impacts/issues relevant to the Project.

A coordinated approach to stakeholder engagement has been undertaken for the Project with the adjacent Barneys Reef Wind Farm. This approach intends to streamline the two projects' consultation programs and utilise a common approach to engagement, aiming to:

- Ensure the development and implementation of engagement that is transparent and provides clear and consistent information on the two projects
- Reduce social risks associated with either project, including stakeholder confusion or consultation fatigue
- Establish and develop trust with key stakeholders
- Afford the opportunity for meaningful participation in the assessment phases for both projects.

The stakeholders identified for the Project and the approach to stakeholder engagement are summarised in the following sections. Further detail on the stakeholder engagement program is provided in the SIA Scoping Report at **Appendix A**.

4.1 Preliminary Stakeholder Identification

The stakeholder identification process involved identifying stakeholders with an interest in the Project, or those directly and indirectly affected, including any potentially vulnerable or marginalised groups in the community. The identified stakeholders were grouped into three groupings according to the level of engagement needed for the Project:

- Group 1: High priority – stakeholders who require proactive and collaborative engagement
- Group 2: Moderate priority – stakeholders who require information provision and/or may be interested in the Project
- Group 3: Low priority – stakeholders who will be given the opportunity to participate but will not necessarily be engaged directly.

Key Group 1 and Group 2 stakeholders identified for the Project are shown in **Figure 4.1**. These stakeholders have been consulted or engaged throughout March to May 2021 and will continue to be engaged as the SIA and EIS progresses.

Figure 4.1 Key stakeholders

4.2 Phase 1 Stakeholder Engagement

The proponent has prioritised early stakeholder engagement to build positive relationships with near neighbours and key stakeholders of the Project, to inform Project design and development, and to identify and understand perceived issues and impacts as early as possible in the planning and assessment process. Stakeholders consulted during Phase 1 of the SIA are summarised in **Table 4.1**. Subsequent phases of the SIA will seek broader involvement across the stakeholder groups and will include wider community involvement as part of the broader EIS and SIA assessment processes (refer to **Section 4.3** for more information on the Phase 2 engagement activities).

A range of mechanisms has been utilised to obtain input from the various stakeholder groups. These are defined in **Table 4.2** and listed against each stakeholder group in **Table 4.1**.

Table 4.1 Stakeholders consulted during Phase 1 of the SIA

Stakeholder group	Engagement mechanism	Number contacted	Number engaged
Involved (Host) landholders	Written questionnaire	2[1]	1
Non-involved Proximal landholders	Personal meeting	15	11
Traditional Owners	Project briefing	1	1
Local Government	Project briefing	2	2
Community & special interest groups	Project briefing and interview	8	4
Local businesses & service providers	Personal meeting/interview	4	2
Local community[2]	Project Information Sheet	1,788	1,788
Broader community	Project website	-	-
Local media	Media Statement	4	4

Table 4.2 Stakeholder engagement mechanisms in Phase 1 of the SIA

Mechanisms	Description	Targeted Stakeholder Group
Project briefings	Targeted meetings and briefings with key Local, State and Commonwealth Government agencies as required, and key non-government stakeholders including local Indigenous organisations and community groups. These briefings were to formally introduce the Project and were undertaken from March to May 2021. Stakeholders briefed include: • DPIE – Energy Assessment Team • Mid-Western Regional Council • Warrumbungle Shire Council • Mudgee Local Aboriginal Land Council • NSW Farmers Association • Mudgee Chamber of Commerce. **Section 4.4** contains more information on the agency engagement. In addition, RES is engaged in ongoing discussions with Transgrid regarding the location of future REZ transmission infrastructure, and the connection process for projects connecting to REZ infrastructure.	Local Government State Government Commonwealth Government Traditional Owners Community Groups Local businesses and service providers
Personal meetings or interviews	Individual meetings, held via telephone, utilising a semi-structured interview guide to identify individual concerns, interests, issues, and feedback on the Project. One-on-one introductory meetings with adjacent and nearby landholders took place in March and April 2021. Bowdens Silver, the holder of the two exploration licences in the Project Area (**Figure 2.5**), was also engaged in May 2021.	Adjacent and nearby non-involved landholders and residents Local businesses and service providers Community groups Traditional Owners

[1] Host landholders of the transmission line will be consulted in subsequent phases of the Project.

[2] "Local community" includes the localities of Tallawang, Barneys Reef, Gulgong, Dunedoo, Goolma, Beryl, Leadville, Merotherie, Bungaba, Birrawa, and Stubbo.

Mechanisms	Description	Targeted Stakeholder Group
Project Information Sheet No. 1	Project information sheets to distribute information about the Project to the broader community. 1,788 households were sent the No. 1 Project Information Sheet throughout March-May 2021. A copy of the Project Information Sheet 1 is provided in **Appendix D**.	State Government Local Government Traditional Owners Involved landholders Adjacent and nearby non-involved landholders and residents Community groups Wider community Local businesses and service providers Local media
Letter	Formal engagement with select stakeholders to introduce the Project and obtain comment. Letters were sent to the following agencies/organisations as part of the Aboriginal cultural heritage consultation process in March 2021: • Mudgee Local Aboriginal Land Council • National Native Title Tribunal • Native Title Services Corp • Office of the Registrar Aboriginal Land Rights Act • Mid-Western Regional Council • Heritage Office • Local Land Services Central West. Letters were also sent to the following agencies in May 2021 and July 2021 as part of Phase 1 engagement activities: • Mid-Western Regional Council – Planning Directorate • Transport for NSW • Crown Lands • ARTC. Copies of the written correspondence with the above agencies are available on request.	State Government Local Government Traditional Owners
Questionnaire/ survey	Questionnaires/surveys to scope and assess potential issues, impacts and opportunities of the Project. Involved landholders were provided with a questionnaire to complete in their own time and provide written responses.	Involved landholders Adjacent and nearby non-involved landholders and residents Local businesses and service providers

Mechanisms	Description	Targeted Stakeholder Group
Website/hotline/ email	Platforms and tools that provide the opportunity for the wider community and public to engage with the Project. They allow the proponent to provide information about the Project and the community to provide feedback outside of dedicated consultation periods. A website (http://www.tallawang-renewableenergy.com/), hotline and email address were established in March 2021.	Traditional Owners Involved landholders Adjacent and nearby non-involved landholders and residents Community groups Wider community Local businesses and service providers Local media
Media release	A holding statement outlining key Project messages in local media. The holding statement was developed in April 2021 and distributed to local media agencies in May 2021.	Local Government Traditional Owners Involved landholders Adjacent and nearby non-involved landholders and residents Community groups Wider community Local businesses and service providers Local media

Quantitative and qualitative information collected through this engagement process has been analysed to inform the preliminary analysis of social impacts associated with the Project.

Phase 1 of the SIA has identified key issues of relevance to near neighbours and key stakeholders in relation to the Project. The key issues raised by the community and the perceived and likely impacts identified by the scoping SIA will be considered as part of the broader SIA/EIS assessment.

Key issues raised by the community to be addressed as part of the EIS phase for the Project include land use conflict, visual amenity, noise, biodiversity and socio-economic impacts, caused by the Project itself and in conjunction with other nearby projects (cumulative impacts). Further detail in relation to the issues raised during the stakeholder engagement and analysis of the potential social impacts is provided in the Social Scoping Report at **Appendix A**.

4.3 Phase 2 Stakeholder Engagement

Proposed engagement activities undertaken during Phase 2 stakeholder engagement will be focused on responding to questions, concerns or issues that arose during Phase 1. Environmental issues and Project refinements will be made in line with this feedback where possible. This phase of engagement is also an opportunity to further explore and validate the social issues, interests and impacts that were identified during Phase 1. The EIS program and preliminary insights or findings gathered through the various technical studies will also be further communicated during this phase, to assist in gathering feedback from key stakeholders and the wider community, on predicted Project impacts (positive and negative).

Engagement undertaken in Phase 2 will therefore focus on the following considerations to inform the SIA and EIS:

- Assessment of perceived issues, impacts and opportunities associated with the Project

- Existing capacity of local service provision and projected future demand
- Responding to, addressing, and integrating environmental and project design matters raised during Phase 1
- Potential strategies to address and respond to issues, impacts and opportunities
- Enhancement measures to improve collaboration between the proponent and the community or stakeholders, including potential community investment and benefit-sharing.

Similar engagement mechanisms will be used in Phase 2 as for Phase 1. The implementation of these mechanisms will be subject to NSW COVID-19 restrictions at the time.

Table 4.3 Stakeholder engagement mechanisms in Phase 2 of the SIA

Mechanisms	Description	Targeted Stakeholder Group
Project briefings	Targeted meetings and briefings with key Local, State and Commonwealth Government agencies as required, and key non-government stakeholders.	Local Government State Government Commonwealth Government Traditional Owners Community Groups Local businesses and service providers
Personal meetings or interviews	Individual meetings, held via telephone, utilising a semi-structured interview guide to identify individual concerns, interests, issues, and feedback on the Project. Follow-up interviews and meetings will occur during preparation of the EIS, as will interviews with local businesses and service providers.	Adjacent and nearby non-involved landholders and residents Local businesses and service providers Community groups Traditional Owners
Project Information Sheets No. 2 & No. 3	Project information sheets to distribute information about the Project to the broader community. No. 2 will provide a Project update and outcomes of the scoping phase activities. No. 3 will provide a Project update and outcomes of the technical studies completed as part of the EIS, following completion of the EIS and SIA reports.	State Government Local Government Traditional Owners Involved landholders Adjacent and nearby non-involved landholders and residents Community groups Wider community Local businesses and service providers Local media
Questionnaire / survey	Questionnaires/surveys to scope and assess potential issues, impacts and opportunities of the Project. Questionnaires/surveys will be issues throughout Phase 2 either through phone or face-to-face interviews or email.	Involved landholders Adjacent and nearby non-involved landholders and residents Local businesses and service providers

Mechanisms	Description	Targeted Stakeholder Group
Website / hotline / email	Platforms and tools that provide the opportunity for the wider community and public to engage with the Project. They allow the proponent to provide information about the Project and the community to provide feedback outside of dedicated consultation periods. The website, hotline and email address will be monitored and updated when required during Phase 2.	Traditional Owners Involved landholders Adjacent and nearby non-involved landholders and residents Community groups Wider community Local businesses and service providers Local media
Media release	A holding statement outlining key Project messages in local media was developed in April 2021. Media releases will be developed as required throughout Phase 2.	Local Government Traditional Owners Involved landholders Adjacent and nearby non-involved landholders and residents Community groups Wider community Local businesses and service providers Local media
Community information sessions	Informal public 'drop in' sessions in a community facility or venue to provide Project information and opportunity for the public to pose questions and provide feedback about the Project. The Proponent is also able to visually share results of the technical studies undertaken for the EIS. Community information sessions will be scheduled in multiple locations/towns during Phase 2. A second round of sessions will likely be undertaken prior to EIS lodgement.	Wider community Local businesses and service providers

4.4 Agency Engagement

The engagement program to inform the scoping phase (Phase 1) for the Project has included initial briefings with relevant government agencies. These briefings included an overview of the Project, discussed the approvals processes and sought feedback on issues considered to be relevant to the EIS.

The following NSW Government agencies have been briefed on the Project:

- DPIE – Energy Assessments pre-scoping meeting 6 May 2021
- Mid-Western Regional Council – meetings on 5 and 21 April 2021
- Warrumbungle Shire Council – meetings on 29 March and 5 April 2021
- Mid-Western Regional Council, Planning Directorate – letter correspondence on 4 May 2021, providing an overview of the Project and requesting initial feedback with an offer to meet
- Transport for NSW – letter correspondence on 4 May 2021, providing an overview of the project and requesting initial feedback with an offer to meet

- ARTC – letter correspondence on XX providing an overview of the project and requesting initial feedback with an offer to meet
- Crown Land – letter correspondence on 19 May 2021, providing an overview of the Project and requesting initial feedback with an offer to meet. Response from Crown Land was received on 25 May 2021, providing the following comment:

  As Crown roads have been identified in the Project area, the following needs to be considered as part of the detailed assessment phase:

  - *there are a number of Crown roads within the Project site currently under tenure*
  - *the Crown roads within the Project site provide legal but may not provide practical access*
  - *the proponent should not rely on these Crown roads for practical access to the Project site*
  - *if any infrastructure or construction is proposed on Crown roads, the consent of the Minister for Water, Property and Housing must be obtained, via this department, in the first instance*
  - *the department is a landholder within the Project Site and is required to be referenced prior to any use or occupation of any Crown land.*

As noted earlier, RES has been consulting with Transgrid regarding the location of future REZ transmission infrastructure, and the connection process for projects connecting to REZ infrastructure and would continue to consult with TransGrid throughout the EIS phase.

During the preparation of the EIS, the agencies listed above will continue to be consulted on the EIS findings. Additional government agencies that will be consulted include:

- DAWE
- EPA
- Department of Primary Industries (DPI) Agriculture
- Local Land Services (LLS)
- Regional NSW – Mining Exploration and Geoscience (MEG)
- Water NSW / National Resources Access Regulator (NRAR)
- DPIE Water
- DPIE Biodiversity Conservation Division (BCD)
- Rural Fire Service (RFS)
- Fire and Rescue NSW
- Heritage NSW.

5.0 Preliminary Environmental Assessment

A preliminary environmental and social assessment has been undertaken for the Project involving consideration of project-specific and cumulative impacts. The identification of constraints/issues for consideration has been informed by the NSW draft *Scoping an Environmental Impact Statement* guideline (DPIE, 2017), *Large-scale Solar Energy Guideline* (DPE, 2018) and standard SEARs.

Potential Project issues have been separated into 'key issues' and 'other issues' as part of the preliminary environmental and social assessment. Key issues are those where there may be some material impact based on the information that is currently available. Other issues are those that are unlikely to have a material impact based on the information at hand. This may change as the EIS is developed and specialist investigations are completed including community and stakeholder engagement.

Table 5.1 provides a summary of the key issues and other issues, potential impacts, preliminary proposed mitigation controls, and proposed assessment approach. The following subsections provide further detail on the preliminary analysis undertaken and scope of the assessments proposed to be prepared for the EIS.

Table 5.1 Preliminary environmental assessment

Issue	Potential Project impacts	Preliminary mitigation measures	Issue level	Assessment approach
Biodiversity	• Loss or modification of terrestrial habitats due to vegetation clearing • Impact to threatened species or endangered ecological communities • Spread of weeds across the Project Area due to construction activities and operational management • Cumulative biodiversity impacts	• Detailed site-specific assessment as part of the EIS • Project strategically designed to avoid and/or minimise impacts where practicable • Implementation of mitigation measures • Implementation of construction and operational management plans	Key issue	Specialist assessment for EIS
Heritage	• Potential impacts to Aboriginal and/or historic heritage objects or heritage values in the Project Area	• Detailed site-specific assessment as part of the EIS, including consultation with relevant Indigenous stakeholders • Project strategically designed to avoid impacts (if required) • Implementation of mitigation measures (if required) • Implementation of construction and operational environmental management plans	Key issue	Specialist assessment for EIS
Visual amenity	• Impact to current scenic landscape/character of the locality • Potential night lighting • Loss of visual amenity of adjoining landholders • Cumulative visual impacts	• Detailed site-specific assessment as part of the EIS • Project strategically designed to avoid and/or minimise impacts where practicable • Implementation of mitigation measures such as landscaping	Key issue	Specialist assessment for EIS

Issue	Potential Project impacts	Preliminary mitigation measures	Issue level	Assessment approach
Noise and vibration	• Noise and vibration disturbance associated with increased road traffic and works during the construction phase • Noise and vibration associated with construction methodologies e.g. pile driving. • Noise and vibration disturbance associated with the operations on the sub station and other infrastructure. • Cumulative noise and vibration impacts	• Detailed site-specific assessment as part of the EIS • Implementation of appropriate mitigation measures • Implementation of a construction noise and vibration management plan • Operational Management Plan including hours of operations, parking and deliveries.	Key issue	Specialist assessment for EIS
Traffic and transport	• Increased traffic on local roads during the construction phase • Disruption to traffic due to heavy vehicle delivery of Project materials to site • Damage to roads caused by additional trucks movements and turning paths. • Disruption to traffic due to road upgrade works • Trucks on roads at the same time as school children being picked up/dropped off from school. • Cumulative traffic and transport impacts	• Detailed site-specific assessment as part of the EIS • Implementation of a construction traffic and access management plan • Operational Management plan including hours of operations, parking and deliveries.	Key issue	Specialist assessment for EIS
Land use conflict	• Change in land use • Reducing BSAL area • Cumulative impacts with other nearby developments	• Detailed assessment of the compatibility of the development with existing land uses during construction, operation and after decommissioning • LUCRA as part of the EIS.	Key issue	EIS chapter
Socio-economic	• Land use changes • Property valuation • Economic impacts locally and regionally (positive and negative) • Community consultation	• Community and Stakeholder Engagement Plan • Community and stakeholder engagement as part of the EIS • Employment and Accommodation strategy	Key issue	Consultation with community and stakeholders Separate specialist assessments (social impact assessment and economic impact assessment for EIS)

Issue	Potential Project impacts	Preliminary mitigation measures	Issue level	Assessment approach
Water and soil resources	• Potential soil erosion associated with land clearing during construction and runoff from solar modules during operation • Water supply for construction and operational purposes including grazing. • Increase in impervious surfaces due to new substation and potential run off issues.	• Detailed site-specific assessment as part of the EIS • Implementation of construction and operation environmental management plans • Detailed project design • Erosion and Sediment control plan in CEMP. • Stormwater management and design.	Other issue	Specialist assessment for EIS (water resources) EIS chapter (soil resources)
Hazards and risks (incl bushfires)	• Risk to human health and infrastructure from bushfires, spontaneous ignition, electromagnetic fields	• Project designed to manage risks • SEPP 33 considerations • Implementation of appropriate controls, emergency response management measures, and management of infrastructure on surrounding land	Other issue	EIS chapter
Waste	• Generation of waste associated with construction and operation	• Implementation of a waste management plan	Other issue	EIS chapter
Air quality	• Elevated dust levels associated with construction works and transport movements	• Implementation of appropriate controls as part of a construction environmental management plan (CEMP)	Other issue	EIS chapter
Decommissioning and rehabilitation	• Potential for various environmental impacts from decommissioning works • Potential for various environmental impacts from rehabilitation practices	• Commitments to appropriate decommissioning and rehabilitation practices following cessation of Project operation	Other issue	EIS chapter

5.1 Biodiversity

As discussed in **Section 3.2.2**, a BAM assessment and BDAR are required for a SSD. The biodiversity development assessment has commenced with preliminary ecological investigations undertaken to ground-truth existing regional vegetation mapping and results of database searches (provided in **Appendix C**). As part of this assessment, areas potentially conforming to Category 1 – Exempt Land under the *Local Land Services Act 2016* (LLS Act) were identified within the Project Area. **Figure 5.1** shows land within the Project Area that has been mapped as Category 1 – Exempt Land. Areas that are mapped with a low confidence (as identified on **Figure 5.1**) will be verified during further ecological investigations carried out as part of the EIS.

Table 5.2 shows the results of the preliminary vegetation mapping. Much of the Project Area has been mapped as Category 1 – Exempt Land, but the areas with native vegetation are primarily box-gum woodland or derived native grassland comprising rough-barked apple (*Angophora floribunda*), red gum

(*Eucalyptus camaldulensis*), yellow box (*E. melliodora*), and Blakely's red gum (*E. blakelyi*). The Project Area also contains a large number of paddock trees.

It is noted that detailed vegetation mapping has not yet been completed and extensive updates to the preliminary mapping will be necessary for the Project as it progresses, particularly in relation to the allocation of the derived native grasslands components of the PCTs. Detailed BAM Plots will be undertaken to verify the PCTs.

Table 5.2 Preliminary PCTs and their extent in the Project Area

Plant community type	Possible TEC*	Preliminary area (ha)	Likely need for mapping refinement in the future
381 - Rough-barked Apple - Yellow Box grass/shrub footslope open forest	1	73	High
81 - Western Grey Box - cypress pine shrub grass shrub tall woodland	2	374	High
318 - Mugga Ironbark -Tumbledown Red Gum - Red Box - Black Cypress Pine open forest	0	20	High
Exotic Grassland	N/A	890	Moderate

*Possible Threatened Ecological Community (TECs) (further analysis is required to confirm):
1: White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (critically endangered under BC Act and EPBC Act)
2: Inland Grey Box Woodland and Derived Native Grassland (endangered under BC Act and EPBC Act)

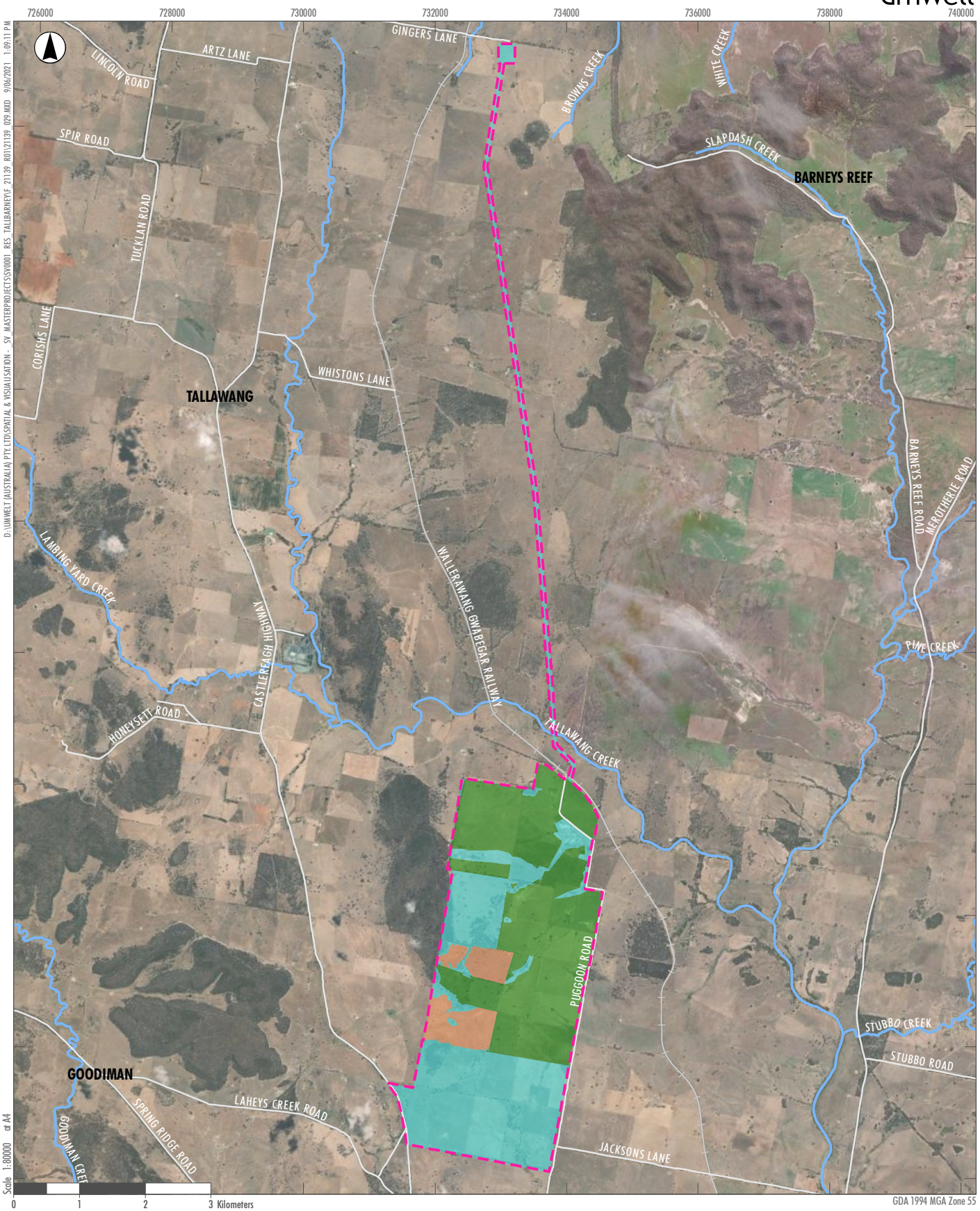
Of the three PCTs identified in the Project Area, PCT 381 has the potential to conform to the *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* which is listed as critically endangered under both the NSW BC Act and Commonwealth EPBC Act. PCT 81 has the potential to conform to Inland Grey Box Woodland and Derived Native Grassland (endangered under BC Act and EPBC Act). Further analysis of the PCTs and potential TECs occurring within the Project Area will be completed as part of the BDAR and documented in the EIS.

Preliminary surveys for select species-credit species have been completed and additional targeted surveys will be completed within the Project Area as required by the BAM. Preliminary targeted surveys, completed in October 2020, did not identify any species-credit species. These surveys targeted the following species:

- Bush stone-curlew (*Burhinus grallarius*)
- Koala (*Phascolarctos cinereus*)
- Pink-tailed worm-lizard (*Aprasia parapulchella*)
- Grey-headed flying fox (*Pteropus poliocephalus*)
- Various threatened flora species including Ausfeld's wattle (*Acacia ausfeldii*), pine donkey orchid (*Diuris tricolor*), silky Swainson-pea (*Swainsona sericea*), hoary sunray (*Leucochrysum albicans* var. *tricolor*), fairy bells (*Homoranthus darwinioides*), *Prostanthera discolor*, Tarengo leek orchid (*Prasophyllum petilum*), smooth bush-pea (*Pultenaea glabra*), small purple-pea (*Swainsona recta*), Austral toadflax (*Thesium australe*), *Tylophora linearis*, Keith's Zieria (*Zieria ingramii*), bluegrass (*Dichanthium setosum*), *Commersonia procumbens*, and *Euphrasia arguta*.

Ecosystem-credit species may occur in the Project Area. The likelihood of occurrence will be assessed as part of the EIS following further vegetation mapping. One ecosystem-credit species, the grey-crowned babbler (*Pomatostomus temporalis temporalis*), is known to occur in the Project Area as it was sighted during field surveys.

Following the completion of the detailed vegetation and species surveys, a BDAR will be prepared to report the findings of the assessment, including the outcomes of a BAM calculator assessment identifying any biodiversity credits that will require offsetting for the Project.



Legend

- Tallawang Solar Farm Project Area
- Category 1 Land - High Confidence
- Category 1 Land - Low Confidence
- Project Area to be categorised during the EIS

FIGURE 5.1

Category 1 Land - High Confidance Exempt Land,
Category 1 Land - Low Confidance Exempt Land
and Project Areas to be Assessed during the EIS Investigations

Image Source: ESR Basemap Data source: RES Australia (2021), NSW DFSI (2020), MinView (2021)

5.2 Heritage

5.2.1 Aboriginal Heritage

The Project Area falls within the Mudgee Local Aboriginal Land Council (LALC) area and within the bounds of a registered Native Title claim (NC2018/002 - Warrabinga-Wiradjuri #7). Desktop review of several databases were undertaken to identify any potential Aboriginal heritage objects or places in the Project Area, with the results summarised in **Table 5.3**. No recorded items of Aboriginal cultural heritage value are located in the Project Area. The closest item (an artefact scatter, AHIMS 36-2-0040) is located adjacent to the Castlereagh Highway at the south-western corner of the Project Area, approximately 100 m from the boundary of the Project Area. This site contains two artefact scatters located 8 m apart on the eastern shoulder of the Castlereagh Highway.

Table 5.3 Aboriginal heritage database search results

Database	Search date	Results
NSW Aboriginal Heritage Information Management System (AHIMS)	March 2021	No previously recorded sites are located within the bounds of the Project Area. However, one artefact scatter (AHIMS 36-2-0040) is recorded as being approximately 100 m west of the Project Area, as shown in **Figure 5.2**. Detailed project design will seek to avoid this registered site.
National Native Title Tribunal (spatial data)	February 2021	One Native Title Claim has been registered in the Project Area: Warrabinda-Wiradjuri #7 (NC2018/002) was entered on the Register of Native Title Claims on 22 November 2018. This is an active Native Title application. No determined claims or Indigenous Land Use Agreements are in place for the Project Area.
Heritage lists: • **World Heritage List** • **National Heritage List** • **Commonwealth Heritage List** • **State Heritage Inventory** • **Goulburn Mulwaree LEP.**	February 2021	No World Heritage Properties, National Heritage Places or Commonwealth Heritage Places were identified in or within 10 km of the Project Area. No Aboriginal Places listed under the NSW NPW Act or Heritage Act were identified in the Project Area. No items listed under the Mid-Western Regional LEP were identified in the Project Area.

An Aboriginal Cultural Heritage Assessment (ACHA) will be undertaken as part of the EIS in accordance with the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH, 2011) and the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010). The ACHA will include consultation with Aboriginal parties in determining and assessing impacts and developing mitigation measures for the Project, having regard to the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW, 2010 a). The artefact scatter recorded near the Project Area (AHIMS 36-2-0040) will be ground-truthed during field surveys and avoided by the Project.

5.2.2 Historic Heritage

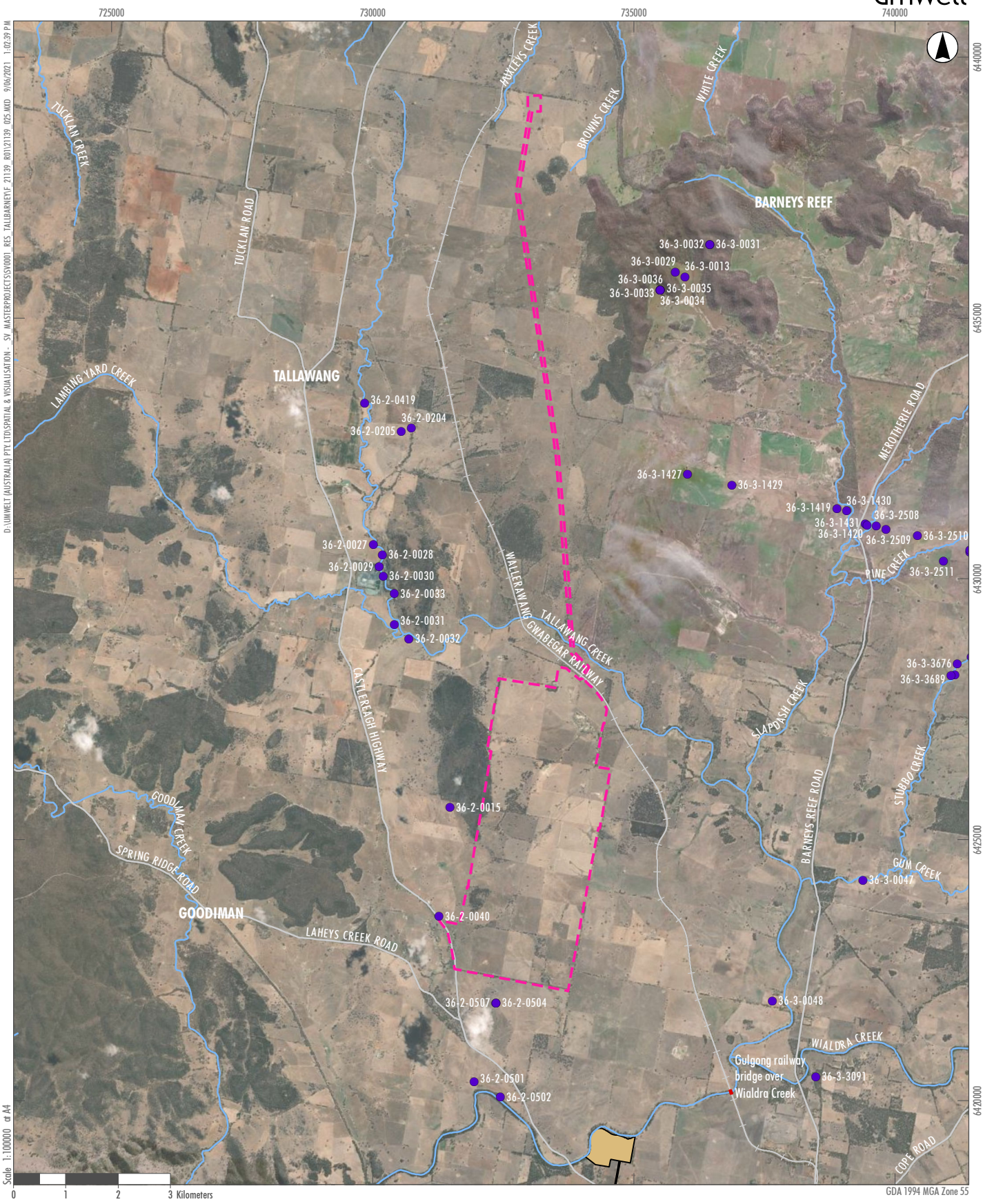
Desktop review of several databases was undertaken to identify any potential historic heritage values in the Project Area. As discussed in **Table 5.3**, no listed historical heritage items were identified within or in proximity the Project Area. This includes items on the World, National and Commonwealth Heritage lists, in addition to items listed on the State Heritage Inventory and Mid-Western Regional LEP.

The closest State listed heritage site is the Gulgong railway bridge over Wialdra Creek, which is located approximately 6.4 km southeast of the Project Area (**Figure 5.2**). The bridge was built in 1909 as part of the extension of the railway from Gulgong to Dunedoo. Construction of the bridge was reportedly a significant challenge, with numerous reports around the sinking of the bridge cylinders "through the drift sand to a very hard and uneven basalt at the bottom of the creek" (Gulgong-Dunedoo Railway, 1909). The bridge was added to the NSW State Heritage Register on 2 April 1999.

There are several local heritage sites located in the region surrounding the Project Area. The closest site, "The Lagoon" Homestead, is located approximately 6.1 km southeast of the Project Area. This country house was built in the 1950s from red brick with a concrete tiled roof. It was designed in line with solar passive design principals, featuring a bell-shaped roof with pergola to the north and high double timber and glazed doors opening to a long verandah (Department of Premier and Cabinet, 2020).

None of these local heritage sites will be impacted by the Project.

An assessment of potential impacts on historic heritage will be undertaken as part of the EIS. The assessment will be prepared with regard to the *NSW Heritage Manual* (NSW Heritage Office, 1996), relevant Heritage Council of NSW guidelines and with consideration of the principles contained in the *Australia ICOMOS Charter for Places of Cultural Significance* (Australia ICOMOS Incorporated, 2013).



Legend

- Tallawang Solar Farm Project Area
- AHIMS Site
- State Heritage Register

Environmental Planning Instrument - Heritage

- Item - General

FIGURE 5.3

Recorded Heritage Items in Proximity to the Project Area

Image Source: ESR Basemap Data source: RES Australia (2021), NSW DFSI (2020), NSW Department of Premier and Cabinet (2021), NSW Government (2021)

5.3 Visual Amenity

The Project Area is located approximately 5 km north of Beryl and 8 km north of Gulgong, with Tallawang about 7 km to the northwest. A preliminary visual analysis was undertaken to identify the Project's visibility from potential dwellings (receivers) on neighbouring properties. This involved a desktop assessment based on aerial photography and contour data. These receivers may not all be residences (some are likely to be sheds and therefore not sensitive receivers), and this will be further investigated and confirmed as part of the EIS process.

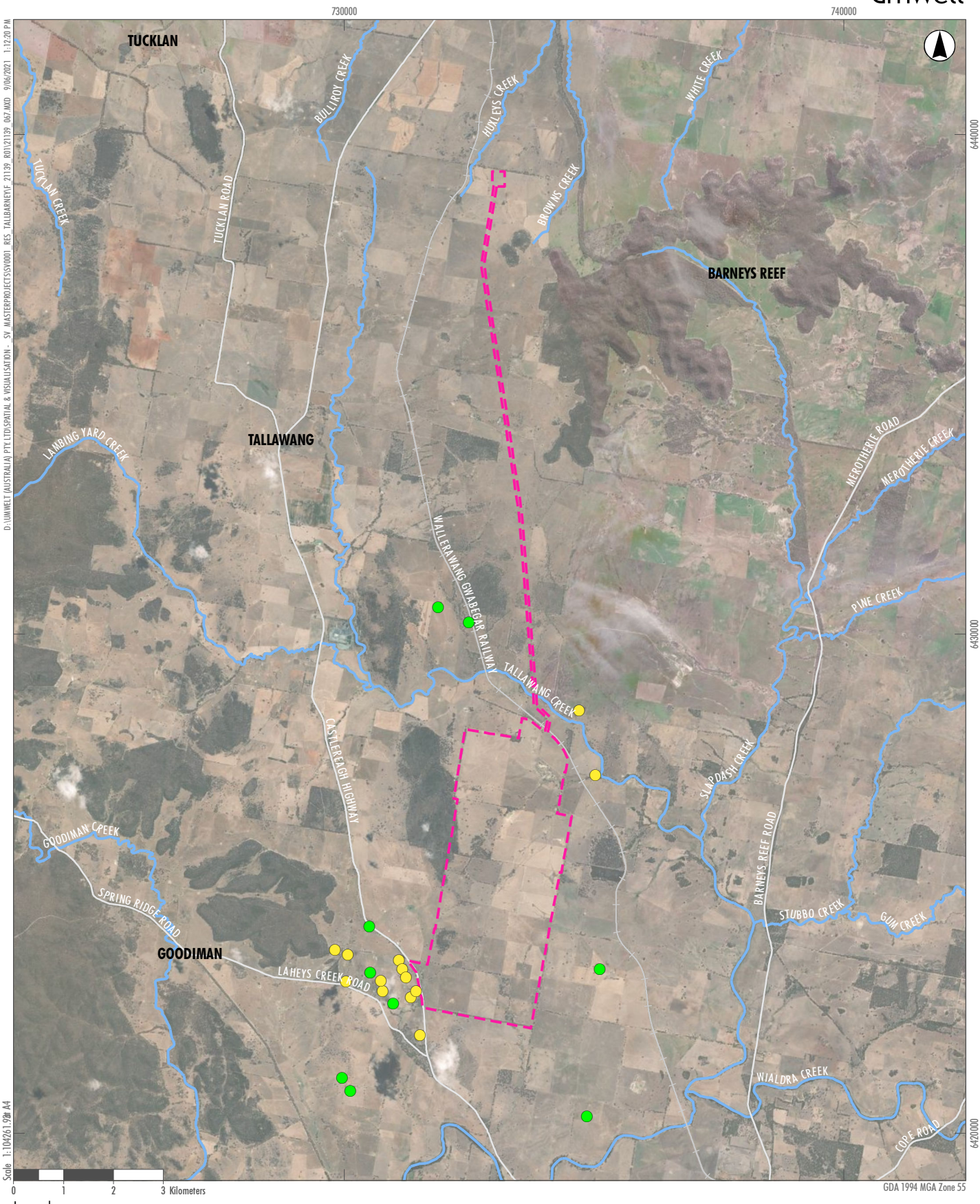
A total of 22 potential non-involved receivers were identified within a 2.5 km radius of the Project Area boundary to have potential views of the proposed solar farm (**Figure 5.3**). Of these, the preliminary visual analysis determined that:

- No viewpoints would have high visibility
- Thirteen viewpoints would potentially have moderate visibility
- Nine viewpoints would potentially have low visibility.

A detailed Visual Impact Assessment (VIA) will be prepared as part of the EIS process. The VIA will include field surveys to verify which of the preliminary receivers are residences and to identify the location of any other sensitive receivers located outside the 2.5 km radius of the site, including elevated rural residences on the fringe of Gulgong and at lookouts such as Flirtation Hill and in Yarrobil National Park. The VIA will also assess the visual impact of the overhead transmission line and Barneys Reef substation, as well as potential impacts to the Gulgong Aero Park (approximately 8 km east of the Project Area).

The VIA will involve:

- Field investigations to identify and assess the landscape character and visual catchment of the Project, including identifying visually sensitive receiver with consideration for all influencing factors such as topography, relative distance, perspective, orientation and existing vegetation that may obscure views of the Project
- Determining the sensitivity of existing viewpoints
- Assessing the Project's visual impacts, based on the magnitude of impact upon the sensitive viewpoints
- Assessing the Project's impact on landscape character, based on the sensitivity of the existing landscape character and extent of change likely to be caused by the Project on landscape character
- Broadly investigate and assess glare, reflectivity and night lighting
- Photomontages of the Project from key viewpoints, without landscape mitigation and with landscape mitigation
- Describe proposed mitigation measures to reduce visual impacts, including the preparation of a preliminary Landscape Plan to identify indicative perimeter planting for the purpose of landscape screening of the Project.



Legend

- Tallawang Solar Farm Project Area
- Moderate Visibility
- Low Visibility

FIGURE 5.4

Surrounding Receivers and Potential Visibility of the Project

Image Source: ESR Basemap Data source: RES Australia (2021), NSW DFSI (2020)

5.4 Noise and Vibration

Potential noise impacts associated with the Project will be primarily associated with construction activities and will have the potential to affect rural properties located within the vicinity of the Project Area.

A Noise and Vibration Impact Assessment (NVIA) will be prepared as part of the EIS in accordance with relevant NSW guidelines including the *Noise Policy for Industry* (EPA, 2017), *Interim Construction Noise Guideline* (DECC, 2009) and *NSW Road Noise Policy* (DECCW, 2011). The NVIA will include the following components of work:

- Establishing the relevant levels of background noise using minimum noise levels specified in the *Noise Policy for Industry*
- Undertaking predictive noise modelling of the Project's construction and operation activities
- Assessing the road traffic noise during construction activities
- Assessing any vibration impacts at sensitive receivers
- Identifying any reasonable and feasible mitigation and management measures to reduce noise impacts.

5.5 Traffic and Transport

The construction phase of the Project will result in increased traffic movements by both lightweight vehicles transporting construction personnel and light construction materials, and heavy vehicles transporting the solar farm and BESS infrastructure equipment. Traffic increases associated with the operational phase of the Project will be minimal and will generally only involve the movement of light vehicles transporting operational staff around the site intermittently.

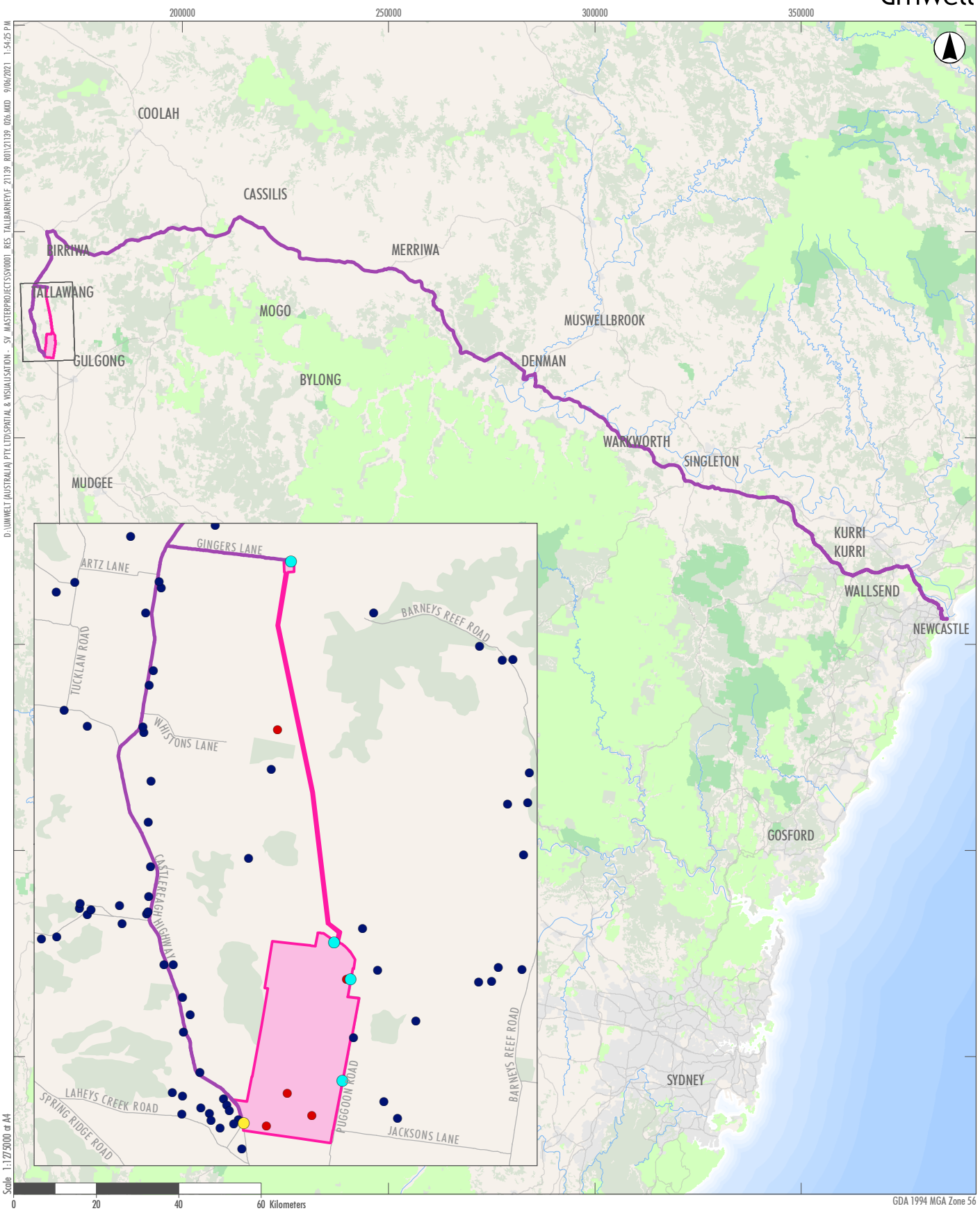
All Project components will be delivered to site via truck from the Port of Newcastle, which has previously been used for delivery of wind farm infrastructure so would be suitable for delivering solar farm infrastructure. The Port of Newcastle is located approximately 230 km southeast of the Project Area.

Major components of the Barneys Reef substation and overhead transmission line will be delivered to site via Gingers Lane, as shown on **Figure 5.4**. Trucks would travel from the Port of Newcastle along the Golden Highway to the Castlereagh Highway before turning onto Gingers Lane. Major solar and battery components will be delivered along the same route via the Golden Highway and Castlereagh Highway, using the southern access point to the solar farm site directly off the Castlereagh Highway (**Figure 5.4**). Three alternative access points to the proposed solar farm site are proposed from Puggoon Road. These would not be the primary construction access point and would only be available for emergencies and / or movement of cattle or sheep stock. The proposed access points and routes will be confirmed and assessed during the EIS process.

A Traffic Impact Assessment (TIA) will be undertaken as part of the EIS to assess the potential transport routes required for the construction of the Project and any potential impact to the road network. The TIA will be undertaken in accordance with relevant NSW Government guidelines and assessment standards including *Guide to Traffic Generating Developments* (RTA, 2002), the Austroads *Guide to Road Design* (2015), *Guide to Traffic Management* (2020) and relevant standards. The TIA will include:

- Reviewing and assessing the existing road network

- Reviewing and assessing the proposed site layout including vehicle access, onsite vehicle passage, and parking provisions
- Field measurements at proposed site access locations and in selected areas along the proposed traffic routes (if data is not readily available)
- Assessing the likely traffic impacts of the Project during the construction and operational phases of the Project, including estimation of peak traffic volumes generated by the Project and impacts on the existing road network, evaluation of traffic impacts on surrounding roads and intersection (particularly in relation to the capacity and condition of the road network), and identification of any traffic-related safety implications of the Project
- Identifying any mitigation and management measures that may be required to reduce traffic impacts.



Legend

- Tallawang Solar Farm Project Area
- Primary Project Access
- Secondary Access
- Involved Landholder Dwelling
- Non-involved Landholder Dwelling
- Transport Route
- National Parks (NPWS Estate)
- State Forest

FIGURE 5.5

Access and Transport Route

Image Source: Data source: Geoscience Australia; Forestry Corporation of NSW (2019); DSFI (2017); NPWS Estate (2019)

5.6 Land Use Conflict

The Project Area is located within a rural setting and has been subject to extensive clearing associated with past grazing activities. Cropping and grazing are currently the main land use in the Project Area and adjoining areas.

The Project Area is zoned RU1 Primary Production under the Mid-Western Regional LEP, with a portion of the Project Area mapped as BSAL (**Figure 2.4**). The Project will result in a change in land use from agricultural to electricity generation, although the proponent is planning for grazing land uses to continue within the solar farm's footprint.

Following consultation with landholders, the Project Area was chosen to allow for the continuation of onsite grazing within the site during the operational phase of the Project. The proponent has successfully co-located ongoing agricultural activity with other wind and solar projects in Australia. This would create an agrisolar land use with the co-existence of agriculture and solar power generation.

The EIS will include a Land Use Conflict Risk Assessment of the impact of the Project on existing land use, including on agricultural production.

5.7 Social

A comprehensive Social Impact Assessment (SIA) will be undertaken as part of the EIS. As discussed in **Section 4.0**, a key component of the SIA process will be community engagement, which will inform the assessment of social and economic impacts associated with the Project. The community consultation program has been designed in line with the following objectives:

- Foster a transparent and open approach to the development of the Tallawang Solar Farm and ensure 'no surprises' for the local community.
- Keep the community and stakeholders informed about the Tallawang Solar Farm through the provision of accurate, timely and factual project information.
- Identify and address community and stakeholder concerns and maintain transparency in the Project design, implementation and ongoing operations.
- Involve stakeholders and the community in key decisions and develop long term relationships and partnerships.
- Identify opportunities for local business involvement and local employment in the construction and operations of the Tallawang Solar Farm.

The proponent has prioritised early stakeholder engagement to build positive relationships with near neighbours and key stakeholders of the Project, to inform Project design and development, and to identify and understand perceived issues and impacts as early as possible in the planning and assessment process.

As part of Phase 1 of the SIA, a range of consultation activities were undertaken (see **Section 4.2**). The outcomes of this consultation were incorporated into the SIA scoping study (**Appendix A**), in which social impacts and issues relevant to the Project were preliminarily identified and evaluated.

The potential social impacts associated with Project are both positive (opportunities) and negative (impacts). As shown in **Table 5.4**, there are a range of potential social opportunities and impacts of the Project, occurring during the construction and/or operational phases of the Project. These opportunities and impacts will be assessed as part of the SIA, and additional opportunities and impacts may be identified. The preliminary impact evaluation is provided in the SIA scoping report at **Appendix A**.

Table 5.4 Potential social opportunities and impacts of the Project

Potential opportunities	Potential impacts
Construction	
• Local employment and training of construction workers, e.g. apprentices • Local procurement of materials • Permanent infrastructure and service improvements, e.g. to road networks • Improvement in the local economy due to accommodation and food requirements.	• Increased traffic causing a perceived or actual increase in road safety risks for local users and increase to commuter travel times • Changes to local population and composition and character of the community through an influx of construction workers, which could cause a shift in local relations, in particular associated with multiple concurrent and nearby major projects • Increased pressure on local facilities and services, particularly housing and accommodation, in particular associated with multiple concurrent and nearby major projects
Operation	
• Agrisolar land use involving co-location of solar farm with grazing and potentially other agricultural practices • Local employment and training for operational staff • A community development funding scheme • Neighbourly benefit program to provide further benefits to impacted/neighbouring properties	• Devaluation of adjacent or nearby properties • Changes to the landscape's visual character causing social amenity disturbance

5.8 Economic

The Project Area is located within the Mid-Western Regional LGA and in proximity to Gulgong and the localities of Tallawang and Beryl.

Based on a preliminary review of key community and demographic information (**Table 5.5**), these proximal residential locations can be characterised as follows:

- Key industries of employment include coal mining, beef cattle farming, managers, and technicians and trades workers
- Age distribution is varied, but older than the NSW median age
- Higher proportion of houses with no internet access compared to NSW
- Lower than NSW median housing costs (except for mortgage repayments in Tallawang).

Table 5.5 Selected demographic characteristics of key communities in the vicinity of the Project Area (ABS, 2016)

	Gulgong (SSC)	Tallawang (SSC)	Beryl (SSC)	NSW
Population	2,521	168	132	7,480,231
Median age	41	45	44	38
Private dwelling number	1,135	96	59	3,059,599

	Gulgong (SSC)	Tallawang (SSC)	Beryl (SSC)	NSW
Top industry of employment	Coal mining: 19.2%	Beef cattle farming (specialised): 16.1%	Aged care residential services: 21.1%	Hospitals (except psychiatric hospitals): 3.5%
Top occupation	Technicians and trades workers: 19%	Managers: 38.8%	Technicians and trades workers: 26.2%	Professionals: 23.6%
Median weekly family income	$1,343	$1,208	$1,375	$1,780
Median weekly rent	$250	$250	$270	$380
Median monthly mortgage repayments	$1,517	$2,037	$1,200	$1,986
Internet not accessed from dwelling	23.6%	19.2%	15.2%	14.7%

The Project will provide direct financial benefits to the regional and local community, involving:

- Infrastructure investment of the solar farm is approximately $760 million.
- Employment generation creating up to around 430 direct jobs during the construction phase with up to 7 direct jobs during the operational phase
- Indirect benefits to local services through the construction and operational phases
- Additional landowner income to involved landowners resulting in financial contributions to the local community. The Proponent is currently exploring options for a community fund and mechanisms to provide further benefits to neighbouring and impacted properties.

An Economic Impact Assessment (EIA) will be undertaken as part of the EIS process to determine the likely local and regional economic benefits arising from the Project and will identify potential economic impacts associated with the Project, including investment, employment, business participation, local wage stimulus, impact on accommodation, impact on agricultural activities, cumulative impacts, local economic stimulus, financial returns to Council, environmental benefits and tourism impacts.

5.9 Water and Soil Resources

The Project Area falls within the Cudgegong River Catchment, which drains into Lake Burrendong near Wellington, NSW. Lake Burrendong is formed from the damming of the Macquarie River, which continues downstream from Burrendong Dam for several hundred kilometres before flowing into the Barwon River in central-northern NSW (MDBA, 2020). The Project Area contains numerous unnamed first and second order streams that flow generally to the south to join Tallawang Creek and Wialdra Creek. Several farm dams are also located in the Project Area (**Figure 5.5**). The Project Area has not been mapped as within flood prone land under the Mid-Western Regional LEP.

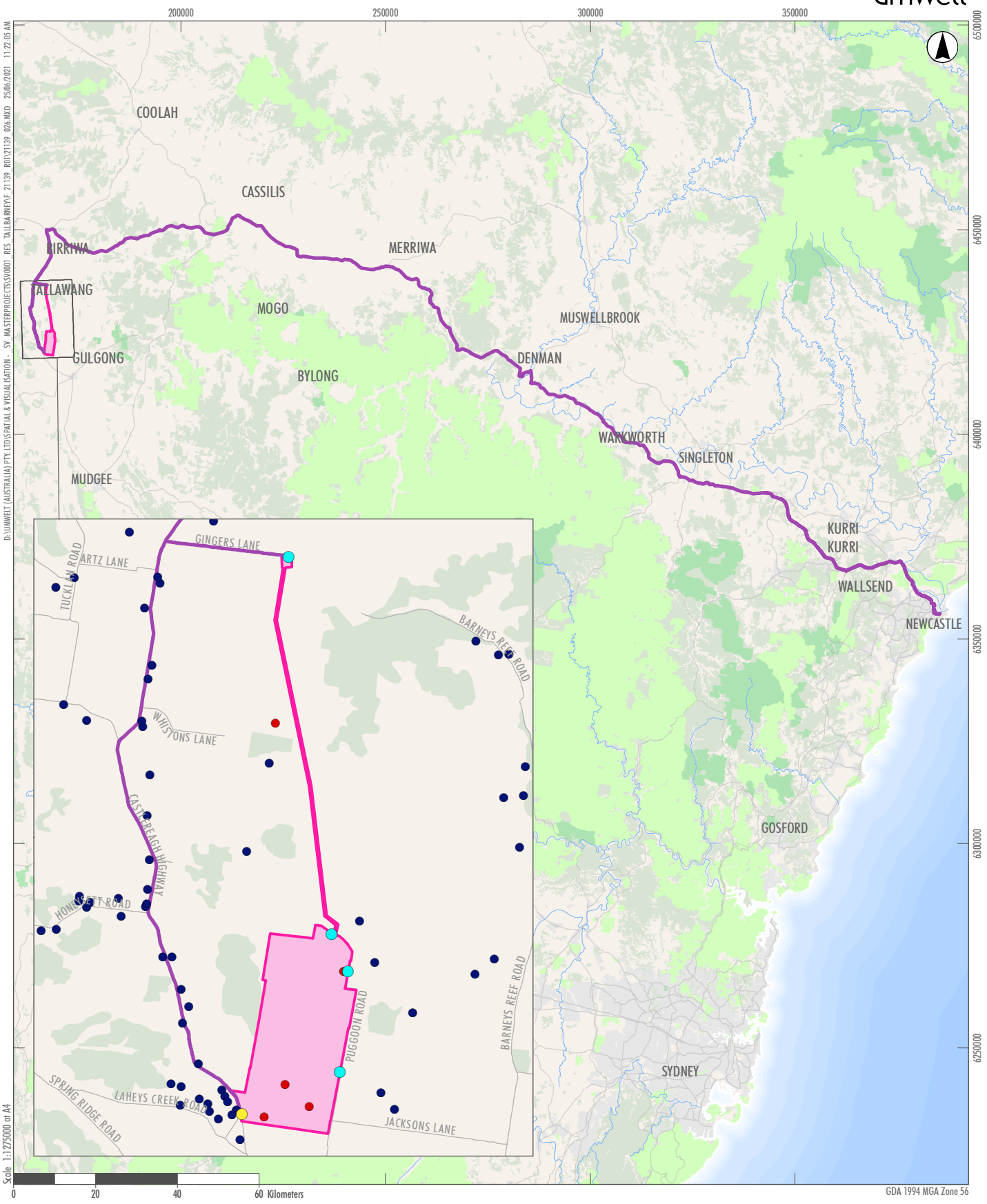
The preliminary layout for the Project has been designed to provide appropriate setbacks to these creeks to assist with minimising potential impacts on water flow, quality and aquatic ecology. The preliminary Project layout in **Figure 2.1** has included 40 m setbacks around marked watercourses. This exceeds the requirements of the NSW *Guidelines for riparian corridors on waterfront land* (Office of Water, 2012), which requires that first order streams have a setback of 10 m either side of the channel and second order streams have 20 m setbacks. The setbacks will be revised as the project progresses and design is refined. The location of waterbodies to be retained will be determined as the Project design progresses.

The Project Area is subject to the *Macquarie-Bogan Unregulated Rivers Water Sources 2012* and *NSW Murray-Darling Basin Fractured Rock Groundwater Sources 2020* WSPs. It is also potentially subject to the *NSW Murray-Darling Basin Porous Rock Groundwater Sources 2020* WSP. These WSPs deal with Sections 20 and 21 of the NSW WM Act, namely the establishment of water sharing provisions for particular water source. Water use required for the Project will be assessed against the relevant WSPs as part of the EIS.

Groundwater vulnerability mapping of the Mid-Western Regional LEP indicates that parts of the Project Area are groundwater vulnerable. As shown in **Figure 5.6**, the northern portion of the Project Area is groundwater vulnerable. Areas of groundwater vulnerability shown on the LEP mapping are subject to additional clauses under the Mid-Western Regional LEP, namely that the hydrological functions of key groundwater systems are to be maintained and vulnerable groundwater resources are to be protected from depletion and contamination as a result of development. Section 6.4 of the LEP specifies the development consent requirements of meeting these objectives. Site investigations undertaken as part of the EIS will confirm groundwater depths in the Project Area as this data is not currently available or publicly accessible.

The soils within the Project Area are classified as ferrosols and sodosols under the Australian Soil Classification Soil Type map of NSW (DPIE, 2020 a). The land is mapped as Land Class 3 and 5 under the NSW Land and Soil Capability Assessment Scheme (**Figure 2.4**). The areas of Land Class 3 are also classified as BSAL, indicating that it has high quality soil and water resources capable of sustaining high levels of productivity.

A Water Resources Impact Assessment (WRIA) will be undertaken as part of the EIS. This will consider potential impacts of the Project on water resources in the vicinity of the Project Area, including assessments on flooding (including modelling for 2, 5 and 100-year flood events), groundwater levels, erosion and sedimentation, surface- and groundwater quality, water users, and water sourcing and licensing. It will identify any mitigation and management measures to minimise potential impacts of the Project on water and soil resources.



Legend

- Tallawang Solar Farm Project Area
- Primary Project Access
- Secondary Access
- Involved Landholder Dwelling
- Non-involved Landholder Dwelling
- Transport Route
- National Parks (NPWS Estate)
- State Forest

FIGURE 5.5

Access and Transport Route

Image Source: Data source: Geoscience Australia; Forestry Corporation of NSW (2019); DSFI (2017); NPWS Estate (2019)

Legend

- Tallawang Solar Farm Project Area
- Groundwater Vulnerability

FIGURE 5.7

Areas of Groundwater Vulnerability

Image Source: ESR Basemap Data source: RES Australia (2021), NSW DFSI (2020)

5.10 Hazards and Safety

This section addresses potential hazards and safety risks associated with the Project including bushfire threat, spontaneous ignition and electromagnetic fields.

5.10.1 Hazard Analysis

The location of the proposed BESS will be subject to further assessment, including a preliminary hazard analysis (PHA) in accordance with *State Environmental Planning Policy No 33 – Hazardous and Offensive Development*. It is expected that a PHA incorporating a Level 1 Qualitative Risk Analysis and Level 2 Semi-quantitative Risk Analysis will be needed to satisfy DPIE requirements. The PHA will involve the following components of work:

- Screening of preliminary risks for all hazardous materials and dangerous goods to be stored and transported to/from the Project, including batteries
- Classifying and prioritising risks, and estimating societal risk, in accordance with the NSW *Multi-level Risk Assessment Guideline* (DPI, 2011)
- Analysing consequence and frequency for hazard scenarios identified as requiring further assessment in the qualitative risk assessment, undertaken in accordance with the NSW *Risk Criteria for Land Use Safety Planning* (Department of Planning, 2011).

5.10.2 Bushfire

NSW Rural Fire Service (RFS) bushfire prone land mapping (RFS, 2021) indicates that the Project Area is not located in land identified as bushfire prone. The Project Area has been subject to extensive clearing associated with agricultural land use, however there are some areas of remnant woodland and grassland which could form a fuel load capable of sustaining and spreading bushfire, particularly along the western boundary of the Project Area.

A Bushfire Threat Assessment will be undertaken as part of the EIS in accordance with the requirements of the RFS *Planning for Bush Fire Protection* (2019). Consultation with the RFS will also be undertaken during preparation of the EIS and a Bushfire Management Plan prepared.

5.10.3 Electric, Magnetic and Electromagnetic Fields

Electromagnetic fields (EMFs) are present where electric current flows. It is expected that electromagnetic field (EMF) risks associated with the Project will be below the International Commission on Non-Ionizing Radiation Protection (ICNIRP) *Guidelines for limiting exposure to time-varying electric and magnetic fields (1 Hz – 100 kHz)* (2010). A review of potential EMF risks associated with the Project will be undertaken, and suitable safeguards and mitigation measures will be proposed to reduce any potential risks.

5.11 Other Issues

The EIS will also address other potential impacts relating to the following matters:

- Waste – the EIS will classify and quantify the likely waste streams to be generated during construction and operation and describe measures to manage, reuse, recycle and dispose of this waste in accordance with relevant guidelines.

- Air quality and dust management – the EIS will assess potential air quality impacts of the Project in accordance with relevant NSW guidelines in relation to construction activities.
- Decommissioning and rehabilitation – the EIS will assess potential impacts of the Project arising from decommissioning and rehabilitation activities, particularly on the final landform and compatibility with existing land uses.

5.12 Cumulative Impacts

The *Large-scale Solar Energy Guideline* (DPE, 2018) contains requirements for assessing any cumulative impacts of a project with other developments (proposed, approved and operating), especially relating to biodiversity, visual, socio-economic and construction traffic impacts.

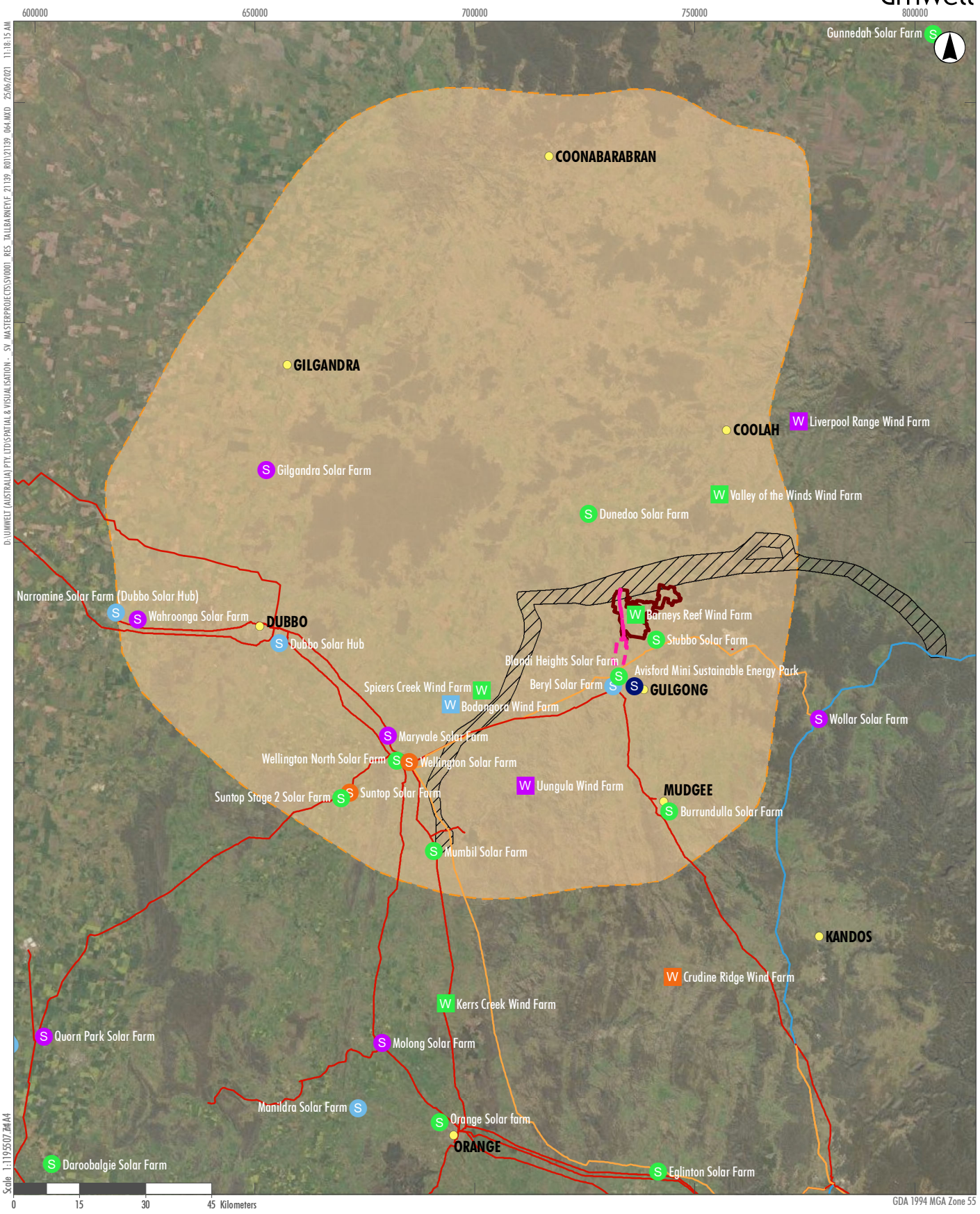
As discussed in **Section 3.1**, the Project Area is located within a REZ and there are therefore a number of other existing and proposed renewable energy projects within the region, as shown on **Figure 5.7**, including the proposed Barneys Reef Wind Farm project planned directly north of the Tallawang Solar Farm. Renewable energy developments within 100 km of the Project Area, including those that are operational, approved and in the planning phase, are listed in **Table 5.6**. The EIS will include an assessment of the potential cumulative impacts associated with the Project.

Table 5.6 Renewable energy developments within 100 km of the Project Area and proposed Barneys Reef Wind Farm

Renewable Development	Developer / Owner	Details	Status
Bodangora Wind Farm	Infigen Energy	113.2 MW wind farm, 33 wind turbines, 39 km southwest of the Project Area	Operational
Beryl Solar Farm	New Energy Solar	87 MW solar farm, 15 km south of the Project Area	Operational
Dubbo Solar Hub	Neoen	28 MW solar farm spread across two separate sites, 76 km west of the Project Area	Operational
Manildra Solar Farm	New Energy Solar	46.7 MW solar farm, located in Manildra	Operational
Crudine Ridge Wind Farm	CWP Renewables	134 MW wind farm, 37 wind turbines, 45 km south of Mudgee	Under construction
Wellington Solar Farm	Lightsource bp	200 MW solar farm, 7 km northeast of Wellington adjacent to proposed Wellington North Solar Farm	Under construction
Suntop Solar Farm	Photon Energy	189 MW(DC) solar farm, near Wellington	Under construction
Gilgandra Solar Farm	Neoen	50 MW solar farm, 25 km south of Gilgandra	Approved
Liverpool Range Wind Farm	Tilt Renewables	Up to 1,000 MW wind farm with up to 267 wind turbines, northwest of the Project Area near Coolah	Approved
Wahroonga Solar Farm	ITP Development	5 MW solar farm, west of Dubbo	Approved
Maryvale Solar Farm	Photon Energy	196 MW(DC) solar farm, north of Wellington	Approved
Wollar Solar Farm	Wollar Solar Development	290 MW solar farm, east of Project Area	Approved

Renewable Development	Developer / Owner	Details	Status
Quorn Solar Park	Renewable Energy Developments	80 MW solar farm with energy storage, north of Parkes	Approved
Molong Solar Farm	Amp Energy	39 MW solar farm,	Approved
Barneys Reef Wind Farm	RES	350 MW wind farm, up to 63 wind turbines, immediately to the north of the Project Area	In Planning
Valley of the Winds Wind Farm	UPC\AC Renewables	800 MW wind farm, up to 175 wind turbines, 45 km north-northeast of Project Area, near Coolah	In Planning
Dunedoo Solar Farm	ib vogt	55 MW solar farm with energy storage, 30 km north-northwest of the Project Area	In Planning
Stubbo Solar Farm	UPC\AC Renewables	400 MW solar farm with energy storage, 5 km east of Project Area	Approved
Suntop Stage 2 Solar Farm	Photon Energy	165 MW solar farm with energy storage and synchronous condenser, southwest of Wellington	In Planning
Wellington North Solar Farm	Lightsource bp	400 MW solar farm, 7 km northwest of Wellington adjacent to Wellington Solar Farm	In Planning
Uungula Wind Farm	CWP Renewables	400 MW wind farm, up to 97 wind turbines, east of Wellington	In Planning
Mumbil Solar Farm	Epuron	150 MW solar farm, 15 km south of Wellington	In Planning
Orange Community Renewable Energy Park	ITP Development	5 MW solar farm with energy storage, west of Orange	In Planning
Eglington Solar Farm	Neoen	200-250 MW solar farm, 6 km north of Bathurst	In Planning
Blandi Heights Solar Farm	Vena Energy	200 MW solar farm with energy storage, immediately to the south of the Project Area	In Planning

Several large non-renewable projects are also located near the Project area, including the operational Ulan Coal Mine Complex (located approximately 25 km east of the Project Area) and Moolarben Coal Complex (36 km east of the Project Area). CWO REZ transmission infrastructure, proposed by TransGrid, is currently in the planning phase, and will be located north of the Project. The transmission line corridor is shown in **Figure 5.7**.



Legend

- Tallawang Solar Farm Project Area
- Barneys Reef Wind Farm Project Area
- Indicative Central-West Orana Renewable Energy Zone
- Proposed Central West Orana REZ Transmission Corridor

Operating System Voltage (kV)

- 132kV
- 330kV
- 500kV

Solar Developments

- Operational
- Under Construction
- Approved
- In Planning
- Rejected

Wind Developments

- Operational
- Under Construction
- Approved
- In Planning

FIGURE 5.7

Renewable Energy Developments located within 100km of the project Area

Image Source: ESRI Basemap, Data source: DFSI (2020), NSW Government (2020)

6.0 Justification and Alternatives

6.1 Project Justification

The development of renewable energy projects aligns with both Federal and NSW commitments to increase renewable energy generation and reduce carbon emissions across the NSW and Australian economies.

The proposed location of this Project is within an identified REZ, which is a region identified by the NSW government to be targeted for renewable energy development. The NSW Government has indicated that these REZs will play a vital role in delivering affordable energy generation to help prepare the State for the expected retirement of thermal power stations over the coming decades. The government has also indicated that the REZs are expected to unlock a significant pipeline of large-scale renewable energy and storage projects, while supporting up to $20.7 billion of private sector investment in NSW regions and up to 3,900 construction jobs at their peak (DPIE, 2020 b).

Further detail regarding the strategic context and Project benefits of the development is provided in the following sections.

6.1.1 Federal and State Commitments

Australia is one of the 190 countries from around the world signed to the international climate change agreement (the Paris Agreement). The Paris Agreement aims to:

- Hold the increase in the global average temperature to below 2°C above pre-industrial levels, and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.
- Increase the ability [of nations] to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production.
- Make finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

The Paris Agreement seeks to meet its objectives by developing programs and mechanisms that:

- Require participating Parties to prepare and communicate greenhouse gas mitigation contributions. Parties have been expected to set mitigation targets for 2020, and then develop new targets every five years. Each successive target is expected to represent a larger mitigation effort than the previous target.
- Promote climate change resilience and adaptation.
- Provide mitigation and adaptation funding to developing countries.
- Foster mitigation and adaptation technology transfer between Parties.
- Require participating Parties to report progress towards their mitigation contributions on an annual basis.

Australia signed the Paris Agreement on 22 April 2016. Party obligations under the Paris Agreement will drive national greenhouse gas policy between 2020 and 2030. Australia's commitment to the Paris Agreement includes reducing greenhouse gas emissions by 26 - 28% on 2005 levels, by 2030 (Australian Government, 2020). Australia's Nationally Determined Contribution (NDC) prescribes an unconditional economy-wide target to reduce greenhouse gas emissions, and states that future policies will target emissions generated from energy use, industrial processes, agriculture, land-use, land-use change and forestry and waste (UNFCCC, 2015).

In order to reduce the emissions of greenhouse gases generated by the electricity sector, and to encourage additional generation of electricity from sustainable and renewable resources, the Australian Government introduced the Renewable Energy Target (RET) in 2009. The RET has been a successful initiative with the current target of 33,000 gigawatt-hours (GWh) being met in September 2019, more than one year ahead of schedule.

The NSW Government has developed its NSW Climate Change Policy Framework, which aims to deliver net-zero emissions by 2050 and make the state more resilient and responsive to climate change (OEH, 2016). Under the NSW Climate Change Policy Framework, NSW has committed to both follow the Paris Agreement and to work to complement national action.

The policy framework is being delivered through the following:

- The Climate Change Fund
- Developing an economic appraisal methodology to value greenhouse gas emissions mitigation
- Embedding climate change mitigation and adaptation across government operations
- Building on NSW's expansion of renewable energy
- Developing action plans and strategies.

In 2013 the NSW Government released the Renewable Energy Action Plan (REAP) and the NSW Energy Efficiency Action Plan (EEAP). The REAP aimed to increase the generation, storage and use of renewable energy in NSW, at minimum cost to customers and with maximum benefits to NSW (NSW Government, 2013). The three core goals of the REAP were to attract renewable energy investment, build community support for renewable energy and attract and grow expertise in renewable energy (NSW Government, 2013). Based on the implementation of the REAP, renewable energy is now well-placed to play a leading role in meeting NSW's energy needs into the future and has resulted in solar- and wind-generated electricity tripling during the five years the REAP was implemented.

The EEAP was a four-year strategic action plan aimed at improving energy efficiency in the NSW business, residential and public sectors. The EEAP included targets to realise annual energy savings of 16,000 GWh by 2020. The programs delivered by the NSW Government under the EEAP delivered savings to all participants in all target sectors, particularly businesses and low-income households (OEH, 2018). The peak load on the electricity network was also reduced, which helped reduce the need to invest in expanding electricity network infrastructure (OEH, 2018).

The Project will deliver clean, reliable and affordable energy and is well aligned with the objectives of the current Federal and State commitments to combat climate change and to provide affordable renewable energy to the community and businesses.

6.1.2 Local and Regional Renewables Context

The Project Area is mapped as an area with medium solar renewable energy source potential under the NSW REAP. There is a large number of renewable energy projects within this REZ at various stages of development, including several within 100 km of the Project Area, as discussed in **Section 5.12**. Solar farm projects contribute to the diversification of the State's energy mix and will help to significantly reduce energy costs.

6.1.3 Project Benefits

The Project will provide long-term, strategic benefits to the State of NSW, including:

- Renewable energy supply to assist with fulfilling the current obligations under State and Federal renewable energy targets.
- Providing for cleaner reliable electricity generation and assisting with meeting current load demand while reducing greenhouse gas emissions and the impacts of climate change.
- Providing regional investment in the NSW renewable energy sector.

The Project will also provide direct financial benefits to the regional and local communities, including:

- Infrastructure investment of the solar farm is approximately $760 million.
- Employment generation creating up to around 430 direct jobs during the construction phase with up to around 7 direct jobs during the operational phase.
- Indirect benefits to local services through the construction and operation phases.
- Additional landowner income to involved landowners resulting in financial contributions to the local community.

6.2 Project Alternatives

The Proponent has considered a range of alternative options for the Project throughout the design process to date, with the aim of minimising environmental and social impacts while maximising the potential for electricity generation. As the Project design and environmental assessment progresses, the Project will continue to be updated to meet these goals.

Project alternatives considered to date include:

- Alternative site locations based on:
    - Location with the CWO REZ
    - Proximity to the high voltage transmission network
    - Low environmental constraints including biodiversity values, flood risk, and visual impact on nearby receivers, with the "avoid, mitigate and manage" approach applied
    - Favourable terrain and soil types which facilitate an uncomplicated construction approach
    - High solar irradiance
    - Good road access and availability of main routes for site access
    - Ability to implement agrisolar.

- Alternative project layouts based on different solar farm designs using mature technology with a proven track record of large-scale implementation, including:
    - Fixed versus tracking options for PV module mounting: A single-axis tracking system was chosen for the Project as it allows for more efficient electricity generation than fixed tilt options, leading to more efficient land use. Tracking systems also have a lower visual impact as they minimise glare from the sun, which can occur when the sun is at low angles in the sky and the PV modules are not facing the sun.
    - Mono-facial versus bifacial PV modules: Bifacial PV modules were selected for the Project as they allow for more efficient electricity generation than traditional single-sided PV modules, leading to more efficient land use. The distance between the rows of modules is also larger for bifacial modules, which helps to minimise environmental and visual impacts of the Project and facilitate grazing.
    - AC versus DC battery technology: DC batteries were selected for the Project so that they can be distributed throughout the solar farm next to the PV modules rather than in a single centralised location, thereby minimising the visual bulk of the Project.
    - Dedicated versus shared grid connection with the proposed Barneys Reef Wind Farm: The solar farm will connect to the electricity grid via a shared connection with the Barney Reef Wind Farm. This has reduced the need for electrical infrastructure, thereby minimising land use for the Project and the visual impact.
    - The do-nothing approach. The Proponent considers the Project to be an important contributor to meeting Federal and State targets for greenhouse gas emission reductions and renewable energy targets (see **Section 6.1**), particularly as fossil fuel generators are progressively decommissioned over the coming years. By not progressing the Project, it would fail to meet these government objectives and to ensure reliable electricity supply into the future and would fail to provide the economic benefits described in **Section 6.1.3**.

7.0 Conclusion

This Scoping Report has outlined the proposed Tallawang Solar Farm and established the planning context for the development application, currently in the early planning phase. The Project will be assessed under Part 4 of the EP&A Act and will be classified as SSD under the SRD SEPP.

The Project is located within the CWO REZ established under the NSW Government's Electricity Strategy, which has been identified as a suitable location for renewable energy projects. The Project will contribute to achieving State and Federal commitments for establishing renewable energy generation within NSW.

The Project layout and design will be subject to further analysis and refinement as part of the EIS process, as informed by a range of specialist studies and community and stakeholder engagement.

All identified environmental and social issues will be subject to assessment as part of the EIS as detailed in **Section 4.4** and in accordance with the SEARs. Mitigation measures will be developed for inclusion in the EIS and will address the management of key issues and other issues identified in the assessment process.

In addition to providing long-term, strategic benefits to the State of NSW through provision of regional investment and cleaner electricity generation, the Project will also provide direct financial benefits to the regional and local community, including:

Infrastructure investment of the solar farm is approximately $760 million

- Employment generation creating up to around 1610 jobs during the construction phase with up to around 27 jobs during the operational phase
- Indirect benefits to local services through the construction and operation phases
- Additional landowner income to involved landowners resulting in financial contributions to the local community. The Proponent is currently exploring options for a community fund and mechanisms to provide further benefits to neighbouring and impacted properties, which will be progressed as the Project develops.

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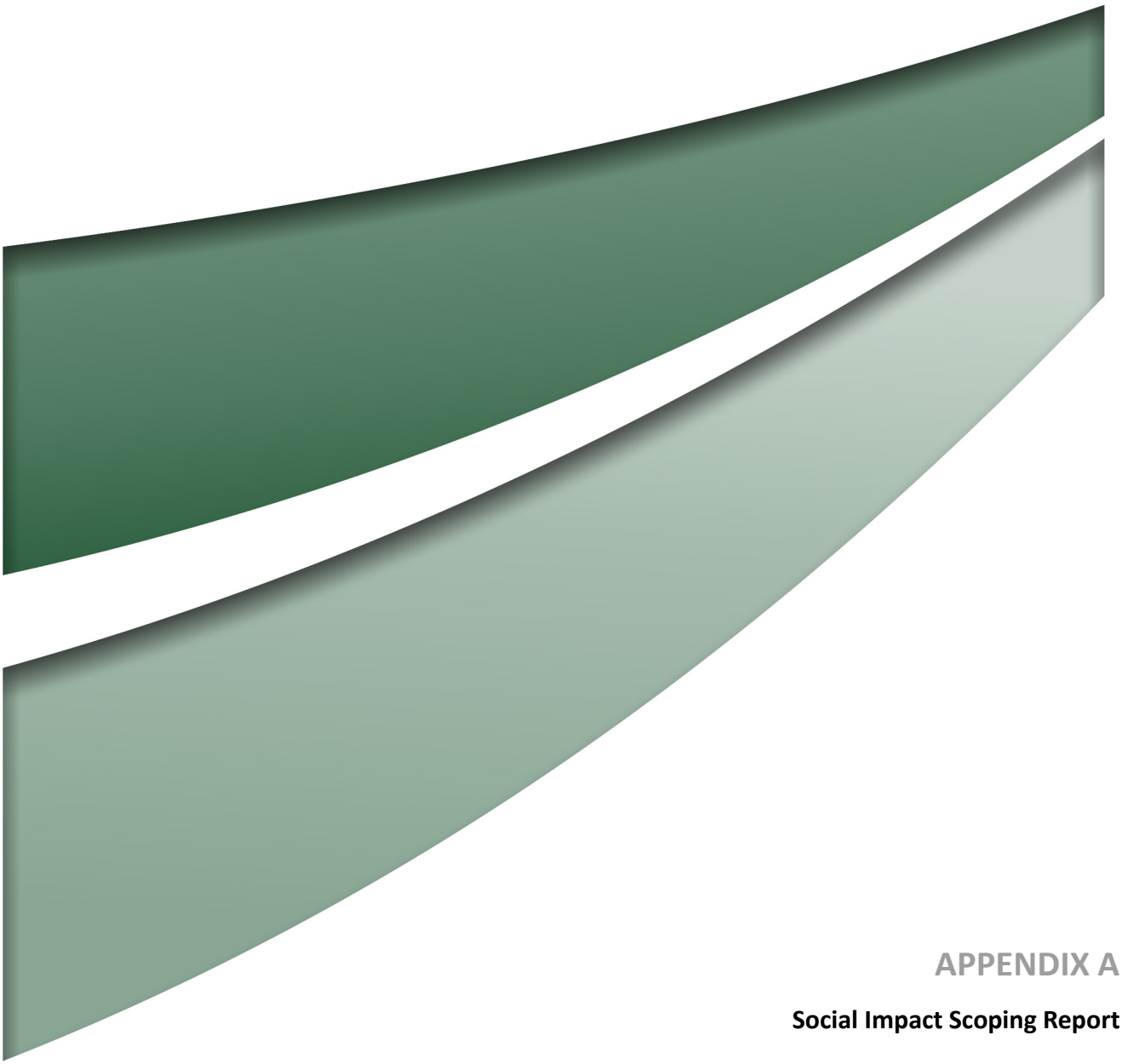
9.0 Glossary and Abbreviations

Term/Abbreviation	Definition
°C	Degrees Celsius
ABS	Australian Bureau of Statistics
AC	Alternating current
ACHA	Aboriginal Cultural Heritage Assessment
AHIMS	Aboriginal Heritage Information Management System
BAM	Biodiversity Assessment Methodology
BAM-C	Biodiversity Assessment Method Calculator
BC Act	NSW *Biodiversity Conservation Act 2016*
BDAR	Biodiversity Development Assessment Report
BSAL	Biophysical Strategic Agricultural Land
BESS	Battery Energy Storage System
CEMP	Construction Environmental Management Plan
CIV	Calculated intangible value
CLM Act	NSW *Contaminated Land Management Act 1997*
Crown Land Act	NSW *Crown Land Management Act 2016*
CWO REZ	Central West Orana Renewable Energy Zone
DECC	NSW Department of Environment and Climate Change (former)
DECCW	NSW Department of Environment, Climate Change and Water (former)
DPE	NSW Department of Planning and Environment (former)
DPI	NSW Department of Planning and Infrastructure (former)
DPIE	NSW Department of Planning, Industry and Environment (current)
EEAP	NSW Energy Efficiency Action Plan
EIS	Environmental impact statement
EMF	Electromagnetic field
EPA	Environment Protection Authority
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
EP&A Regulation	NSW *Environmental Planning and Assessment Regulation 2000*
FM Act	NSW *Fisheries Management Act 1994*
GW	Gigawatt
GWh	Gigawatt-hour
ha	Hectare
Heritage Act	NSW *Heritage Act 1977*
ICNIRP	International Commission on Non-Ionizing Radiation Protection
Involved Dwelling	Dwelling located on land owned by landholders involved in the Project
ISEPP	NSW *State Environmental Planning Policy (Infrastructure) 2007*
km	Kilometres

Term/Abbreviation	Definition
kV	Kilovolt
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area
LLS Act	Local Land Services Act
MDBA	Murray-Darling Basin Authority
MNES	Matter of National Environmental Significance
MW	Megawatt
NEM	National Electricity Market
NDC	Nationally Determined Contribution
NSW	New South Wales
NVIA	Noise and Vibration Impact Assessment
Non-involved dwelling	Dwelling located on land owned by landholders not involved in the Project
NPW Act	NSW *National Parks and Wildlife Act 1974*
NVR Map	Native Vegetation Regulatory Map
OEH	NSW Office of Environment and Heritage (former)
PCT	Plant community type
PCU	Power conditioning unit
PHA	Preliminary hazard analysis
PMST	Protected Matters Search Tool
POEO Act	NSW *Protection of the Environment Operations Act 1997*
Project Area	Refers to the total area of the proposed solar farm
Proponent	RES
REAP	Renewable Energy Action Plan
Roads Act	NSW *Roads Act 1993*
RET	Renewable Energy Target
REZ	Renewable Energy Zone
RFS	NSW Rural Fire Service
RTA	NSW Roads and Traffic Authority (former)
SEARs	Secretary's Environmental Assessment Requirements
SIA	Social Impact Assessment
SRD SEPP	NSW *State Environmental Planning Policy (State and Regional Development) 2011*
SSC	State Suburb (Census statistical unit)
SSD	State Significant Development
TEC	Threatened ecological community
TIA	Traffic Impact Assessment
UNFCCC	United Nations Framework Convention on Climate Change
VIA	Visual Impact Assessment
WRIA	Water Resources Impact Assessment
WSP	Water Sharing Plan
WM Act	NSW *Water Management Act 2000*



APPENDIX A

Social Impact Scoping Report

umwelt
Environmental & Social Consultants

TALLAWANG SOLAR FARM

Social Impact Scoping Report

FINAL

June 2021

TALLAWANG SOLAR FARM

Social Impact Scoping Report

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
RES Australia Pty Ltd

Project Director:	Malinda Facey
Project Manager:	Marion O'Neill
Technical Director:	Dr Sheridan Coakes
Technical Manager:	Jessica Anagnostaras
Report No.	21139/R02
Date:	June 2021

Newcastle

75 York Street
Teralba NSW 2284

T| 1300 793 267
E| info@umwelt.com.au

www.umwelt.com.au

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Disclaimer

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	Name	Date	Name	Date
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Final	Jessica Anagnostaras	29 June 2021	Dr. Sheridan Coakes	30 June 2021

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Abbreviations

Abbreviation	Description
ABS	Australian Bureau of Statistics
AC	alternating current
BESS	Battery Energy Storage System
BSAL	Biophysical Strategic Agricultural Land
CSEP	Community and Stakeholder Engagement Plan
DC	direct current
DPIE	Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EP&A Act	NSW Environmental Planning and Assessment Act 1979
GP	General Practitioner
GRRR	Gulgong Residents for Responsible Renewables
GW	gigawatts
the Guideline	NSW DPIE Social Impact Assessment Guideline (draft, 2020)
IER	Index of Economic Resources
LGA	local government area
MW	megawatts
MWRC	Mid-Western Regional Council
NSW	New South Wales
PV	photovoltaic
RES	Renewable Energy Systems Australia Pty Ltd
REZ	Renewable Energy Zone
SEARs	Secretary's Environmental Assessment Requirements
SEIFA	Socio-Economic Indexes for Areas
SIA	Social Impact Assessment
SSC	State Suburb
SSD	State Significant Development
SSDA	State Significant Development Application
TRRA	Three Rivers Regional Assembly
TSR	Travelling Stock Reserve
Umwelt	Umwelt (Australia) Pty Ltd
VPA	Voluntary Planning Agreement

1.0 Introduction

This Social Impact Scoping Report documents the process and outcomes of the scoping phase of the social impact assessment undertaken by Umwelt for the Tallawang Solar Farm (the Project). It forms part of the Project's Request for Secretary's Environmental Assessment Requirements (SEARs) lodged with the New South Wales (NSW) Department of Planning, Industry and Environment (DPIE) by Renewable Energy Systems (RES) Group Australia, as part of the Project's State Significant Development Application (SSDA) under Part 4 of *the Environmental Planning and Assessment Act 1979* (EP&A Act).

This Report has been prepared in alignment with the DPIE *Social Impact Assessment Guideline* (2020) or 'the Guideline') and represents the 'Phase 1 SIA' for the Project. The 'Phase 2 SIA' for the Project will form part of the detailed environmental impact assessment process and will be incorporated in the Environmental Impact Statement (EIS) for the Project.

1.1 Project Overview

The Project will include the construction, operation and decommissioning of a photovoltaic (PV) solar farm with a capacity of up to 500 MW (AC) that would supply electricity to the national electricity grid. The site of the solar farm is approximately 1,370 ha in size and encompasses eight freehold rural properties (four for the solar farm site and four for the preferred overhead transmission line route and substation). The proposed Project includes a Battery Energy Storage System (BESS) with a proposed capacity of up to 1,000 MWh, with panels installed at a height of up to five metres above the ground. The layout of the Project within the site will be further defined as the environmental and social impact assessments progress.

The Project would further include an approximate 11 km of overhead 330 kV transmission line traversing four privately-owned properties within a corridor approximately 60 m wide and 11 km long, covering an area of approximately 70 ha. This easement would connect the proposed Tallawang Solar Farm to a proposed substation situated to the north of the Project site on the Project Area of the Barneys Reef Wind Farm, also proposed by RES. The substation is proposed to be located on a single freehold property with a footprint of 2.3 ha. Grid connection for the Project is reliant on the development of the proposed Central-West Orana Renewable Energy Zone Transmission Project.

The Project's 34 month construction period would be followed by an expected operational life of 35 years. Following its expected operations period the solar farm would either be decommissioned, removing all above ground infrastructure, returning the site to its existing land capability, or repurposed with new PV equipment subject to technical feasibility and planning consents.

Transportation of construction material and supplies required for the Project is planned from the Port of Newcastle via the Golden Highway to the Castlereagh Highway, using the southern access point to the solar farm site directly off the Castlereagh Highway. Further project information and specifications can be found in Section 2.0 of the Scoping Report (Umwelt, 2021).

1.2 The Proponent

RES is an independent renewable energy company active in onshore and offshore wind, solar and energy storage, as well as transmission and distribution. To date, RES has delivered over 20 gigawatts (GW) of renewable energy projects worldwide and supports an operational asset portfolio of 7 GW. RES has been in Australia since 2004 and has installed over 850 MW of renewable energy projects with a construction and asset management portfolio of over 1.1GW.

2.0 Methodology

2.1 Social Impact Assessment requirements

This Social Impact Scoping Report has been prepared in accordance with the NSW Government's *Social Impact Assessment Guideline* (DPIE 2020) as part of the environmental impact assessment process, as per **Figure 1**. Further detail on the NSW planning framework can be found in the Scoping Report (Umwelt, 2021).

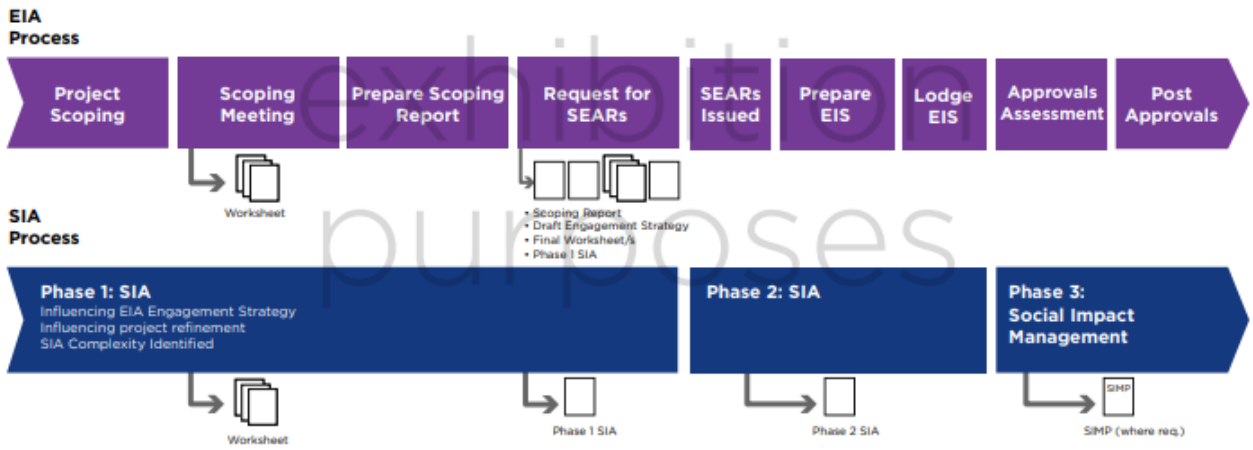


Figure 1 SIA and EIS Process (DPIE, 2020)

This Report forms part of the Scoping Report and the accompanied Request for SEARs to be lodged with NSW DPIE and includes the following key components:

- Social baseline profiling – defining the baseline social context in which the Project is situated.
- Issues scoping – preliminary identification and evaluation of social impacts and issues relevant to the Project, to determine the level of assessment required for the EIS, proportionate to the scale of the Project and the matters of importance to the community.

Commencement of social impact assessment (SIA) early in the Project, informed by community and stakeholder engagement, affords opportunity to effectively integrate social outcomes within the detailed project planning and design. As is the case with any type of change, some individuals or groups within the community may benefit, while others may experience negative impacts. If negative impacts are predicted, it is the role of the SIA to determine how such impacts may be addressed effectively to reduce the degree of disruption to those affected. If positive impacts are predicted, the aim of the SIA is to maximise these opportunities and identify how they might be further enhanced and realised.

Figure 2 provides an overview of the key SIA program phases, with this Report relevant to 'Phase 1 – Scoping'**. Figure 3**, outlines the defining characteristics of social impacts in accordance with the Guideline.

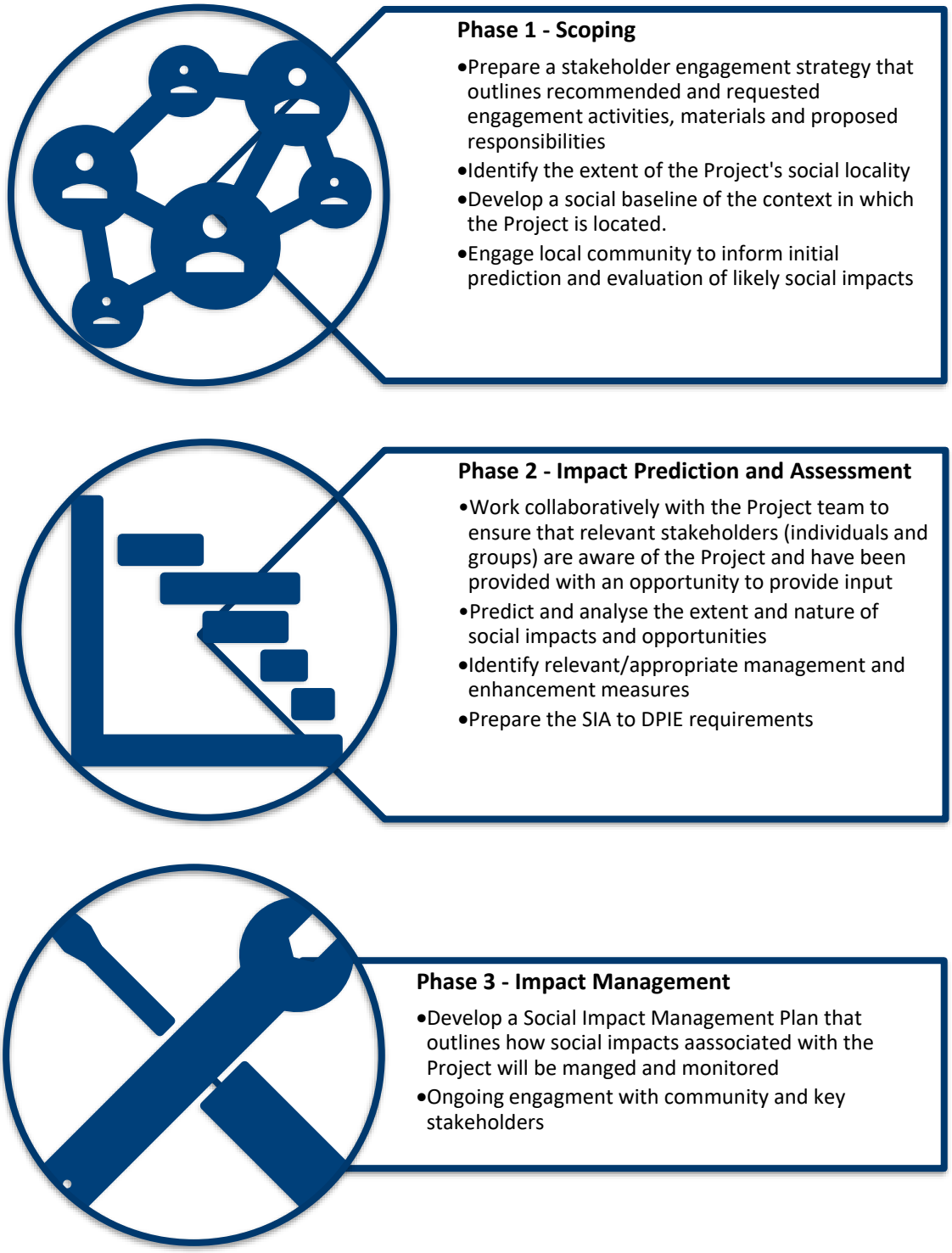


Figure 2 SIA Phases

Figure 3 Social Impact Categories

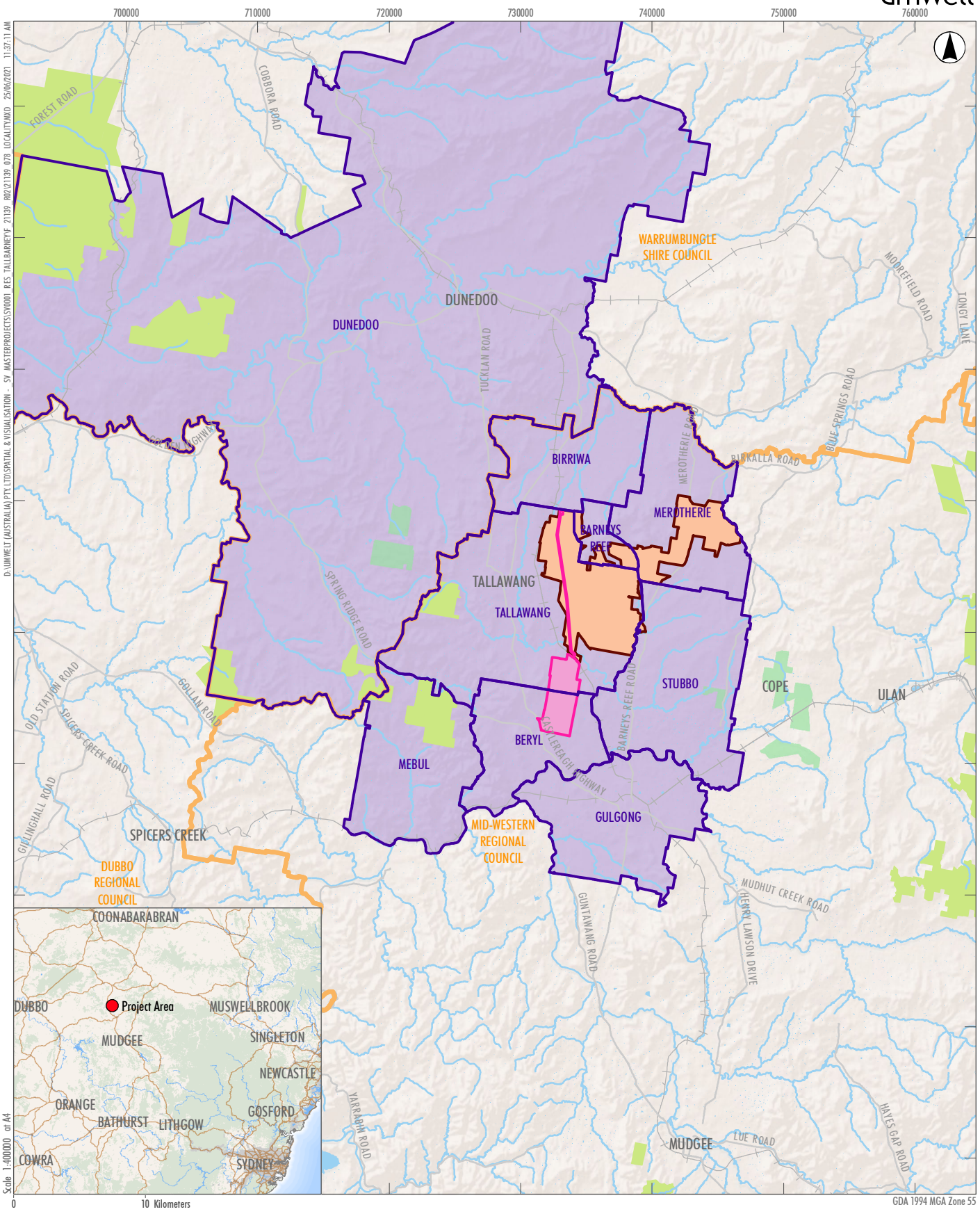
2.2 Area of Social Influence

A social baseline profile has been developed of the Project's social locality or 'area of social influence'. The area of social influence for this Project is defined as:

- The landholdings, property owners and residents situated on or intersecting with the Project site area as well as the footprint of any ancillary infrastructure.
- The State Suburbs (SSC) as per the Australian Bureau of Statistics' (ABS) statistical areas of Tallawang, Beryl, Mebul, Dunedoo, Birriwa, Stubbo, Gulgong and Merotherie.
- The host local government area (LGA) of the Mid-Western Regional Council (MWRC) and the neighbouring Warrumbungle Shire Council area.

Figure 4 visually represents the area of social influence.

The area of social influence may extend beyond these boundaries at subsequent stages of Project planning and assessment to include locations from which construction contractor workforces may be sourced and where materials may be supplied for the Project.



Legend

- Tallawang Solar Farm Project Area
- Barneys Reef Wind Farm Project Area
- Local Government Boundary
- State Suburb (SSC)
- National Parks (NPWS Estate)
- State Forest
- Road
- Drainage Line
- Railway Line

FIGURE 4

Area of Social Influence

Image Source: Data source: Geoscience Australia; Forestry Corporation of NSW (2019); DSFI (2017); NPWS Estate (2019); ABS (2016)

2.3 Social Profiling

A baseline social profile gathers knowledge from both primary and secondary data sources to form an understanding of the existing social environment in which a project is proposed and of potentially affected communities. The social baseline profile is a foundational component of SIA as it provides the basis for which social impacts associated with the Project may be predicted, assessed, monitored, and managed over time.

The Guideline (DPIE, 2020) outlines the key components of a social baseline study, as including:

- an understanding of the project's social locality (or area of social influence)
- initial analysis of the defining characteristics of the communities within the project's area of social influence, including identification of any vulnerable groups.

2.3.1 Data Sources

To gain an understanding of the demographic characteristics and composition of communities within the area of social influence, and to ascertain how the Project may change or affect people, socio-economic and demographic data has been gathered and summarised from key publicly available datasets, including the ABS Census (2016) and the Social Health Atlas of Australia (PHIDU, 2020), as well as through a review of local media, local and State government plans, and strategies.

Appendix A contains the community profile dataset that has been used to inform the social baseline. The data sources used and key indicators of interest, including a brief explanation of their relevance to the Project are outlined in **Table 2.1**.

Table 2.1 Social Baseline Profile Indicators and Sources

Key Questions	Data Source	Indicators of Interest
• **What is the demographic composition of the community?** • **What is the proportion of the population that is vulnerable to the proposed project/change?** • **What skills exist in the region, are there relevant skill sets to enable the local and regional population to capitalise on employment opportunities during construction/operations?** • **Is the Project going to be of value to the local/regional community? Does the project align with community values, aspirations, needs?** • **Are there any groups that will require a particular engagement approach to facilitate their involvement and participation? i.e., languages or cultural/ educational barriers, vulnerabilities?** • **Are there any specific social trends evident in the region?**	**ABS Census (2016)** • Mid-Western LGA • Warrumbungle Shire LGA • Tallawang SSC • Beryl SSC • Mebul SSC • Dunedoo SSC • Birriwa SSC • Barneys Reef SSC[1] • Stubbo SSC • Gulgong SSC • Merotherie SSC	• Current population and trends • Median age and age distribution • Unemployment rate • Key industries of employment • Educational attainment • Ownership and tenure of private dwellings • Weekly household income • Proportion of vulnerable groups (unemployed, low-income families, elderly, Aboriginal and Torres Strait Islanders) • Cost of living (rental and mortgage payments)
• **What is the socio-economic status of the community?** • **What is the level of advantage/ disadvantage in the community?**	**ABS Census of Population and Housing (2016)** • Mid-Western LGA • Warrumbungle Shire LGA • Tallawang SSC • Beryl SSC • Mebul SSC • Dunedoo SSC • Birriwa SSC • Barneys Reef SSC2 • Stubbo SSC • Gulgong SSC • Merotherie SSC	• Index of Relative Socio-economic Disadvantage, 2016 • Index of Economic Resources, 2016 • Index of Education and Occupation, 2016

[1] ABS Community Profile not available for Barneys Reef SSC due to population size.

[2] ABS Community Profile not available for Barneys Reef SSC due to population size.

Key Questions	Data Source	Indicators of Interest
• **What is the level of health in the community?** • **What are the main risk factors?**	**Social Health Atlas of Australia (PHIDU, 2020)** • Mid-Western LGA • Warrumbungle Shire LGA	• Chronic diseases • Risk factors • Premature death
• **What has been the response of the community to similar Projects in the region?** • **How supportive or not are community residents of renewable energy projects?** • **Have community residents expressed concerns regarding current electricity prices?**	Local media review Submissions reports (comparable or nearby projects)	• Level of support for renewable projects • Number of articles relating to renewable projects • Community sentiment regarding solar farms • Reported electricity prices
• **What are the Council's key priority areas?** • **Is the proposed project aligned with the Council's strategic plan?** • **Are community values, concerns and/or aspirations documented in the Community Strategic Plan?** • **How does the proposed project fit within the broader regional and state planning energy strategy?**	**Government strategic plans or policies:** • Department of the Environment and Energy (2019) Australian Energy Statistics • NSW Transmission Infrastructure Strategy • Renewable Energy Action Plan in 2018 • Regional Community Energy Fund • Towards 2030, Mid-Western Region Community Plan • Central West and Orana Regional Plan 2036 • State of the Environment Snapshot 2018-19, Mid-Western Regional Council	• Average electricity usage • Average electricity usage by energy source • Level of investment in renewable energy infrastructure in NSW • Support for and awareness of renewable/ solar energy in the community • Number of solar energy and renewables projects in the region
• **What are the attitudes and perspectives of local and regional residents – are they likely to be supportive of the project?** • **What are the key concerns of the community in relation to the project?** • **Are there any strategies on how to manage the impacts of the project?** • **To what extent will the project support the community?**	• Community and Stakeholder Engagement	• Knowledge of the project • Level of support for the project • Community sentiment towards renewable infrastructure and energy • Concerns related to the project

2.4 Stakeholder Identification

Social impact assessment involves the participation and collaboration of people who have an interest in or those that are affected by a project. As Burdge (2004) outlines, stakeholders may be affected groups or individuals that:

- live, work, or recreate near the Project
- have an interest in the proposed action or change
- use or value a resource associated with the Project
- are affected by the Project e.g., may be required to relocate as a result of the project.

A stakeholder identification process was undertaken during the scoping phase for the Project to support the planning and delivery of community and stakeholder consultation to inform the SIA. This process involved identifying stakeholders with an interest in the Project, or those directly and indirectly affected. This included identifying any potentially vulnerable or marginalised groups within the community.

Further, this process has considered the interconnectivity with the adjacent Barneys Reef Wind Farm Project and any mutual stakeholders. Further definition of the stakeholder identification process is outlined in the Community and Stakeholder Engagement Plan in **Appendix G.**

Key stakeholders who were consulted or engaged during the scoping phase (throughout March and April 2021) are outlined in **Figure 5**. Subsequent phases of the SIA will seek broader involvement across the stakeholder groupings identified and will include wider community involvement.

Figure 5 Key Stakeholder Groups

2.5 Community Consultation

RES has prioritised the undertaking of early community and stakeholder engagement to build positive relationships with near neighbours and key stakeholders in relation to the Project, to inform Project design and development, and to identify and understand perceived issues and impacts as early as possible in the planning and assessment process. RES has ensured that all engagement activities are led by a proponent representative, maintaining that stakeholders and communities have direct interaction with the proponent and that RES is proactively prioritising the input of stakeholders and members of the community in the Project's development.

A coordinated approach to community and stakeholder engagement for the Project with the adjacent Barneys Reef Wind Farm Project has been adopted due to:

- RES is the proponent for both the Tallawang Solar Farm and the Barneys Reef Wind Farm projects
- the projects being adjacent each other and in the same locality, and
- the projects being subject to concurrent EIS programs.

The approach intends to streamline the two projects' consultation programs and integrate a common approach, aiming to:

- ensure the development and implementation of engagement that is transparent and provides clear and consistent information on the two projects
- reduce social risks associated with either project, including stakeholder confusion or consultation fatigue
- establish and develop trust with key stakeholders, and
- afford the opportunity for meaningful participation in the assessment phases for both projects.

Table 2.2 details the range of engagement mechanisms utilised to obtain input from various stakeholder groups for the Scoping Report as well as mechanisms to be implemented in subsequent phases of the assessment program**.**

The Discussion Guide used as the basis for undertaking consultation in this phase is contained in **Appendix B.** The Community and Stakeholder Engagement Plan (CSEP) (provided in **Appendix G**) outlines the engagement approach and strategy used to inform this Report and the scoping phase of the SIA.

Table 2.2 Engagement Mechanisms

Mechanisms	Description	First Round of Consultation	Second Round of Consultation	Targeted Stakeholder Group
Website/hotline/ email	Platforms and tools to provide opportunity for the wider community or public to engage with the Projects (information provision and feedback submission) outside of dedicated consultation periods	A website, hotline and email address were established in March 2021	The website, hotline and email address will be monitored and updated when required across subsequent phases	Traditional Owners Host landholders Neighbouring/proximal landholders Community groups Wider community Local businesses and service providers Local media
Media release	Holding statement outlining key messages in local media	The holding statement was developed in April 2021 and distributed to local media agencies in the first round of consultation	Subsequent media releases will be developed when required in the EIS phase	Local Government Traditional Owners Host landholders Neighbouring/proximal landholders Community groups Wider community Local businesses and service providers Local media
Project Information Sheet	Project information sheets to distribute information about the Project to the broader community	No. 1 – Project overview was distributed across March - May 2021	No. 2 – Project update and outcomes of scoping phase to be distributed in the assessment phase No. 3 – Project update and outcomes of technical studies to be distributed following the completion of the EIS and SIA reports	State Government Local Government Traditional Owners Host landholders Neighbouring/proximal landholders Community groups Wider community Local businesses and service providers Local media

Mechanisms	Description	First Round of Consultation	Second Round of Consultation	Targeted Stakeholder Group
Project briefings	Formal briefings to key stakeholders and government agencies, with Project Information Sheet and/or slide deck to formally introduce the Projects	Initial Project briefings were undertaken in March and April 2021	Further Project briefings will be undertaken across subsequent phases of the Project	State Government Local Government Traditional Owners Community groups Local businesses and service providers
Personal meetings or interviews	Introductions to the Project, semi-structured discussion to listen to individual concerns, interests, issues and gather preliminary feedback, including sensitivities, understand future engagement preferences	One-on-one introductory meetings with nearby and adjacent landholders took place in March and April 2021	Follow up interviews and meetings will occur during the preparation of the EIS Interviews with local businesses and services providers will occur during the preparation of the EIS	Nearby or adjacent landholders and residents Local businesses and service providers Community groups Traditional Owners
Questionnaire/ survey	Scope and assess potential issues, impacts and opportunities	Host landholders were provided with questionnaire to complete in their own time and provide written response	Questionnaire or survey to be issued (either through phone interview, face-to-face or email) during preparation of EIS	Host landholders Nearby or adjacent landholders and residents Local businesses and service providers
Community information sessions	Informal public 'drop in' sessions in a community facility or venue to provide Project information and opportunity for the public to pose questions, provide feedback, Project team to visually share results of studies	N/A	To be scheduled in multiple locations/ towns following the issuance of SEARs Second round of sessions to be planned at subsequent Project phases as required (likely pre-EIS lodgement)	Wider community Local businesses and service providers

Table 2.3 outlines the stakeholders who have participated in the scoping phase of the Project's planning and assessment process to date, as well as those who have informed the development of this Report.

Table 2.3 Stakeholders Consulted during Scoping Phase

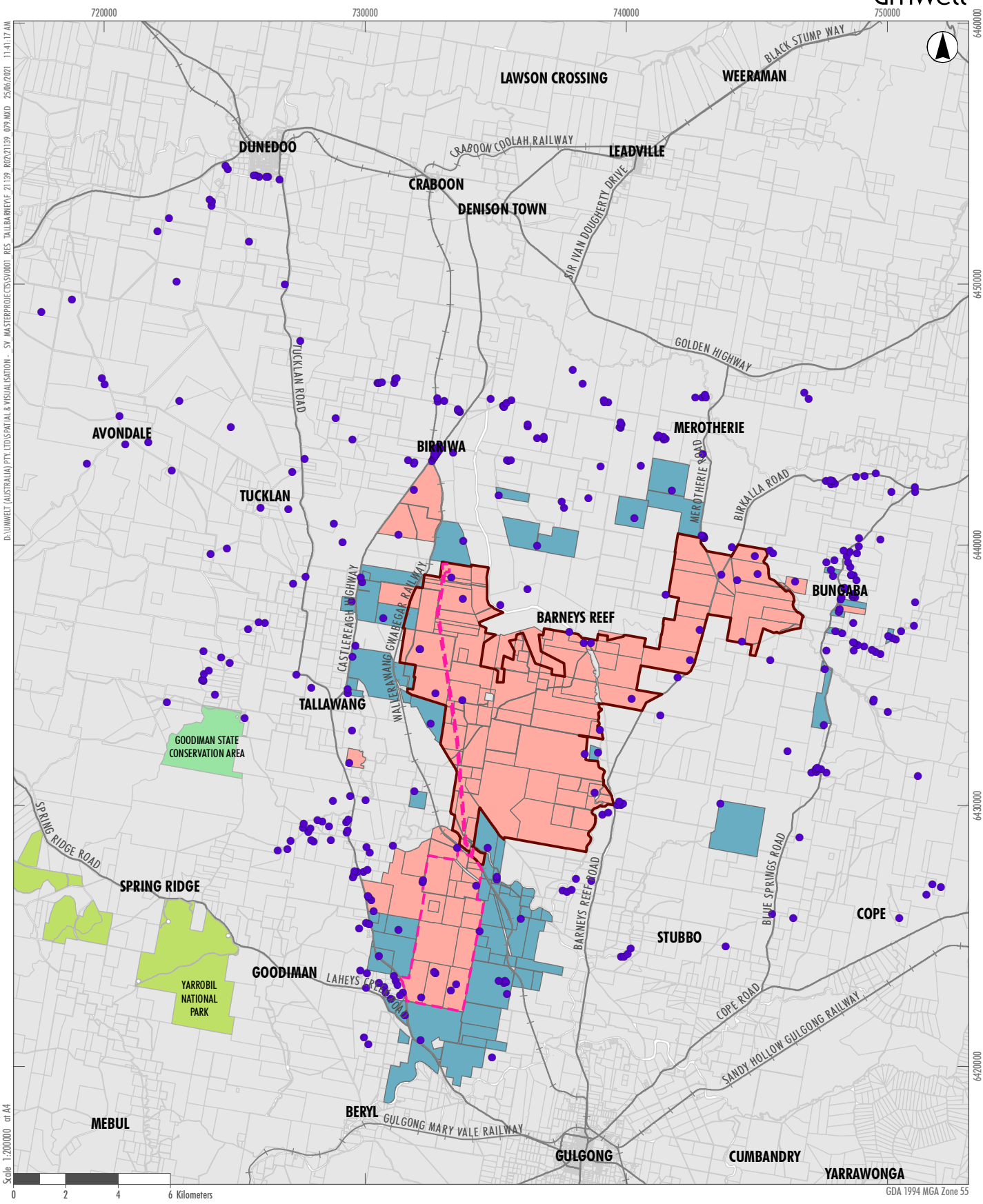
Stakeholder group	Mechanism	Number contacted	Number engaged
Host Landholders	Written questionnaire	2[3]	1
Proximal Landholders	Personal meeting	15	11
Traditional Owners	Project briefing	1	1
Local Government	Project briefing	2	2
State Government	Project briefing	1	1
Community & Special Interest Group	Project briefing and interview	8	4
Local Businesses & Service Providers	Personal meeting/interview	4	2
Local Community[4]	Project Information Sheet	-	1,788
Broader Community	Project website	-	-
Local Media	Media Statement	4	2[5]

Appendix C provides a complete list of stakeholders consulted during this phase. Quantitative and qualitative information collected through these consultation and engagement activities has been analysed to inform the preliminary analysis of social impacts associated with the Project, as outlined in **Section 4.0.** Landholders consulted during this phase (host and proximal) are visually represented in **Figure 6.**

[3] Host landholders of the transmission line and substation will be consulted during the EIS phase..

[4] Includes localities of Tallawang, Barneys Reef, Gulgong, Dunedoo, Goolma, Beryl, Leadville, Merotherie, Bungaba, Birrawa and Stubbo.

[5] The Media Statement will be published during the EIS phase.



Legend

- Tallawang Solar Farm Project Area
- Barneys Reef Wind Farm Project Area
- Proximal Dwelling
- Proximal Landholders Consulted
- Host Landholder
- National Park
- State Conservation Area

FIGURE 6

Consulted Landholders

Image Source: ESR Basemap Data source: RES Australia (2021), NSW DFSI (2020)

2.6 Preliminary Impact Evaluation

A preliminary evaluation of the issues and impacts identified during the Scoping Phase (as outlined in **Section 6.0**) has been undertaken to understand the level of assessment required for each impact in the EIS, as well as to inform any Project refinements and detailed planning. The significance assessment has been undertaken using the matrix provided in the NSW DPIE *Social Impact Assessment Guideline Technical Supplement* (2020, refer to **Figure 7**) which considers magnitude and likelihood. The significance rating has been assigned from the perspective of the affected stakeholder group and will be further investigated and validated as part of the EIS.

		Magnitude level				
		1 Minimal	2 Minor	3 Moderate	4 Major	5 Transformational
Likelihood level	A Almost certain	Medium	Medium	High	Very High	Very High
	B Likely	Low	Medium	High	High	Very High
	C Possible	Low	Medium	Medium	High	High
	D Unlikely	Low	Low	Medium	Medium	High
	E Very unlikely	Low	Low	Low	Medium	Medium

Figure 7 Social Impact Significance Matrix

Source: (NSW Department of Planning, Industry, and Environment, 2020)

A key objective of the scoping phase SIA is to identify the level of assessment required for each impact in the EIS phase. The level of assessment will fall into one of four categories as outlined in **Table 2.4.**

Table 2.4 Guide to Determining Levels of Assessment for Each Social Impact

Threshold	Level of assessment of the impact	Meaning
Three or more 'yes' or 'unknown' significant characteristics	**Detailed assessment**	Impact will not be assessed in other EIS technical studies and will be primarily assessed by specialists in the Phase 2 SIA.
Two 'yes' or 'unknown' significant characteristics	**Standard assessment**	Impact will be partially assessed in other EIS technical studies; however, further information and evaluation is required in the SIA to analyse the social dimensions of the impact.
One 'yes' or 'unknown' significant characteristic	**Desktop integration assessment**	Impact will be mostly assessed in other technical studies in the EIS, and desktop review will cross-reference and integrate those studies in the SIA Report.
No 'yes' or 'unknown' significant characteristics	**No further assessment**	The impact is unlikely to be experienced by anyone, although a monitoring framework will incorporate mechanisms to respond to unanticipated impacts.

Source: (NSW Department of Planning, Industry, and Environment, 2020)

3.0 Social Baseline

This section describes the social baseline profile of the communities in and around the Project. It provides initial analysis of the defining characteristics of the communities considering demographic, social and economic indicators. Further, it considers the natural and physical attributes of the area of social influence in understanding how people currently live, work and recreate in the area.

The following components have been considered in the social baseline for this Project, namely:

- geographic and spatial – identification of communities of interest and relevant stakeholders
- governance – an understanding of the relevant governance structures including those of the Traditional Owners and local, State and Federal government jurisdictions
- development context – a review of the recent history of local communities, including cultural characteristics and community values, as well as previous experiences with renewable energy development projects and other development issues to ascertain the response of local communities to these changes
- community capital/assets – an assessment of levels of vulnerability or resilience across the communities of interest and their capacity to cope with change
- key community values, issues, and concerns – documentation of current community issues, as identified in key strategic planning documents, regional plans, or studies as well as within local media.

3.1 Local Setting

3.1.1 Land Use and Tenure

Land within and surrounding the Project Area has been subject to extensive vegetation clearing associated with historic agricultural land uses and is predominately utilised for grazing activities. Agriculture (primarily sheep grazing with some cattle grazing) is the main land use in the LGA. There are some areas of forestry, mining, and nature conservation.

The Project Area is zoned RU1 Primary Production under the *Mid-Western Regional Local Environmental Plan 2012* (Mid-Western Regional LEP (NSW Government, 2021)). Land in the Project Area is Class 3 (99 ha) and 5 under the NSW Land and Soil Capability Assessment Scheme. Class 3 is considered high capability land able to sustain high-impact land uses such as cropping with cultivation, while Land Class 5 is considered moderate to low capability agricultural land with significant limitations for high-impact land uses. The Class 3 land is also mapped as Biophysical Strategic Agricultural Land (BSAL) (DPIE, 2021) indicating that it has high quality soil and water resources capable of sustaining high levels of productivity.

Approximately 1,145 ha of the Project Area is subject to mineral exploration licences (EL8160 and EL8405) held by Bowdens Silver (a Silver Mines Limited Company).

There are eight landholders or property owners whose properties are proposed to host the Project infrastructure (four for the solar farm site and four for the preferred overhead transmission line route and substation).

3.2 Governance

The site is within the Mid-Western Regional LGA which is governed by the Mid-Western Regional Council (MWRC, the Council). The Project is also situated near the boundary of the Warrumbungle Shire LGA to the north, administered by the Warrumbungle Shire Council. The Mid-Western Regional LGA is known for its built heritage, food and wine tourism, and mining. Mudgee is the main town and strategic centre in the LGA, and provides the key public service, retail, tourism, and recreation facilities in the region. Mudgee is accompanied by the smaller towns of Rylestone, Kandos, Ilford, Bylong and the historic town of Gulgong. Approximately 15 villages and rural localities provide basic facilities and form an important part of the region's rural character. The Warrumbungle Shire LGA is highly regarded for livestock grazing and cropping.

The Mid-Western Regional LGA has a focus on looking after the community, protecting the natural environment, building a strong local economy, connecting the region and good government as outlined in their 'Towards 2030' Community Strategic Plan (further outlined in **Appendix E**). In the 'Towards 2030' plan, the community expressed a desire to reduce the consumption of energy and fossil fuels, and to consider alternative resources, as such, Council has committed to increasing the use of alternative energy sources within the LGA. These community aspirations are reflected in the uptake of small-scale renewable energy which have increased steadily since 2015 with the capacity of solar systems in the LGA tripling in the 5 years from 2014 – 2019. This rate of uptake is consistent with the trend across regional NSW, with a 64% increase in small-scale solar installations in 2017-18 compared to 2016-17 (Mid-Western Regional Council, 2013). Further detail on the opportunities and challenges within the LGA is provided in **Section 3.7**.

3.2.1 Settlement Pattern

There are approximately 60 dwellings located within 10 km of the Project Area, of which six are owned by host landholders. There are approximately 20 dwellings within a 4 km radius, with the closest approximately 350 metres from the southern boundary of the Project Area. Land use on these properties is largely characterised by livestock grazing.

Gulgong is the nearest township to the Project located approximately 8 km south-east of the site, with the larger population centre of Mudgee approximately 48 km south of the site. The town of Dunedoo is approximately 45 km north-west. The site is in proximity to the Castlereagh Highway and the Golden Highway giving the local area access to the Hunter region, the major metropolitan centre of Newcastle as well as inland links to south-east Queensland.

Table 3.1 outlines the key populations within the area of social influence. Further demographic profiling information can be found in **Appendix A**.

Table 3.1 Key Populations (ABS, 2016)

Place-based communities	Population
Mid-Western Regional LGA	25,158
Town of Gulgong	2,521
Town of Mudgee	10,923
Warrumbungle Shire LGA	9,187
Town of Dunedoo	1,221

3.3 Regional Setting

The site is located within the Central West-Orana Region in NSW, a diverse and productive agricultural region with strong connectivity to Sydney, Canberra and Newcastle. The key regional cities and major towns in the region include Bathurst, Orange, and Dubbo, with increasingly visited centres of Lithgow, Mudgee, and Cowra.

The population of the region is expected to reach 300,000 people by 2036, and as such, there has been a strong focus from the NSW Government to develop the region into '*the most diverse regional economy in NSW with a vibrant network of centres leveraging the opportunities of being at the heart of NSW'* (NSW Government, 2016).

Visions for future development of the region include increasing the diversity of the economy, capitalising on the historic towns and heritage centres for tourism, improved freight, transport and infrastructure, and vibrant healthy communities. Significant industries of employment in the region include the extractives sector, agriculture, health and social care sectors, as well as emerging sectors such as renewable energy (DPIE, 2016). **Figure 8** summaries the key industry sectors that the NSW Government's strategic plans focus on for the region.

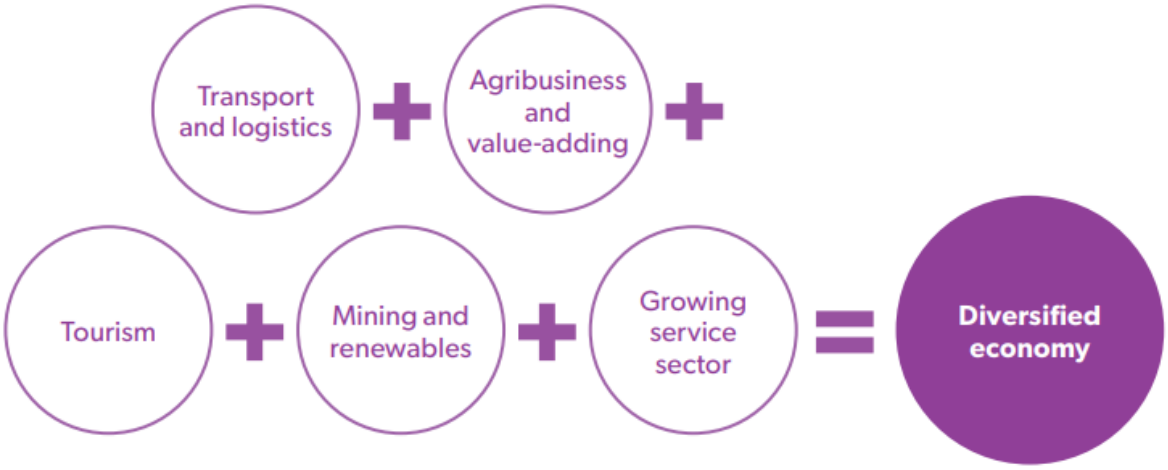


Figure 8 Economic Diversification Strategy for the Central-West Orana Region (DPIE, 2016)

3.4 Traditional Owners

The Project site is located within the traditional lands of the Wiradjuri nation. Wiradjuri means 'the people of the three rivers', and nation's traditional and modern-day connections to Country extend over a large area of NSW encompassing the Macquarie, Lachlan and Murrumbidgee Rivers, bounded by the Murray River in the south. The site is within the boundaries of a Native Title claim submitted in August 2018 by the Warrabinga-Wiradjuri (NC2018/002 - Warrabinga-Wiradjuri #7). This claim is over an area of 13,682 km^2 that covers 10 LGAs, including the Mid-Western Regional Council and the Warrumbungle Shire Council. No determined claims or Indigenous Land Use Agreements are in place for the Project area at the time of reporting. The Project area is situated within the NSW Aboriginal Land Council boundaries of the Central Region, specifically in the Mudgee Local Aboriginal Land Council area. More information on the traditional owners of the land is provided in **Appendix A**.

3.5 Development Context

This section draws on several data sources to build an understanding of the development context of the region to capture any ongoing social change processes in the area of social influence, and to identify how local communities have responded to these changes over time.

3.5.1 Energy Policy in NSW

Australia's commitment at the international level to the Paris Climate Accord has influenced the growth of and investment in the renewable energy sector across the country.

In 2013, the NSW Government released the *NSW Renewable Energy Action Plan* that consists of 24 actions under 3 goals outlining the Government's intention to work with communities and the renewable energy industry to increase renewable energy generation in the state. The Plan was implemented alongside the *Energy Efficiency Action Plan*, and the successful implementation of the Plan was completed in December 2018. The NSW Government's *2019 Electricity Strategy* announced three Renewable Energy Zones (REZ) in the Central-West Orana, New England, South West regions to encourage investment in projects that generate, store and transmit renewable energy.

In November 2020, the NSW Government announced its plans to invest $32 billion into renewable energy over the next decade as part of its *NSW Electricity Infrastructure Roadmap*. The NSW Government anticipates that the investment will generate significant employment opportunities, along with financial gains for landowners.

To support the implementation of projects such as these, and to give communities more certainty around the delivery of energy infrastructure, the Government has provided an opportunity for communities to participate more centrally in the projects' development through the introduction of the NSW *SIA Guideline* (2020).

3.5.2 Central-West Orana Renewable Energy Zone

With the Central-West and Orana REZ located in the region, there is high-level support for renewable energy at an NSW Government level. The Central-West Orana Renewable Energy Zone (REZ) is the State's first pilot REZ and is one of five REZs planned by the NSW government. REZs co-locate renewable energy generation, energy storage, and transmission lines with the aim of providing affordable, reliable and low-emissions electricity to the grid. REZs aim to install the transmission infrastructure required to attract private investment, and to enable the transition to an electricity network powered by renewable energy sources. The recent establishment of the Central-West Orana REZ is already attracting significant interest from renewable energy and storage developers (Energy NSW, 2020).

The NSW Government's Central-West and Orana Regional Plan (2017) notes in their vision for the region '*landmark solar, wind and bioenergy projects distinguish the region as a leader in renewable energy development*.' The Plan outlines the role renewable energy will have in creating a sustainable future for the region, particularly by promoting local jobs and development opportunities for associated industries. Specifically, Direction 9 of the Plan is aimed at increasing renewable energy generation across the region. **Figure 9** outlines the Central-West REZ and currently proposed, approved, or already developed renewable energy projects. These projects are further summarised in **Appendix E** to inform the level of cumulative development in the region and to understand the cumulative impacts that a large number of other developments might have on the community.

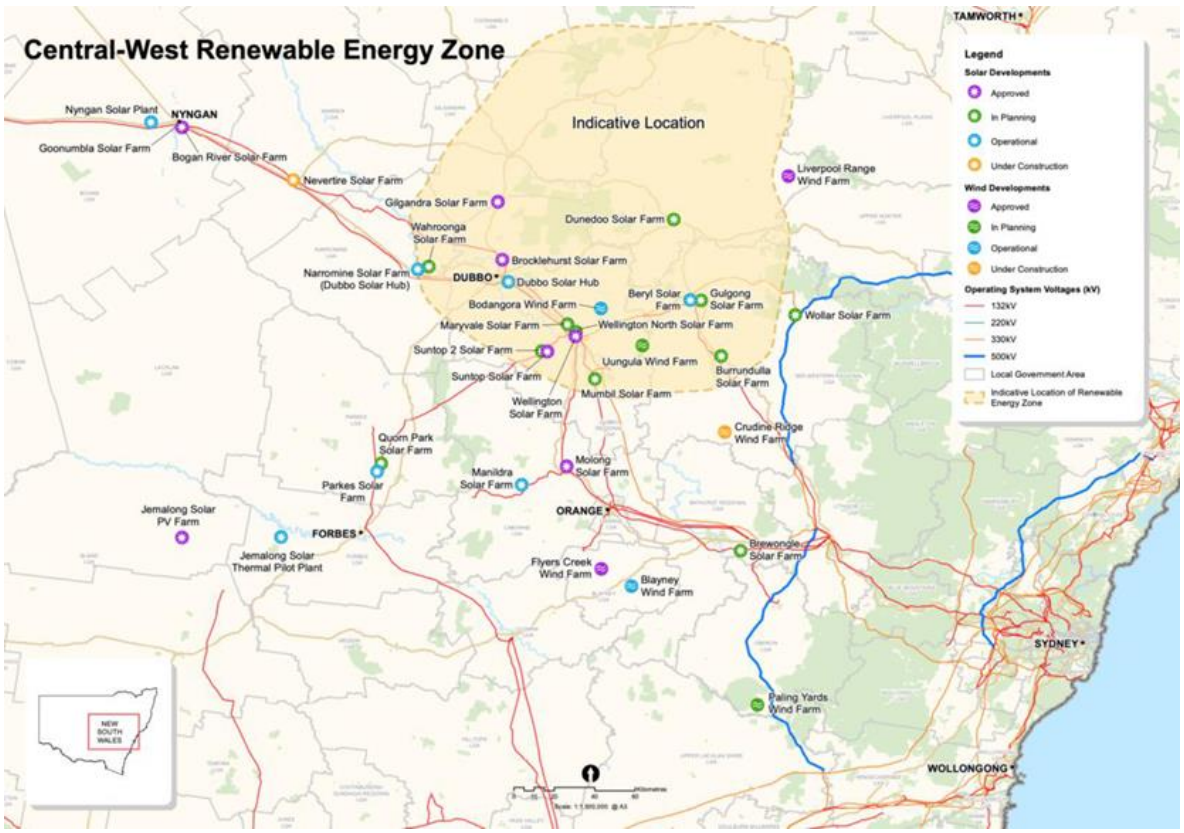


Figure 9 Central West Renewable Energy Zone

Source: (Energy NSW, 2020)

3.5.3 Comparable Solar Farm Developments

To build an understanding of potential community perceptions of the Tallawang Solar Farm, a select number of comparable projects in the area of social influence have been reviewed and outlined to identify how stakeholders and communities have responded to these proposed developments in recent years:

- The 5 MW Avisford Mini Sustainable Energy Park by ITP Renewables close to the Gulgong township was unanimously refused by the Western Regional Planning Panel. Received 445 public submissions; 439 of which were in opposition (Mid-Western Regional Council, 2020; Western Regional Planning Panel, 2020).
- The 220 MW Gulgong Solar Project by Vena Energy was opposed by local community groups and appears to have not proceeded to a Development Application stage (change.org, 2019; solarquotes, 2020).
- The 10 MW Burrundulla Mini Sustainable Energy Park by ITP Renewables, located approximately 6km to the southeast of Mudgee town centre, was unanimously refused by the Western Regional Planning Panel and received 377 submissions in opposition to the project (ITP Renewables, n.d.; Western Regional Planning Panel, 2020).
- The 400 MW Stubbo Solar Farm, approximately 5 km away received 37 submissions, currently in its Response to Submissions phase (NSW Government, 2021).

- The 55 MW Dunedoo Solar Farm, approximately 30 km away received 20 submissions, at the time of writing, the Department is awaiting more information from the proponent post the Response to Submissions phase before a determination is made (NSW Government, 2021).

- The 30 MW Wellington North Solar Farm, approximately 50 km away received 12 submissions and was approved by the Department in April 2021 (NSW Government, 2021).

A media review of these projects highlighted that key community sentiments towards these proposed solar farms included:

- Support for renewable energy projects but the view that these should be appropriately sited and should not be placed on productive agricultural land. Alternative suggestions include placement of solar farms on rehabilitated mining land.

- Concern over the impacts on visual amenity, with projects considered inconsistent with the heritage character of local towns and the landscape's rural qualities.

- Concern relating to the siting of solar projects within eyesight of towns or adjacent to local roads approaching towns.

- Concern over the cumulative impacts of multiple solar projects on property values, agricultural production, and visual amenity.

These sentiments are consistent with some of the early feedback provided by community members in relation to the Project, which are summarised in **Appendix D**.

An overview of major renewable energy projects reviewed in understanding potential cumulative effects is contained in **Appendix F**.

3.5.4 Other Major Projects in The Region

Large-scale development projects in other sectors either proposed or recently developed that could affect social change in the area of social influence or result in cumulative effects include:

- The Barneys Reef Wind Farm Project, also proposed by RES and adjacent to the Tallawang Solar Farm, containing an estimated 60 wind turbines.

- A $70.7 million upgrade to Mudgee Hospital including a new emergency department, inpatient unit, operating theatres, maternity unit and outpatient services (NSW Health, 2021).

- A $1.3 million upgrade to the Castlereagh Highway near Capertee to improve road safety (Lithgow Mercury, 2020).

- Valley of the Winds Wind Farm, approximately 45 km from Tallawang to the north.

- Melbourne – Brisbane Inland Rail Project, traversing the Mid-Western Regional LGA (NSW Government, 2016).

- An extension to Peabody Energy's Wilpinjong Coal Mine in the small community of Wollar - approved in 2017, despite 87% of public submissions opposing the expansion.

- The Mid Western Regional Council has noted there are currently nine State Significant Development Applications within the LGA, three of which are coal mine developments or expansions.

Such project developments, in combination with the number of renewable projects approved or in the planning phase, may further intensify impacts perceived or experienced by local communities across the region. It is understood through a review of these projects that the rate of development in the region is proportionately high and that this may have effect on community capacity to cope with changes.

3.6 Sustainable Livelihoods Approach – Community Capitals

To understand the communities of interest to the Project and to evaluate their resilience and adaptive capacity to change, this social baseline has utilised the Sustainable Livelihoods Approach (U.K. Department for International Development [DFID] 1999) for analysis purposes.

According to this framework, people seek to maintain their livelihood within a context of vulnerability. Specifically, threats to their livelihood include shocks (such as sudden onsets of natural disasters, health problems, conflicts, and economic crises), trends (for instance, those relating to the economy, health, resources, and governance) and seasonality (such as cyclical fluctuations in prices or employment). People draw upon these assets to build and maintain their livelihood. A livelihood is considered sustainable '…when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base'.

The DFID (1999) approach draws on broad categories of community capitals as a fundamental basis to identifying and further enhancing community capacity and resilience. This methodology has been further developed by Coakes and Sadler (2011) to reflect the five capitals approach - human, social, natural, physical, and economic/financial. The vulnerability of each capital area can be assessed through the selection of a suite of socio-economic indicators specific to each capital area to assess a community's vulnerability to change or conversely their adaptive capacity. Elements of each capital area are further outlined in **Figure 10**.

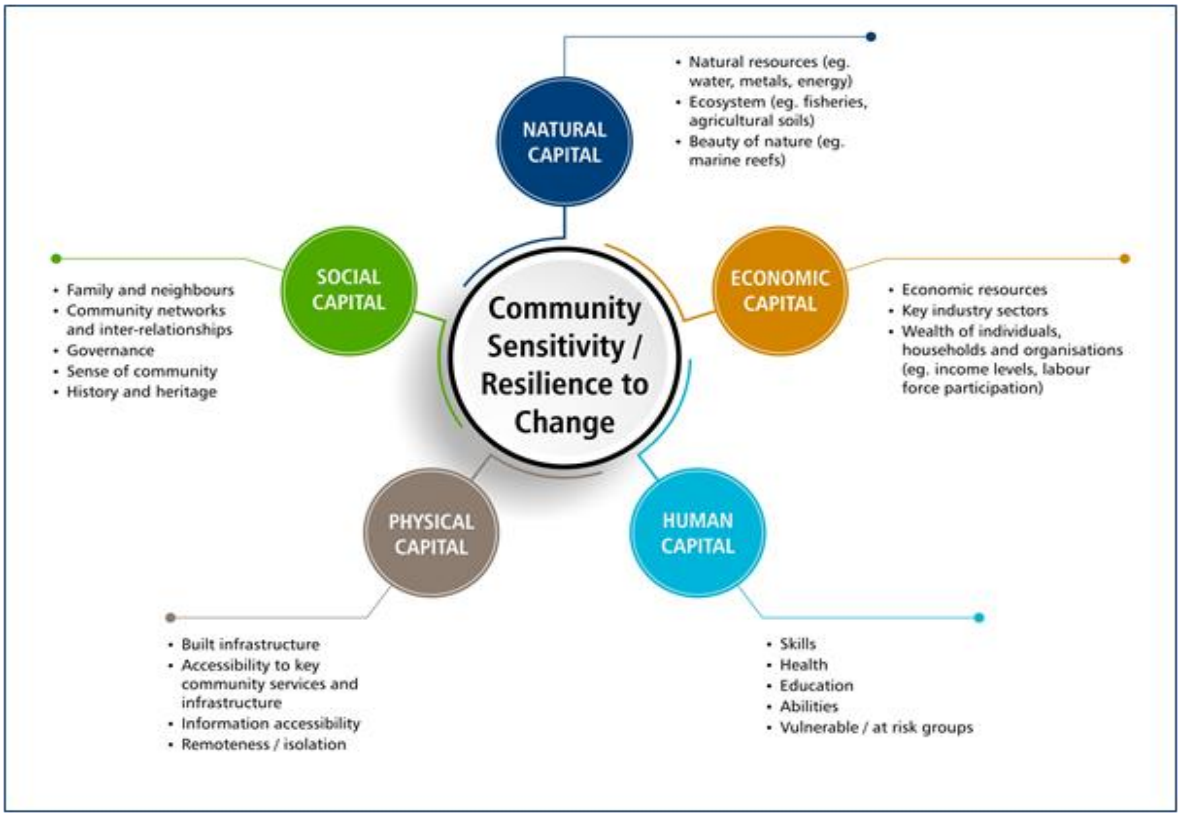


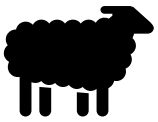
Figure 10 Capital Framework (adapted from Coakes and Sadler 2011)

The following sections summarise key findings from the community profiling, particularly community strengths and vulnerabilities, in accordance with the five community capitals. The complete dataset is provided in **Appendix A**.

3.6.1 Natural Capital

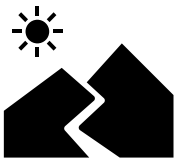
Natural capital refers to the natural assets and resources that contribute to community sustainability. Natural capital can include resources such as minerals, land, forests, and waterways, which provide benefit to the community, as well as environmental assets that provide social, cultural, or recreational value. A summary of the natural capital in the area of social influence is provided below.

Within the region, there is a strong history of viticulture, with winemaking dating back to the 1850s. Mudgee is a well-known food and wine destination amongst tourists and features an annual Food and Wine Festival.



The primary agricultural industries in the Mid- Western Regional LGA are wool (worth $28.4 million), cereal crops (worth $27.4 million), and cattle and calves (worth $16.3 million). The key agricultural pursuits are similar in the Warrumbungle Shire LGA, with cattle and calves the largest industry ($46.2 million) followed by cereal crops ($23.5 million) and wool ($16.9 million) (NSW Government, 2016).

The region is rich in minerals, with mining (predominantly coal mining) contributing $270 million to the local economy. The State of the Environment Report (2017-18) suggests there has been no loss of primary agricultural land through rezoning in the period between 2014 -2018 and an increase in the area covered by mining and exploration titles.



The Goulburn River National Park east of Mudgee, and Warrumbungle National Park west of Coonabarabran are popular tourist destinations. The Warrumbungle National Park is home to the internationally significant Siding Spring Observatory which is a critical piece of national infrastructure that provides jobs and attracts tourists. The region provides habitat for approximately 200 threatened species.

Water supply deficiencies (of more than 50% by 2036) are forecast for the Mid-Western Region. New water security projects and water management initiatives, such as stormwater harvesting and innovative water management approaches, are currently being employed to improve water security (NSW Government, 2016). Above-average rainfall in March 2021 has eased long-term rainfall deficiencies and encouraged optimism in agricultural communities in the region. Extended drought conditions and large-scale bushfires have negatively affected agricultural communities in recent years (BOM, 2021). The rate of warming in the region has accelerated since 1960, and in the mid- to long-term, the BOM have projected decreases in winter rainfall and harsher fire weather with high confidence (Ekström, 2015).

Natural assets of importance to the community include the critically endangered Grassy Box Woodland[6] ecological community (e.g., the Dunedoo Woodland Learning Centre), Travelling Stock Reserves (TSRs) (the LGA has 1,378 ha) which supports livestock operations as well as holding other biodiversity, Indigenous and European cultural, heritage and social values, and community-managed environmental reserves including those managed the Mudgee Local Aboriginal Land Council and the Adams Lead Reserve (3.3 ha) managed by the Mudgee District Environment Group. Flirtation Hill is also locally known as a vantage point with extensive views to the north of Gulgong.

[6] White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland

3.6.2 Human Capital

The level of human capital within a community is assessed by considering population size, age distribution, education and skills, general population health and the prevalence of at-risk groups within the community.

The following provides a summary of the key characteristics of the study areas from a human capital perspective (refer to **Appendix A** for the complete dataset).

The population has increased in the Mid-Western Regional LGA since 2006 and is expected to rise until 2041, particularly in the age group of 75 years and over (refer to population trends in **Figure 11**). In contrast, the Warrumbungle Shire LGA population has decreased in the same timeframe and is expected to continue to decrease in the coming years with the only age groups projected to rise being those 75 years and over (refer to **Figure 12**).

This trend is reflected in the median age of the study communities, with both Mid-Western Regional LGA and Warrumbungle Shire LGA having median ages over the NSW average (42 and 49 years respectively, compared to 38 years for NSW. The suburb with the highest median age is Mebul which has a median age of 63 years.

The population has a low rate of Year 12 completion compared to the NSW average, with a higher percentage of certificate level qualifications rather than Bachelor level qualifications in all study communities.

The proportion of the population completing Year 12 and tertiary education has increased in both LGAs since 2006.

Both LGAs have a higher proportion of Aboriginal and Torres Strait Islander residents than the NSW average (Mid-Western Regional LGA 5%, Warrumbungle Shire LGA 10%, compared to 3% in NSW). The suburb of Mebul has a significantly higher Aboriginal and Torres Strait Islander population (18%), whilst Tallawang and Merotherie recorded no Aboriginal-identifying residents within the population. Mudgee is also the administrative centre of the Mudgee Local Aboriginal Land Council.

The Mid-Western Regional LGA falls within the Three Rivers Regional Assembly (TRRA) area (which extends from Lithgow in the east of NSW through to Nyngan in the west and represents the interests of Aboriginal people across the communities of Bathurst, Dubbo, Gilgandra, Mudgee, Narromine, Nyngan, Orange, Parkes, Peak Hill, Trangie, Warren and Wellington). The TRRA facilitates the involvement of Aboriginal communities in setting regional priorities and strengthening the capacity of leaders and community members.

To preserve the history and culture of the Wiradjuri people, five memorials are currently being established in the Mudgee area as part of the Wiradjuri Mudgee-Dabee Stories Project (Mudgee Guardian, 2015). Scattered through the community, these memorials are located at sites of cultural significance to the Wiradjuri people.

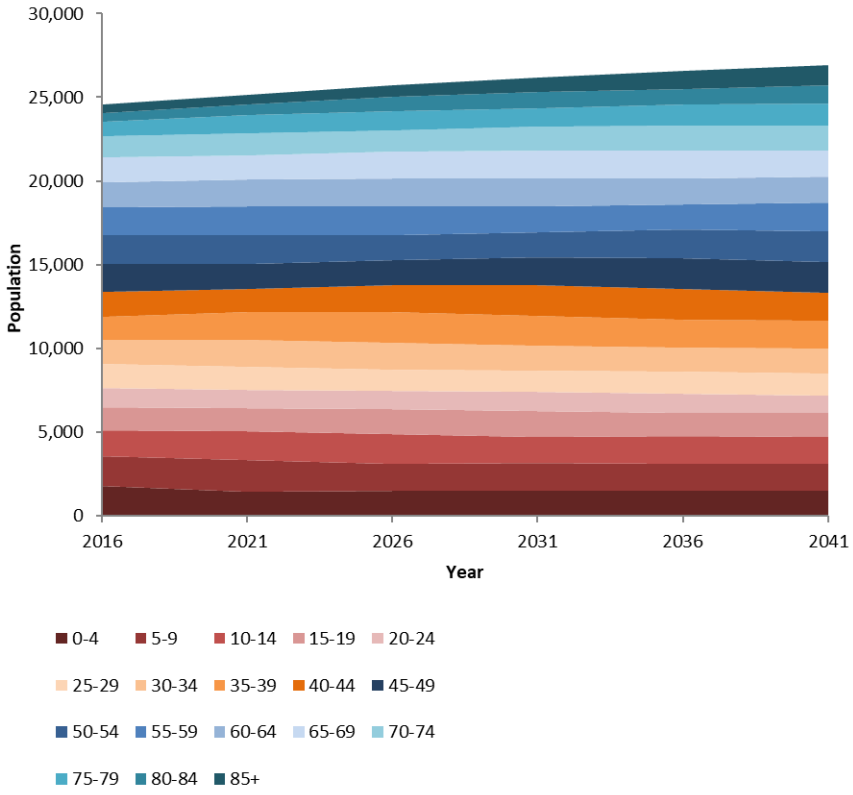


Figure 11 Mid-Western Regional LGA Population Projections

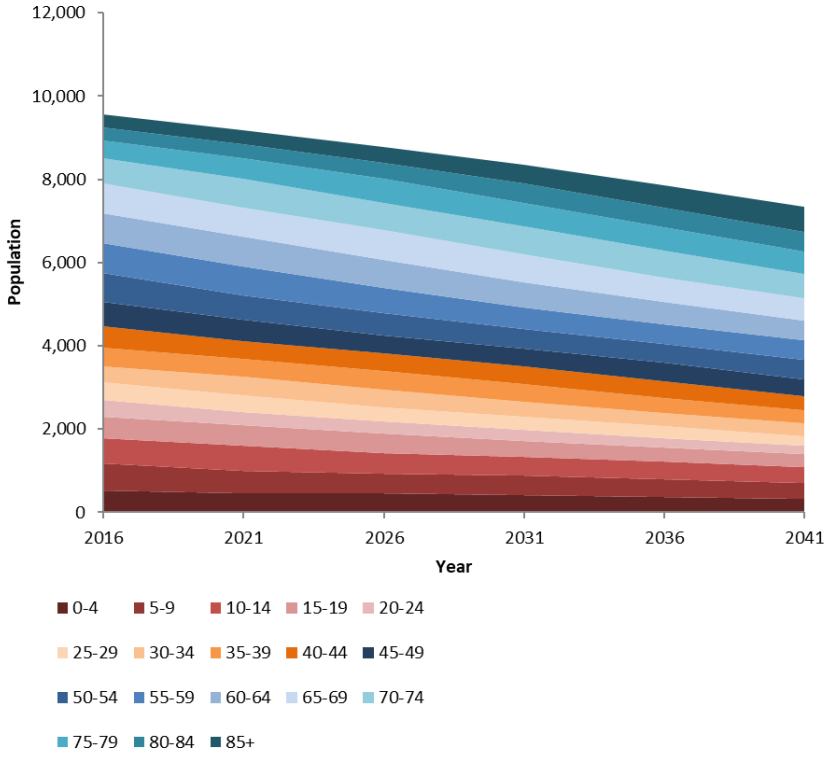


Figure 12 Warrumbungle Shire LGA Population Projections

By way of summary, **Figure 13** outlines the Socio-Economic Indexes for Areas (SEIFA), prepared by the ABS. A low score indicates a greater degree of disadvantage, with the lowest 10% of areas receiving a decile of one, and the highest, a ten. It should be noted that no comparison can be made between LGAs and state suburbs on ranking, as rankings are only comparative within each geographic classification.

The SEIFA Index of Education and Occupation (IEO) for each of the SSCs reflects the general level of education and occupation-related skills of people within an area, indicative of relative disadvantage compared to other areas in NSW. The highest IEO index across the communities is within the 5th decile, indicating that approximately half of the other SSCs and LGAs in NSW have a higher level of education and occupation-related skills in comparison. Specifically, Gulgong has the lowest level of education and occupation-related skills compared to the other study communities, and is within the lowest 10% of NSW, with Warrumbungle Shire having a higher level than Mid-Western Regional LGA, though still relatively low within NSW broadly.

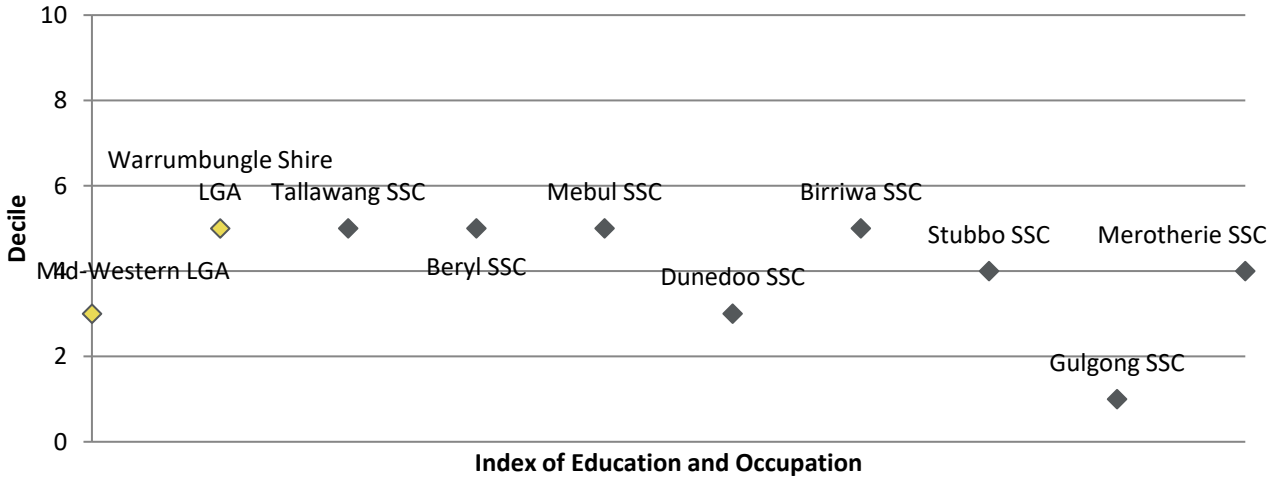
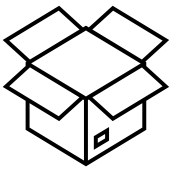


Figure 13 SEIFA Index of Education and Occupation

Source: (SEIFA, 2016)

3.6.3 Social Capital

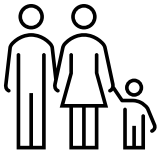
Various indicators can be used to examine and assess social capital. Such indicators include the level of volunteering, population mobility, crime rates, and the demographic composition of the community, such as the percentage of people born overseas, language proficiency etc. The following provides a summary of the key characteristics of the study areas from a social capital perspective, with the dataset available in **Appendix A**.



The proportion of the community with a different address one year ago, and five years ago, is consistent with or lower than the state average, meaning residents have less mobility. Furthermore, the level of mobility of Mid-Western Regional LGA residents has remained consistent since 2006, with mobility of Warrumbungle Shire LGA residents decreasing since 2006.

Across the broader Mid-Western Regional LGA (22%) and Warrumbungle LGA (28%), volunteerism is higher than the state average (18%) which is reflective of other regional areas in NSW; however, the rate of volunteerism has decreased in both LGAs since 2006. The rate of volunteerism in the suburbs of Tallawang, Stubbo and Merotherie is lower than the state average.

There are significantly less people born overseas in all the study community than the NSW average (30%). The most diverse community is Stubbo with 9% of the population born overseas, in contrast, the suburbs of Mebul, Birriwa and Merotherie have 0% of their population born overseas.



Both LGAs have a higher number of single parent families than the state average, however, a number of the study communities have no single parent families.

The majority of the population in each study area are family households, with very little presence of group households and less than a third of each community being lone person households. However, the number of lone person households is increasing whilst the number of family households is decreasing.

The prevalence of crime is higher in the Mid-Western Regional LGA than Warrumbungle Shire LGA, however, both LGAs are in the bottom third of LGAs in NSW for most prevalent crimes, suggesting low crime rates in comparison with the broader state.

Figure 14 provides the overall socio-economic status and level of disadvantage within each community, as determined by the Index of Relative Socio-economic Disadvantage (IRSD) - a SEIFA score prepared by the ABS which ranks areas in Australia according to relative socio-economic disadvantage. A low score indicates a greater degree of disadvantage, with the lowest 10% of areas receiving a decile of one, and the highest, ten. It should be noted that no comparison can be made between LGAs and state suburbs on ranking, as rankings are only comparative within each geographic classification.

When considering the relative socio-economic disadvantage of the study communities, Dunedoo and Gulgong SSCs have the most disadvantage in comparison to the other study communities, with Mebul having the least socio-economic disadvantage. Mid-Western Regional LGA has a lower level of relative socio-economic disadvantage than Warrumbungle Shire LGA).

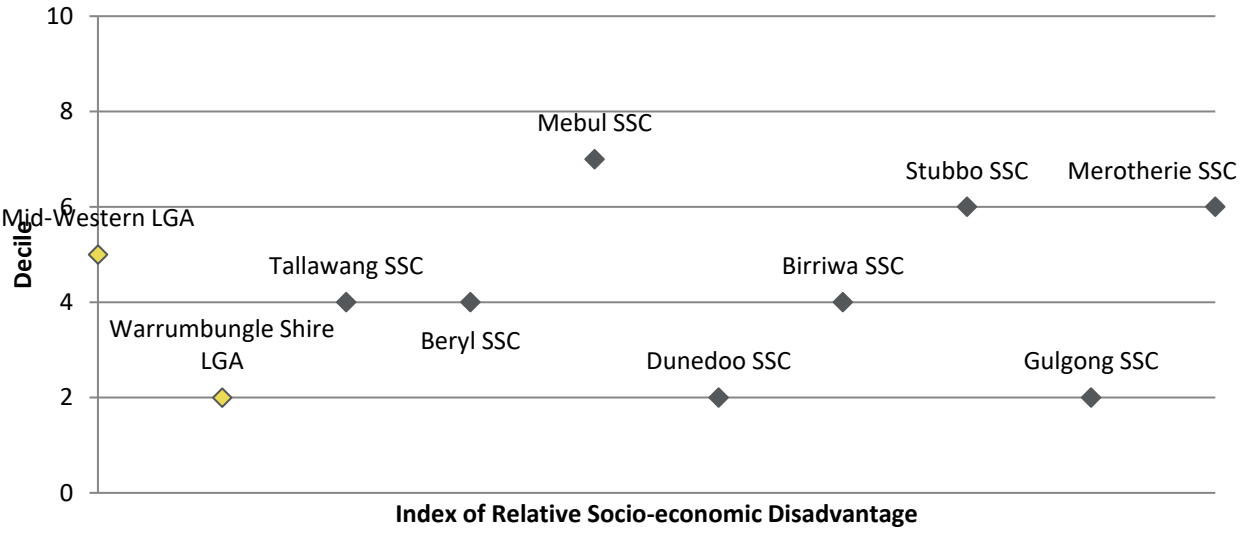


Figure 14 SEIFA Index of Relative Socio-economic Disadvantage

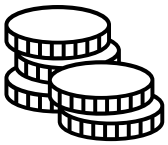
Source: (SEIFA, 2016)

3.6.4 Economic Capital

Examining a community's economic capital involves consideration of several indicators, including industry and employment, workforce participation and unemployment, income levels and cost of living pressures, such as weekly rent or mortgage repayments. The following provides a summary of the key characteristics of the study areas from an economic capital perspective, with the complete dataset in **Appendix A**).

The proportion of the labour force employed full-time in both Mid-Western Regional and Warrumbungle Shire LGAs has decreased since 2006, the unemployment rate in the LGAs has also decreased since 2006 however remains above the state average (6.5% and 7.9% respectively compared to 6.3%). In contrast the number of part-time workers has increased. This trend is not uncommon in an ageing population.

The unemployment rate is highest in Beryl SSC (15.6%, compared to the NSW rate of 6.3%) and aligns with Beryl having the highest median age of the study communities (63 years of age), whereas Stubbo has the highest rate of full-time employees (63.2%, compared to 59.2% in NSW).



As a result of these employment patterns, the median weekly household income is below the NSW average across both LGAs and all the study communities except for Merotherie, which has a median of $2,125. The suburb with the lowest median weekly household income is Stubbo ($609 a week). Despite the lower-than-average income, median weekly household income has increased in both LGAs since 2006.

In most cases, the cost of living in the study communities is lower than the state, with the median monthly mortgage repayments in all study communities except for Tallawang being lower than the NSW average. Similarly, mortgage prices have also been on the rise in both LGAs since 2006.

The same trend has been experienced in regard to rental prices, with the weekly median rent for a 3-bedroom house all below the state median and rental costs in the LGAs rising since 2006. Beryl has the highest median weekly rent at $270 in comparison to the NSW median of $380.

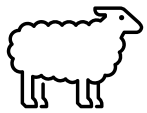
The low median household income in Mebul means that it has the highest cost of living, on par with NSW, with the median weekly rent equalling 26% of the median weekly household income. The suburb with the lowest cost of living is Stubbo at 16%. Cost of living has been rising across both LGAs since 2006, with the Mid-Western Regional LGA (24%) nearing the NSW figure (26%).

As at the 2016 ABS Census, approximately 9% of workers in the Mid-Western Regional LGA reported the census category of 'agriculture, forestry and fishing' as their industry of employment, compared with 2% across NSW more broadly. Whilst the agriculture industry has been perceived as a key industry of employment in the LGA, it has not been the top industry of employment in recent times (2006-2016).

In 2006, retail trade was the top industry of employment (13.4%), with mining overtaking the industry in 2011 to be the top industry of employment for residents in the Mid-Western Regional LGA in both 2011 and 2016. Retail trade remained the second highest employer of residents in 2011 and 2016, with agricultural consistently being the third highest employer in 2011 and 2016.

The agricultural industry is the top employer in all the study communities, except for Gulgong (where mining is the top employer). The closure of several resource extraction Projects in surrounding communities has created key changes in these localities, specifically, the closure of the Sibelco Tallawang magnetite mine in 2016 led to a reduction in the availability of mining jobs in the Mid-Western Regional LGA. Prior to closure, all employees working at the mine were based in Mudgee (MiningLink, 2019).

In the Warrumbungle Shire LGA, agriculture, forestry and fishing has consistently been the top industry of employment since 2006, with approximately a third of the population employed in the industry (27.6% in 2016). Health care and social assistance is the industry that employs the second highest proportion of people (12.2% in 2016), followed by education and training (11.5% in 2016).



The Mid-Western Regional LGA attracts over 573,000 visitors each year through its viticulture, food, sport and cultural events (Mid-Western Regional Council, 2019). Deemed the gateway to the Central West and Far West regions of the State, and 3-4 hours' drive from Sydney and Newcastle, Mudgee is also easily accessible from the surrounding regional centres. According to Tourism Research Australia, visitors to the Mid-Western Regional LGA spent on average three nights in the area, with a total annual spend of $148 million dollars (Tourism Research Australia, 2017). According to the Mudgee Region Annual Report (2018), the tourism industry in the Mudgee tourism region generated $924,083 in revenue for the year 2018. This was an increase of $44,116 (5%) from 2017 ($879,967 revenue).

The SEIFA Index of Economic Resources (IER) reflects the economic resources of households within an area and includes variables such as household income, housing expenditure (e.g., rent) and wealth (e.g., home ownership). A low score indicates a relative lack of access to economic resources in general, while a high score indicates greater access to economic resources.

When considering the study communities, Dunedoo and Gulgong are again the most disadvantaged, whereas Mebul has the highest access to economic resources. Mid-Western LGA has a higher access to economic resources than Warrumbungle Shire LGA (refer to **Figure 15**).

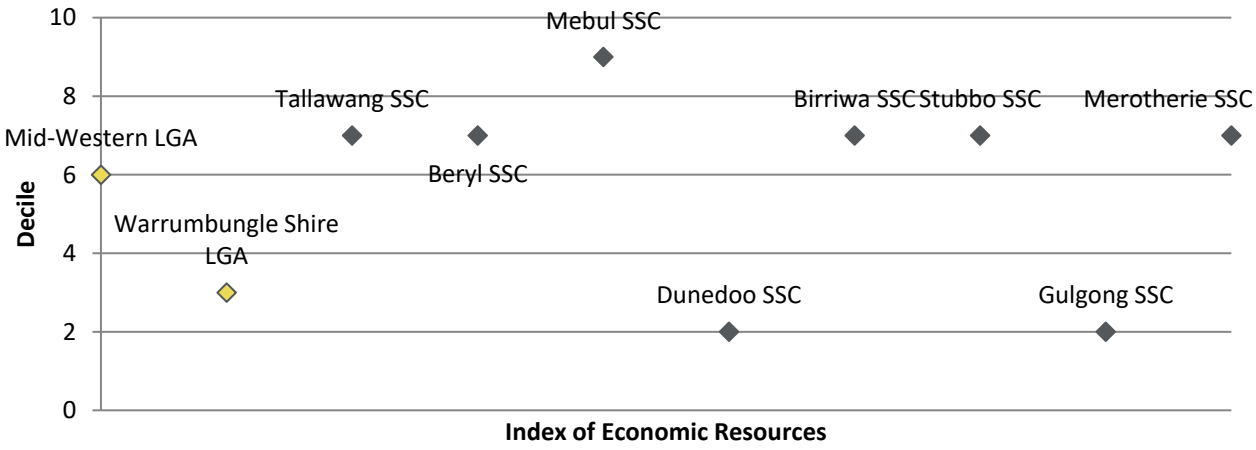


Figure 15 SEIFA Index of Economic Resources

Source: (SEIFA, 2016)

The Mid-Western and Warrumbungle Shire local government areas compare to others across the region as outlined in **Figure 16**.

Figure 16 Local economic profiles in the Central-West Orana Region (DPIE, 2016)

3.6.5 Physical Capital

Physical or built capital includes provision of infrastructure and services to the community. Within this capital area, it is important to consider the type, quality, and degree of access to public, built and community infrastructure (including amenities, services, and utilities) as well as housing. The Project's area of social influence can be characterised as having a wide range of community services (refer to **Appendix A** for the complete dataset).

The study communities have a higher proportion of dwellings that are fully owned (without a mortgage) than the NSW average, which is common in farming communities in which properties are passed down through the generations, however, this trend is decreasing in line with rising mortgage prices.

The proportion of houses owned with a mortgage is rising except for in Birriwa and Merotherie, where there are no houses owned with a mortgage. Similarly, the proportion of rented dwellings is increasing, however, remains below the NSW proportion (31.8%) in all suburbs except for Mebul (35.7%).

Whilst the proportion of households in mortgage stress in both the Mid-Western Regional LGA and Warrumbungle Shire LGA have decreased since 2006, the proportion remains similar to NSW (9.4% and 9.5% in 2016 respectively, compared to 9.6% in NSW), with the proportion of households experiencing rental stress increasing within the Mid-Western Regional LGA surpassing NSW (32.3% and 27.9% respectively in 2016). This is a sign of high demand in the rental market and can often result in increasing rental prices.

A majority of the study communities have a lower proportion of dwellings with internet access when compared with NSW (85%), except for Merotherie which has a 100% of dwellings with internet access and Beryl which is on par with NSW.

Regarding the provision of social infrastructure, there has been much controversary in recent years relating to the under supply of health care in the region. The town of Gulgong has been reliant on telehealth services since June 2020, when the contract for the towns one doctor was not renewed. The Mid-Western Regional LGA has a below average rate of transport (3.9 ASR per 100) and cost (2.1 ASR per 100) affecting access to healthcare in comparison to NSW (4.3 ASR per 100 and 2.5 ASR per 100 respectively).

In terms of connectivity, the Castlereagh Highway transverses the region and is a main route of travel for inland residents, connecting Lithgow in the south to south-east Queensland in the north. The highway is part of the Great Inland Way connecting Sydney and Cairns. The Castlereagh Highway meets the Golden Highway at Dunedoo which is a key route of travel from Dubbo to Newcastle, giving the region access to the Hunter region and the major metropolitan centre of Newcastle. Railway lines at Binnaway and Mendooran provide opportunities to expand the freight network and support the local agricultural industry, particularly for the Warrumbungle LGA.

As a result of the proximity to major national highways, the *Central West and Orana Regional Plan 2036* outlines a vision to capitalise on the location to grow the freight industry which may result in opportunities for new intermodal facilities and support rail infrastructure (NSW Government, 2016).

The Gwabegar railway line also runs through the Mid-Western Regional LGA, however, the portion of the railway between Kandos and Gulgong has not been operational for several years. Transport for NSW have been investigating reopening the line, with a feasibility study published in August 2020 outlining positive economic benefits. The project is now in the design and planning stage. Mudgee has a commuter airport with Fly Pelican operating two return flights a day on weekdays between Mudgee and Sydney.

Based on service capacity assessments undertaken in the region, strain on services is evident, due to the large influx of seasonal and itinerant workers for mining and agribusiness, such as in the viticulture, pome fruit, nut, cotton, and stone fruit industries, particularly during harvest periods (NSW Government, 2016). A range of accommodation options is needed to meet this temporary workforce demand, particularly in the context of growth in other sectors such as renewable energy. The NSW Government has outlined a number of actions to support the capacity building of the region, including producing guidelines to help councils plan for and manage seasonal and itinerant worker accommodation, and preparing planning guidelines for the short-term accommodation of mining employees to support workforce needs during mining construction, operation or shutdown.

3.7 Local Challenges and Opportunities

Table 3.2 outlines the key challenges and opportunities for the host LGA as acquired from the review of local, regional, and state government reports, strategies and plans, ABS Census data and other secondary sources of data, local media and community consultation.

In summary, the key challenges faced by the Mid-Western Regional LGA include the need to provide for an ageing population with limited health services and addressing the existing strain on short-stay accommodation provision. The redevelopment of Mudgee Hospital is a response in place to partially overcome the first matter. The abundant natural resources and strong tourism sector, combined with the growth in renewable energy projects, however place the LGA in a good position to further diversify the local and regional economy.

The increasing number of transient workforces caused by multiple major projects either in construction, or proposed in the area of social influence, results in some flow-on challenges for the region in maintaining an existing strong sense of community and decreasing anti-social behaviour. However, the low mobility of the community is suggestive of a sustained sense of community, and the high rate of volunteerism indicates that the community is willing to participate in community initiatives. This coupled with Council's plans to increase housing provision, will likely result in positive social development for the community more broadly.

To further support regional development, issues such as traffic congestion and the emerging strain on local service provision need to be addressed, as well as upgrades needed to road infrastructure and the mobile network. Some of these identified constraints are already being considered by Council.

Table 3.2 outlines identified local challenges and opportunities according to the five key capital areas.

Table 3.2 Local Challenges and Opportunities

Challenges	Capital Area	Opportunities
• Traffic congestion • Road infrastructure and road surfaces requires upgrades • Lack of public transport options • Broadband and mobile coverages need upgrading • Expansion of the mining industry - potential strain on infrastructure • Shortage of short and long-term accommodation, seen to be connected to growth in mining industry • Limited commercial flights per week	Physical	• Continued investment in road upgrades including Wollar Road • Hospital expansion • Historic character of region • Upgrades and development of recreational infrastructure for our youth including a water park, skate park upgrades and district adventure playground • Improvement in footpaths and shared cycleways • Food and Garden Waste collection service being implemented
• Water security and drought prone • Impacts of mining on natural environment require management and regulation	Natural	• Area has quality agricultural land • Community values the beautiful natural environment • Area has rich mining resources • Region hosts 101,000 ha of national park including Goulburn River and Warrumbungle National Parks
• Temporary workers accommodation facilities are available, however can have unintended detrimental social consequences, such as segregation from the existing community	Social	• Support arts and cultural development across the Region • Council's plan to increase housing options in the region • Thriving tourism, arts and cultural sectors • A new art gallery facility being developed • Tight-knit community • Strong representation of Aboriginal and Torres Strait Islander people in the community • Low prevalence of crime • Low mobility of residents resulting in sustained sense of community

Challenges	Capital Area	Opportunities
• Potential for labour force competition due to mining activity • Increasing retirement age population leading to decrease in skilled employee base • Low median weekly household income resulting in less spending in the local economy • Increasing rental housing prices	Economic	• Region has strong and diverse industries including mining, tourism, and agriculture • Council to support Projects that create new jobs in the Region and help to build a diverse and multi-skilled workforce • Council supports the expansion of essential infrastructure and services to match business and industry • Strong business services sector • Low cost of living
• Limited health services • Difficulties in attracting and retaining General Practitioners (GPs) • Limited tertiary education options • Aging population	Human	• Population increasing • Proportion of residents undertaking tertiary education increasing

Compiled from the following: MWRC Community Plan Towards 2030 (Mid-Western Regional Council, 2017)*; MWRC Delivery Program 2017/18 – 2020/21 Operational Plan 2018/19* (Mid-Western Regional Council, 2017b)*; MWRC Workforce Strategy 2017/2021* (Mid-Western Regional Council, 2017a)*; MWRC Asset Management Strategy 2017/2021* (Mid-Western Regional Council, 2017c)*; MWRC Community Engagement Summary of Findings* (Mid-Western Regional Council, 2017d)

3.7.1 Identification of Vulnerable Groups

Through the development of the social baseline profile, the following population groups within the area of social influence have been identified as potentially having vulnerability to the social or economic changes that the Project, and the cumulative effects of other developments across the region, may bring:

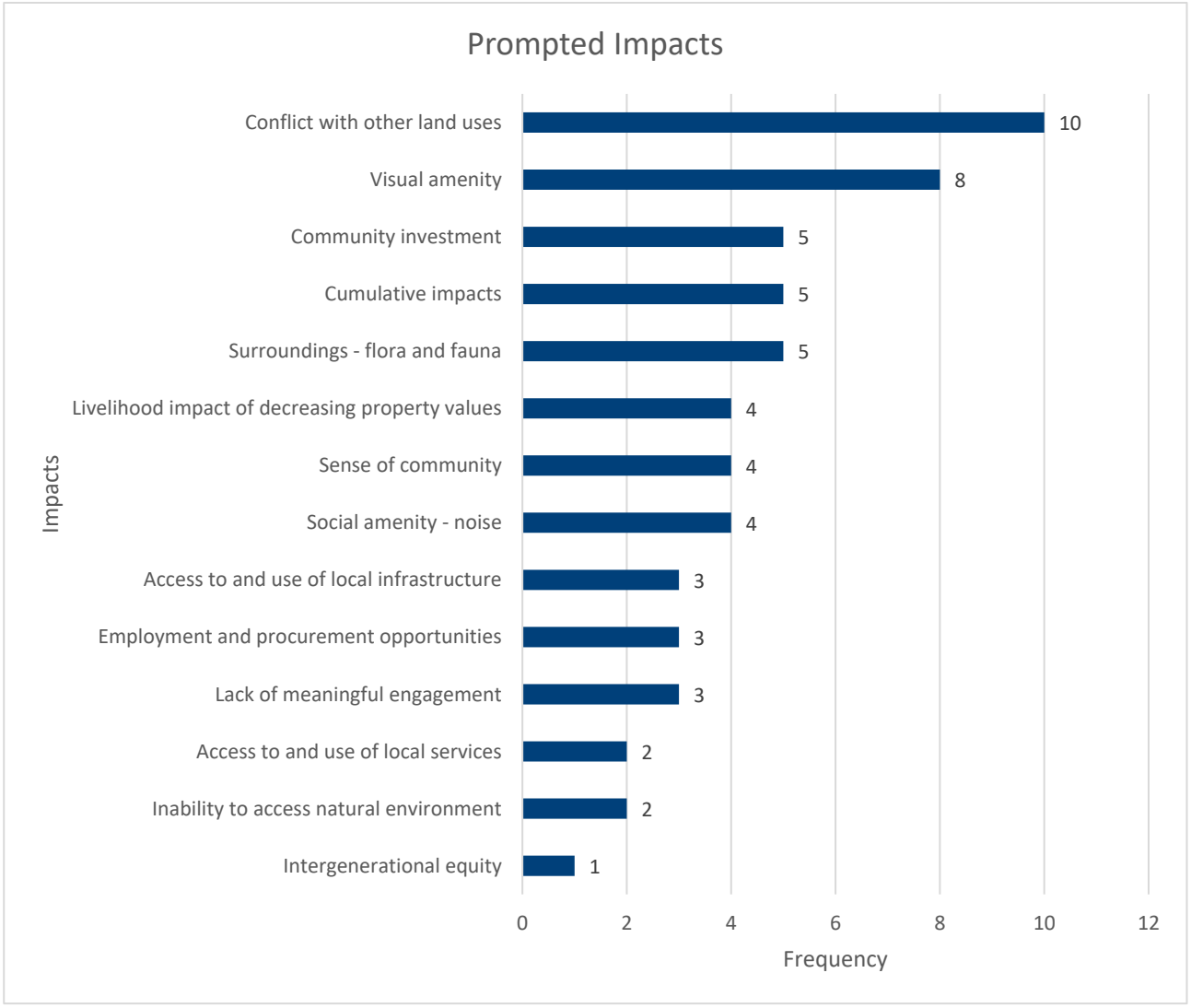
- regular users of short-stay accommodation and tenants within the private rental market
- local job seekers
- local Aboriginal and Torres Strait Islander residents
- residents or property owners whose property access and livelihoods may be affected.

4.0 Perceived and Likely Social Impacts

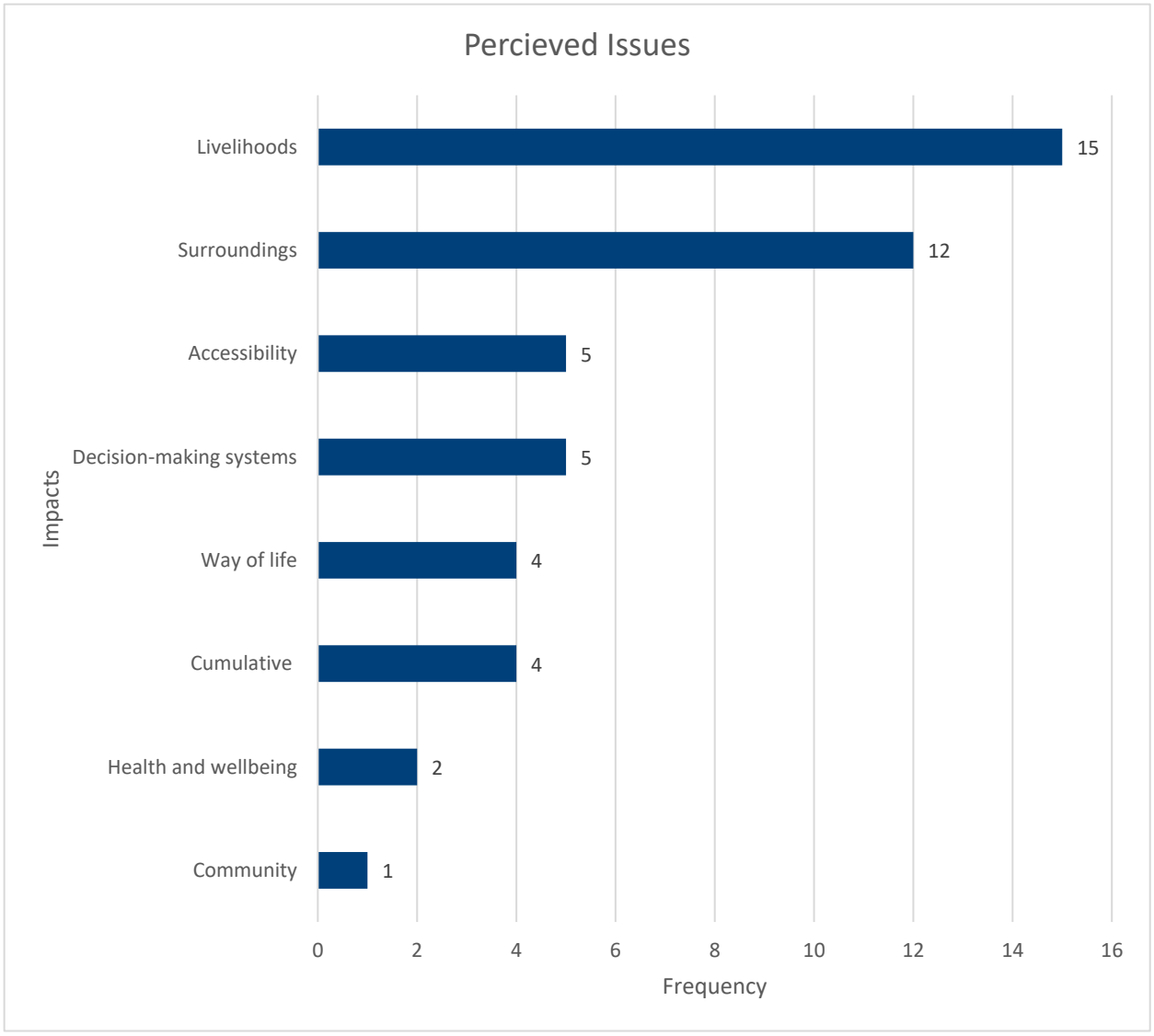
This section analyses and discusses the scoped issues and impacts (positive and negative) in relation to the Project. Analysis has been framed in accordance with the social impact categories outlined in the Guideline and standard SIA practice, and has distinguished community consultation responses that were independently raised or top of mind (unprompted) as compared to those that were prompted as per the Consultation Discussion Guide in **Appendix B**.

4.1 Summary of findings

When asked directly about perceived or potential impacts associated with the Project, the top concerns raised through community consultation were similar to those reported as top of mind (unprompted), with competing land uses (n=13), visual amenity (n=12) and noise impacts (n=9) identified as the most frequent prompted responses (refer to **Graph 4.1**). **Graph 4.2** lists the key social impact themes associated with the Project in order of frequency, as identified by members of the community (unprompted) who were consulted. **Table 4.1** details the unprompted issues and perceived impacts raised through consultation.



Graph 4.1 Prompted Impacts

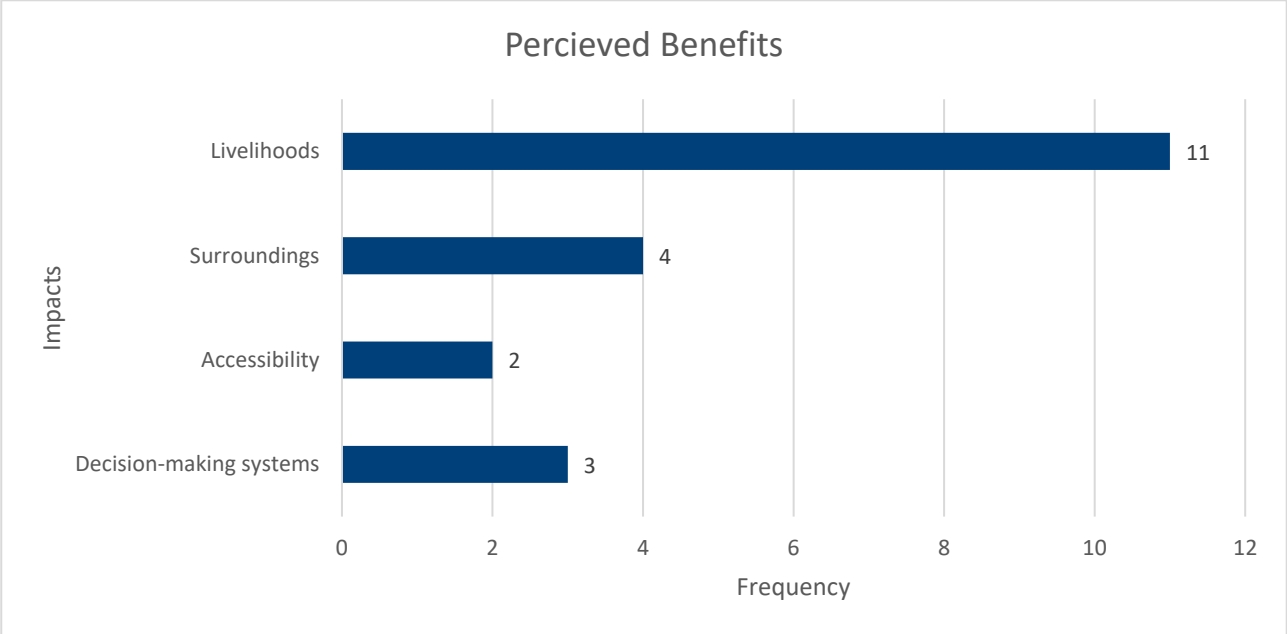


Graph 4.2 Perceived impacts (unprompted)

Table 4.1 Frequency of Perceived Impacts (Unprompted)

Impact Category	Impact	Frequency	Total Frequency
Way of life	How they get around	0	4
	How they live	3	
	How they work	1	
Community	Community cohesion	1	1
Accessibility	Access to facilities	1	5
	Access to infrastructure	1	
	Access to property	0	
	Infrastructure damage	1	
	Strain on services	2	
Health and wellbeing	Stress and anxiety	1	2
	Safety	1	
Surroundings	Impact on natural environment	3	12
	Land use conflict	5	
	Noise amenity	0	
	Social amenity	1	
	Visual amenity	3	
Livelihoods	Capacity to sustain themselves	4	15
	Compensation	3	
	Distributive equity	2	
	Local employment	2	
	Property value	4	
Decision-making systems	Ability to meaningfully influence decisions	1	5
	Ability to make informed decision	1	
	Inadequate consultation	0	
	Procedural fairness	3	
Cumulative	Change caused by multiple projects	4	4

Community-identified positive social impacts, benefits, or opportunities associated with the Project are shown in **Graph 4.3** below and further defined in **Table 4.2**.



Graph 4.3 Perceived positive impacts and community benefits

Table 4.2 Perceived Benefits and Frequency

Impact Category	Impact	Frequency	Total Frequency
Decision-making systems	Empowering decision-making	1	3
	Facilitating research	2	
Accessibility	Infrastructure Improvements	2	2
Surroundings	Impact on natural environment	2	4
	Education on natural environment	1	
	Aesthetic value and amenity	1	
Livelihoods	Ability to sustain their livelihood	5	11
	Community investment	2	
	Local business opportunities	1	
	Local employment & training	3	

Further description of the issues noted within each SIA category or theme are further described in the following sections.

4.2 Way of Life

Some respondents raised that their overall way of life could be affected by the Project (n=4). These concerns were largely associated with impacts discussed below including changes in land use, and the potential changes to public services and infrastructure, for example, one respondent was concerned about access routes to their property being affected.

4.3 Community

Some stakeholders raised concern for the potential of the Project to cause distributive inequity between landholders – those who receive financial gain from hosting project infrastructure, compared to neighbours who live on or owned land adjacent, and do not personally obtain any benefit from the Project.

Although community cohesion was not identified directly by nearby residents, a community group noted the potential damage to interpersonal and neighbourly relations that could result due to the emergence of a 'winners and losers' effect, and as a result of the development of mistrust and speculation across the community. Negative experiences associated with other development projects in the region was seen to be a factor in creating this division – *"projects like this can tear people apart".* Further, one community group raised that many local people are likely to feel a distaste at the perceived inequality of solar energy generation largely benefitting urban energy consumers however impacting upon rural communities such as themselves.

Based on experiences from comparable projects, with large temporary workforces in regional or remote settings, communities can experience changes to the composition and character of their communities due to incoming transient construction workforces. Over time, this can potentially cause a level of income disparity between differing groups of the population and lead to a shift in gender relations within the community. Related, it was raised through community consultation that there is a broad community desire to promote the integration of transitional workforces within the local community by limiting the development of accommodation camps. Although competition for accommodation within local towns was raised as a concern, it was noted that the Mudgee community is accustomed hosting workforces employed on major projects and local services providers have structured their businesses to meet this need over years already.

4.4 Accessibility

Accessibility was also raised as an area of concern by stakeholders (n=5), namely, the potential strain on local accommodation and housing (both affordability and availability) during the Project's construction period. Respondents noted that demand for accommodation in the area is already high from tourism and the mining industry, and that additional pressure on service provision could limit access for others or compete with tourism. One resident queried: *"is there going to be enough accommodation? Our town is a tourist town and is usually booked out".* This matter was also raised by the Mid-West Regional Council as a priority, who sought for the Project to consider a comprehensive workforce accommodation strategy.

A positive effect of the Project as raised by stakeholders was the anticipated improvements provided by the Project to local road networks that will be needed for the construction of the Project that will in turn also improve the accessibility and quality of local infrastructure provision for the wider community. Given the high level of private car dependency across the region, this will likely be a high expectation of a diverse range of local stakeholders.

One respondent identified the importance of ensuring adequate access to nearby properties is considered with diversions in place where necessary, prior to construction, to minimise disruption to residents.

4.5 Culture

Local Aboriginal organisations consulted during this phase shared their general interest and concern for:

- land rights, land uses and land management
- preservation of cultural sites and traditional practices
- cultural connection to Country
- community programs and representation of Aboriginal people in the local area.

The need to be involved in any local road upgrades associated with the Project was raised as a matter of importance, in order to carry out Aboriginal cultural heritage monitoring and land surveys. It was also described that there is a high expectation upon developers and operators of large-scale projects in the region to support or provide resourcing for the continued and improved delivery of local community programs, and that the level of social acceptance of projects are linked to the approach companies take to working with, and sharing benefits with, local communities.

Other elements of cultural effects have been raised and addressed in other sections, such as those relating to community values and connections to the land and surroundings that the Project. Impacts upon culture and on local Aboriginal communities in particular will be further explored during the preparation of the EIS.

4.6 Health and Wellbeing

One respondent identified a potential increase in level of anxiety and stress that the Project could generate for nearby residents due to the fear of the unknown, uncertainty, and a feeling of losing control over their futures and surroundings. Several other community members raised concerns for the public safety of local road users due to the Project's construction activities and the potential increase in heavy vehicles on public roads as well as the potential for solar farms to act as a fire hazard.

Several stakeholders recognised the long-term environmental and health benefits provided by solar power such as through this Project, as a form of low-carbon energy generation.

4.7 Surroundings

The likely visual change to the landscape was another commonly raised concern through community consultation. An increase of built infrastructure and associated changes to the rural character of the landscape was viewed adversely by numerous respondents, particularly in the event that the Project could impact upon natural features of the landscape that are of community value. One nearby landholder described this as they could be *"surrounded by solar farms to the north and south"*.

Some community members were concerned that vegetation and particularly mature trees may need to be removed to accommodate the solar panels and that there was uncertainty around the decommissioning process and the ability to return the area to agricultural land.

Nearby landholders have also raised their concern for an increase in noise and traffic in the locality which could cause day-to-day amenity disruption for nearby residents largely along Puggoon Road, as well as an increase in commuter travel times.

One respondent identified the opportunity for the Project to contribute to the overall amenity of the local area as a way of providing Project benefits to the wider community that may not otherwise receive the positive effects of Project activities.

4.8 Livelihoods

The top issue reported by stakeholders consulted was the perceived impact of the Project on personal livelihoods (n=15), specifically the potential devaluation of property values for nearby properties and the associated inability for people to continue agricultural operations on their properties. Several nearby residents raised the perceived reduction in property values associated with land or property adjacent to, or within eyesight of solar panels, as being disruptive to their livelihoods and having an effect on people's future livelihoods - depending on the extent to which a household's or individual's financial security, lifestyle plans and personal aspirations, and dependency of relatives, rely on these assets. In this project context, being a drought-prone region, land values are particularly susceptible to external forces.

Respondents noted their concern for the dissection of agricultural operations and personal disadvantage that could be experienced to landholders' livelihoods caused by the Project, including development of ancillary infrastructure. Numerous stakeholders have raised this due to the high land dependency across the community and the local values associated with the land and the local surrounds. It was described by one respondent that "the community is strong… and the land is our livelihood". Another landowner stated that they were concerned about a potential '*spider web'* of transmission lines and poles if there are other projects also proposed nearby, and that the fragmentation of high quality and valuable agricultural land is problematic for the local community and their futures.

Conflict with other land uses, specifically continued access to land for food production and livestock grazing, was the most frequently raised issue when respondents were prompted with potential Project impacts. One community group described this context: *"productive land is a shrinking resource due to infrastructure development across the state…in Australia arable is already highly limited".* This view is informed by perceptions of existing or proposed solar farm developments in the region, whereby communities do not perceive projects to support co-existence with agricultural activity. This sentiment is reflected by some stakeholders that support the uptake of solar energy generation but believe that solar panels *"should only be installed on the tops of buildings so to not take away land for other uses".* Further, a local community group reflected on other recent solar developments and the subsequent broader changes taking place across the region:

But now that there is so much money available to develop solar farms, if that money destroys rich farmland... isn't that missing the point? Perhaps we could find some of our other boundless plains (or roofs...) so that solar and agriculture can both contribute to Australia's prosperity? (Gulgong Residents for Responsible Renewables, 2019).

The top benefit mentioned by stakeholders in response to the Project was the impact on their livelihoods (n=11) through the potential financial benefits from hosting of project infrastructure or any potential compensation in-kind for neighbouring landholders or hosts of ancillary infrastructure. This reflects the most frequently raised issue and illustrates the central importance that community members place on sustaining their livelihoods. The perceived livelihood benefits primarily related to financial compensation provided through the land access or acquisition required for the Project to individual property owners. This is understood to be a high benefit for a small number of people or families (the proposed site is hosted by four properties, with another four traversed by the transmission line corridor), however in their cases, it provides an increase to and diversification of household income streams. For example, one neighbouring landholder stated that they wanted to *"see adjacent landholders financially benefit from the projects"* yet acknowledged that the provision of compensation to some people may negatively impact others. Following on from this, it was suggested a pool of money to be distributed amongst adjacent landholders to see broader benefit experienced in the locality. A select number of nearby residents have also expressed an interest in hosting Project infrastructure on their land.

Respondents also highlighted the opportunity for local employment and contracting services, particularly during construction, to increase the commercial activity for local businesses and job security for local job seekers. Council, local businesses and residents focussed on the economic benefits the Project could provide to the local community and have raised the role that the Project carries in providing employment and contracting opportunities for service providers and businesses. One stakeholder described the potential social benefit that the Project could offer through diversification of skills and vocational training, and the establishment of a new industry sector with opportunity for workers to specialise, re-skill or upskill. Despite this, one community member raised that employment opportunities during operation and maintenance were perceived as low and the nature of infrastructure components being manufactured internationally infers that the benefits to the local community are minimal.

The indirect impacts on people's livelihoods such as an anticipated increase in commercial activity for local service providers and suppliers in nearby townships during the construction period has the potential to bring about positive flow-on social benefits and improved community wellbeing. Conversely, stakeholders have raised the risk of the Project missing an opportunity to provide local employment and procurement, which would potentially reduce social acceptance of the development: *"some local people have been frustrated and even opposed to other solar or wind projects in the area recently for bringing in labour such as backpackers to construct the farms".*

4.9 Decision-making Systems

It was recognised by several respondents, that the Project, while still in its early planning stages, would require more detailed information before concerns or benefits could be identified and discussed.

Some respondents identified the broader benefit the Project has as part of the low-carbon energy transition for Australia, and in turn its contribution to the sustainability and wellbeing of future generations: *"If the area is suitable for renewable energy and it is the way of the future, then it must be a good thing for the environment".* As part of this, stakeholders saw a positive role for the Project to facilitate research and knowledge sharing into community decarbonisation efforts and biodiversity protection.

Concerns were raised regarding procedural fairness, related primarily to a desire amongst nearby landholders to receive 'fair' compensation for the impacts they too experience by living near the Project. This matter was raised in the context of nearby or neighbouring property owners wanting to realise benefits from the Project.

Furthermore, community members have raised the importance and appreciation for the early-stage consultation on the Project, and the desire to be consulted regularly and consistently as Project plans progress. This was described as wanting to ensure that local voices and affected people have been heard, their issues understood, and interests considered in the planning and assessment of the Project. One community group stated their view that developers such as RES "need to be doing a lot of listening".

4.10 Cumulative Effects

The rate of change across the Central West and Orana region, due to the growing number of proposed and active developments projects, and the associated cumulative changes caused by this activity, was mentioned by several respondents (n=5). The adverse impacts experienced by communities in the region were raised as examples of how major projects can cause community division, reduced levels of social cohesion, and mistrust amongst people. There was also a view that the rate of development currently being experienced may cause a growing opposition to major projects and large-scale industrial development in general amongst some groups within the community.

Multiple community groups and residents expressed interest in gathering or learning more about the plans for the Central-West Orana REZ more broadly, to inform their position on the Project. People have raised that local communities need to be better informed on how the region is able to provide enough energy to replace the ageing power infrastructure elsewhere in the State and to better understand the role that the community plays in hosting this energy generating infrastructure long-term.

One stakeholder highlighted the sense of uncertainty associated with development in the region and that community views on the Project need to be formed in consideration of the broader context. One respondent posed *"how many projects like this need to be developed in the region to replace the Liddell power station? What does that look like for our area longer term?".* Furthermore, one community member shared a view of solar energy that it is inappropriate in meeting the daily pattern of energy demand without simultaneously supporting storage technology.

Feedback received from several adjacent landholders have expressed their concern for the multiple changes they expect to experience due to there being two proposed solar farm projects in proximity to their properties (Tallawang Solar Farm and another). If both developed, the two projects would surround their properties and dwellings, raising issues regarding likely significant property devaluation, noise, visual and traffic changes that would cause disruption to their day-to-day experiences and alter the rural landscape of their existing surroundings.

One adjacent property owner described feeling "devastated, as the sale of the property is needed for retirement" and that the proposed solar farms to the north and south would devalue the property to likely make it unsellable even before the projects are constructed. Another adjacent property owner who has future plans to move onto the recently purchased lifestyle property has also expressed devastation as to how the multiple projects will affect personal plans and likely cause disadvantage. These landholders have raised their expectation for the two companies to be working together to ensure they are compensated or realise alternate benefit, and that their particular circumstances are considered to ensure that they do not experience disproportionately high effects of either or both projects.

5.0 Community Identified Strategies and Opportunities

Community identified strategies to mitigate or respond to issues and impacts, as well as opportunities for the Project and the proponent to positively contribute to the local community have been compiled in **Table 5.1**. This knowledge provides a basis to further consider and explore community benefit sharing options during subsequent phases of the Project. Based on this, **Section 6.0** identifies preliminary project refinements or management measures aligned with identified and perceived social impacts.

Project-led community development strategies often lead to greater social outcomes when an identification process of local needs and opportunities is undertaken in collaboration with local communities. Local benefit sharing schemes and targeted supports can over time generate improvements in a community's sense of place, social cohesion, and the capacity of local organisations.

Table 5.1 Potential Strategies and Opportunities

Impact/Issue	Strategy/Opportunity
Land use conflict and loss of agricultural livelihoods	• **Means to co-exist with agriculture** • RES to facilitate improved understanding and investigation on the co-location options with agriculture, *"with the end goal of sustaining the livelihoods of farmers and their families"* • Commission or undertake research into multipurpose land uses involving renewable energy generation, across other projects in Australia or using the Tallawang Solar Farm as a case study • Indigenous food initiatives such as native grass cropping or native beekeeping under the solar panels, or native seed purchasing to plant experimental crops on community-owned conservation reserves, or the facilitation of a lamb nursery within the fencing of the solar farm, Indigenous grasslands (e.g., a Kangaroo Grass crop underneath the solar panels) • Water resource sharing for neighbouring or nearby properties who struggle to source water for irrigation and livestock (referred to as an example in Forbes of local farmers that established such an arrangement bringing equal advantage to a large group of farmers). • Need for open and transparent engagement with RES in the development of the Project to bring about support for agricultural pursuits near the Project. It was suggested that through strong consultative processes, there would be a higher likelihood of the Project realising co-existence of both agriculture and renewable energy projects • RES to consider or explore options for future land use in the event of decommissioning the solar farm to understand the likelihood of continued use of the land for agricultural purposes in the future.

Impact/Issue	Strategy/Opportunity
Distributive equity and local benefit sharing	Stakeholders raised that the Project would have a positive contribution to the region: "*If they provide support to things the local area is lacking. Real support*". **Local employment, procurement, and training** • Young people who could establish themselves with strong experience and a specialised skillset through the Project – an opportunity not to be overlooked – *"It would be great for RES to consider supporting local apprentices during the construction periods, even if just a handful of people, these construction periods are huge opportunities for young trainees to skill up and get experience and build the local skills base, they could even be employed in maintenance moving forward".* • Proactive support for the establishment of programs that encourage and incentivise skilled workers to remain in the region or to otherwise relocate to the region • RES to provide structured opportunities for workers to specialise, re-skill or upskill • RES to strategically target local businesses and service providers to supply and service the Project **Infrastructure and service provision improvements** • Road and access route upgrades that can be used by local road users in the long-term • Local schools, children's playgrounds, as well as road upgrades which would benefit school bus routes • Water infrastructure for communal access to water for livestock **Community development funding scheme** • Neighbourly benefit programs such as through provision of a pool of money to be distributed amongst adjacent landholders to ensure broader benefits are experienced in the locality • Capacity-building or resourcing support for local environmental restoration and protection programs, including possum and bird boxes, weed control and restoration works for community-owned nature reserves • Support for local Aboriginal businesses, targeted Aboriginal community programs and local social enterprises • Sponsorship of local sporting teams • Facilitate or support decarbonisation efforts by residents and landholders
Partnerships and participation in decision-making processes	• Collaboration between RES and local community groups to enable and enhance emissions reductions initiatives and environmental protection • Proactiveness in multi-stakeholder or regional collaboration initiatives to support local organisations to reach their own decarbonisation targets • Support research or further industry investigation into the merits of small-scale, household participation in the transition to renewable energy: *"It would be nice to see companies like RES...come up with creative ways to develop projects whereby people can contribute to energy generation too"* • Knowledge sharing – a local community group raised a desire to collaborate and be involved in ecological studies and environmental management aspects of the Project to share knowledge about the local environment and areas of conversation importance.

6.0 Preliminary Social Impact Evaluation

As discussed in the above section, the scoping phase has identified a range of key issues of relevance to near neighbours, local communities, and stakeholders in relation to the Project. A preliminary evaluation of the likely social impacts has been developed in **Table 6.1** which will be further explored and validated during the EIS preparation phase. Only negative impacts scoped have been considered in this preliminary evaluation, with identified strategies and opportunities outlined in **Section 5.0**.

Table 6.1 Preliminary Impact Evaluation

Project aspect/ activity	Potential impact on people	Timing/ duration	Affected stakeholder groups	Perceived stakeholder significance	Project refinements/ management measures	Residual impact significance	Phase 2 Assessment level
Establishment of Project infrastructure including ancillary infrastructure	Competing land uses could cause loss of community dependency on land-based livelihoods and cause disruption to existing agricultural or livestock operations	Construction and operational phases	Host landholders	**High (Likely, Moderate)**	Identify and site project on properties: • whose landholders have given formal consent to host project infrastructure • where property characteristics and agricultural activities are compatible with project infrastructure Consider refinement to design and layout planning that allow for continued livestock grazing or cropping, in consultation with host landholders on a case-by-case basis Open, transparent, and accessible communication of Project information Investigate broader options for project to facilitate co-existence with agriculture	**Low**	Standard assessment

Project aspect/ activity	Potential impact on people	Timing/ duration	Affected stakeholder groups	Perceived stakeholder significance	Project refinements/ management measures	Residual impact significance	Phase 2 Assessment level
Establishment of Project infrastructure including ancillary infrastructure	Potential fragmentation of properties and restricted access to sections of properties could cause personal disadvantage	Construction and operational phases	Host and proximal landholders including for ancillary infrastructure	**High (Likely, Moderate)**	Consider refinement to design and layout planning that reduce farming disruption in consultation with affected landholders on a case-by-case basis Plan transmission lines and routes with sensitivity for existing land uses and individual circumstances Open, transparent, and accessible communication of Project information Investigate broader options for project to facilitate co-existence with agriculture	**Medium (Likely, Minor)**	Detailed assessment
Payments to host landholders	Reduced community cohesion, speculation of project benefits affecting interpersonal relations and lack of distributional equity	Project lifecycle including planning phase	Host and proximal landholders, broader community	**Medium (Likely, Moderate)**	Further consultation to characterise and assess specific circumstances and extent Open, transparent, and accessible communication of Project information Development of participatory local benefits scheme or good neighbour programs including financial compensation	**Medium (Possible, Minor)**	Detailed assessment

Project aspect/ activity	Potential impact on people	Timing/ duration	Affected stakeholder groups	Perceived stakeholder significance	Project refinements/ management measures	Residual impact significance	Phase 2 Assessment level
Payments to host landholders, establishment of Project infrastructure, public release of Project plans	Devaluation of adjacent or nearby properties	Project lifecycle including planning phase	Host and proximal landholders	**Medium (Possible, Moderate)**	Commission research to validate or provide evidence base in response to this concern and publicise results Open, transparent, and accessible communication of Project information Development of participatory local benefits scheme or good neighbour programs	**Medium (Possible, Minor)**	Detailed assessment
Establishment of Project infrastructure particularly solar panels	Changes to the landscape's visual character causing social amenity disturbance including glare and glint and physical effect to areas of community value	Construction and operational phases	Host and proximal landholders, nearby residents, tourists, and tourism operators	**High (Almost certain, Moderate)**	Establishment of vegetation screening at key viewpoints, selecting the project site away from urban or settled areas, major travel routes, public viewpoints, or lookout areas Development of neighbour benefit program Consideration of neighbour/adjacent property impacts and mechanisms to address personal issues on a case-by-case basis	**Medium (Likely, Minor)**	Standard assessment
Public release of Project plans and documents	Increase in anxiety and stress regarding scale of development and perceived inability to control one's surroundings or futures	Planning phase and construction	Local landholders and nearby residents	**Medium (Possible, Moderate)**	Open, transparent, and accessible communication of Project information Community feedback is demonstrably considered in Project planning	**Medium (Possible, Minor)**	Detailed assessment

Project aspect/ activity	Potential impact on people	Timing/ duration	Affected stakeholder groups	Perceived stakeholder significance	Project refinements/ management measures	Residual impact significance	Phase 2 Assessment level
Construction of Project infrastructure	Increased traffic causing perceived increased road safety risks for local users	Construction phase	Residents, broader community	**Medium (Likely, Minor)**	Detailed planning transport routes with public safety considerations and information disclosure, consulting with and notifying residents, considering any sensitive user groups Consider supporting upgrades to local roads or transport infrastructure	**Medium (Possible, Minor)**	Standard assessment
Construction of Project infrastructure	Increase in noise and traffic in the locality which could cause day-to-day amenity disruption for nearby residents or increase to commuter travel times	Construction phase	Nearby residents, broader community	**Medium (Likely, Moderate)**	Detailed planning transport routes, local user consideration and information disclosure, consulting with and notifying residents, considering any sensitive user groups (e.g. local school buses) Open, transparent, and accessible communication of Project information	**Medium (Possible, Minor)**	Standard assessment
Employment during construction	Changes to local population and the composition and character of the community which could cause a shift in local relations	Construction phase	Broader community	**Medium (Possible, Moderate)**	Develop local employment and procurement plan Open, transparent, and accessible communication of Project information	**Medium (Possible, Minor)**	Detailed assessment

Project aspect/ activity	Potential impact on people	Timing/ duration	Affected stakeholder groups	Perceived stakeholder significance	Project refinements/ management measures	Residual impact significance	Phase 2 Assessment level
Employment during construction	Increased pressure on local facilities and services particularly housing and accommodation (affordability and availability)	Construction phase	Broader community, service providers	**Medium (Likely, Moderate)**	Develop local participation plan and workforce accommodation strategy Coordinate efforts and liaise with key stakeholders to coordinate provision of accommodation and other services or suppliers	**Medium (Possible, Minor)**	Detailed assessment
Establishment of Project infrastructure (cumulative)	Multiple concurrent and nearby major projects could cause community division or reduced levels of social cohesion	Construction and operational phases	Broader community, political and interest groups	**Medium (Possible, Moderate)**	Multi-stakeholder liaison to ensure widespread integration and prioritisation of social acceptance across various projects Multi-stakeholder collaboration to jointly develop or contribute to local benefit scheme across planning and delivery of Central-West Orana REZ	**Medium (Possible, Minor)**	Detailed assessment

7.0 Conclusion

This report has documented the SIA process undertaken during the Scoping Phase of the Tallawang Solar Farm Project and forms part of the Scoping Report to inform the issue of SEARs by the NSW DPIE.

The Report has included the compilation of a social baseline profile for the Project, early-stage community, and stakeholder consultation to inform the scoping of Project-related social impacts and opportunities, and preliminary impact prediction and evaluation. The preliminary impact evaluation has been undertaken to inform and support the refinement of Project design and plans to reduce negative project impacts and achieve greater positive project benefits.

It is understood that a detailed assessment of social impacts is required as part of the EIS and should be informed by an ongoing process of community consultation. As part of the EIS, future stages of SIA for this Project will include a comprehensive prediction and assessment of social impacts and development of relevant strategies to mitigate negative impacts and enhance positive impacts associated with the Project. Further SIA and technical environmental impact studies will address perceptions of impacts raised by key stakeholders during this phase.

Subsequent phases of the SIA program will involve the following key activities:

- A detailed update of the baseline social profile to ensure that any further baseline data relevant to the impacts identified is obtained.
- Further validation of the area of social influence and identification of affected communities and vulnerable groups.
- Provision of feedback to those consulted during the scoping phase on the outcomes and issues raised and communication of the Project Secretary's Environmental Assessment Requirements (SEARs) (once issued), including an outline of the next steps in the assessment process and opportunities for community input.
- Further engagement with a range of community and stakeholder groups, including but not limited to near neighbours, host property owners, local government, community members, interest groups, local businesses and service providers. This consultation will focus on the detailed investigation into social impacts associated with the Project. Further, it will involve the provision of feedback on the outcomes of EIS technical studies and will provide opportunities for community input to the development of appropriate mitigation and enhancement measures to address impacts and residual effects.
- A comprehensive assessment and evaluation of social impacts against existing baseline conditions.
- The community and stakeholder engagement activities anticipated during the EIS-preparation period are outlined in the CSEP.

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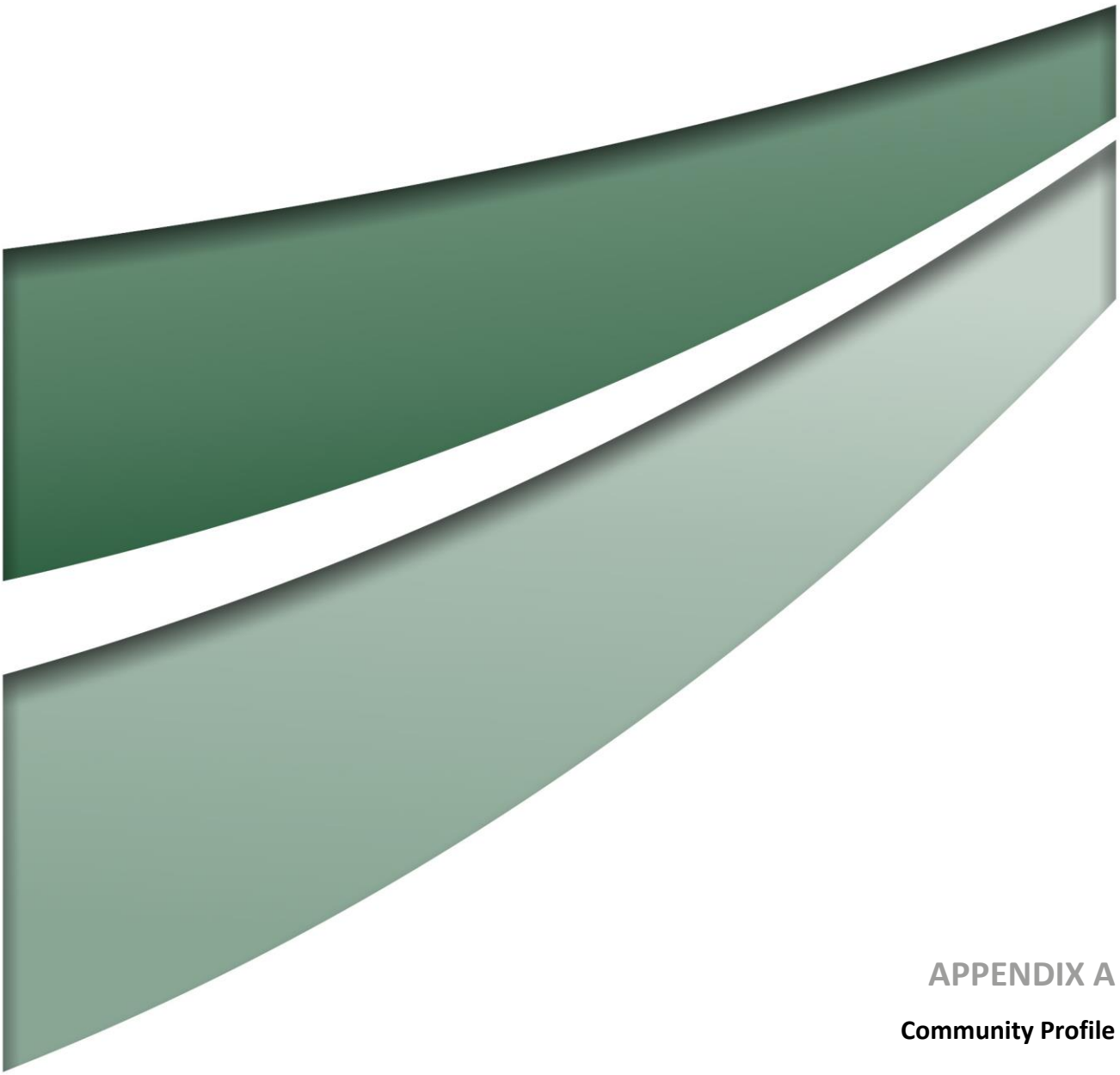


APPENDIX A

Community Profile

Community Profile

Indicators	Tallawang SSC	Beryl SSC	Mebul SSC	Dunedoo SSC	Birriwa SSC	Stubbo SSC	Gulgong SSC	Merotherie SSC	Warrumbungle LGA				Mid-Western LGA				NSW
Year	2016	2016	2016	2016	2016	2016	2016	2016	2006	2011	2016	Change	2006	2011	2016	Change	2016
Human Capital																	
Population Size	168	132	40	1,221	49	232	2,521	24	9,810	9,588	9,384	↓	21,085	22,318	24,076	↑	7,480,228
Proportion Indigenous Population (%)	0%	2%	18%	8%	6%	2%	8%	0%	8%	9%	10%	↑	3%	4%	5%	↑	3%
Median Age	45	44	63	49	54	46	41	47	43	45	49	↑	41	41	42	↑	38
Year 10 highest year of schooling (%)	45%	41%	44%	34%	49%	47%	38%	50%	37%	37%	37%	—	39%	38%	36%	↓	23%
Year 12 highest year of schooling (%)	37%	38%	28%	36%	23%	34%	33%	50%	29%	32%	35%	↑	30%	35%	39%	↑	59%
Bachelor degree (%)	7%	12%	15%	6%	0%	9%	5%	0%	6%	6%	7%	↑	6%	8%	8%	↑	16%
Certificate (%)	16%	29%	21%	17%	18%	30%	25%	14%	17%	19%	20%	↑	21%	23%	25%	↑	18%
Social Capital																	
Proportion of population with a different address 1 year ago (%)	6%	5%	9%	8%	6%	8%	13%	0%	14%	12%	10%	↓	14%	16%	14%	—	14%

Indicators	Tallawang SSC	Beryl SSC	Mebul SSC	Dunedoo SSC	Birriwa SSC	Stubbo SSC	Gulgong SSC	Merotherie SSC	Warrumbungle LGA				Mid-Western LGA				NSW
Proportion of population with a different address 5 year ago (%)	23%	29%	27%	25%	18%	29%	34%	0%	36%	29%	28%	⌄	40%	37%	37%	⌄	39%
Proportion of population aged 15+ who volunteer (%)	13%	23%	27%	29%	33%	16%	21%	14%	30%	29%	28%	⌄	24%	21%	22%	⌄	18%
Proportion of population born overseas (%)	4%	6%	0%	6%	0%	9%	7%	0%	-	6%	7%	⌃	-	9%	8%	⌄	30%
Proportion of single parent families (%)	0%	0%	0%	10%	0%	8%	12%	0%	15%	10%	10%	⌄	15%	9%	9%	⌄	8%
Proportion of family households (%)	70%	80%	79%	68%	69%	70%	66%	100%	69%	68%	67%	⌄	71%	70%	69%	⌄	72%
Proportion of group households (%)	0%	0%	0%	2%	0%	0%	2%	0%	-	2%	2%	—	-	3%	3%	—	4%
Proportion of lone person households (%)	25%	8%	29%	31%	25%	29%	31%	0%	-	30%	31%	⌃	-	27%	29%	⌃	24%
Top 3 Crime Rankings	-	-	-	-	-	-	-	-	-	-	Sexual offences (1/119), Drug offences – cannabis (17/119), Malicious damage to property (29/119)	-	-	-	Drug offences (26/119) – Cannabis, Assault - Non-Domestic violence (32/119), Steal from a Dwelling (33/119)	-	-

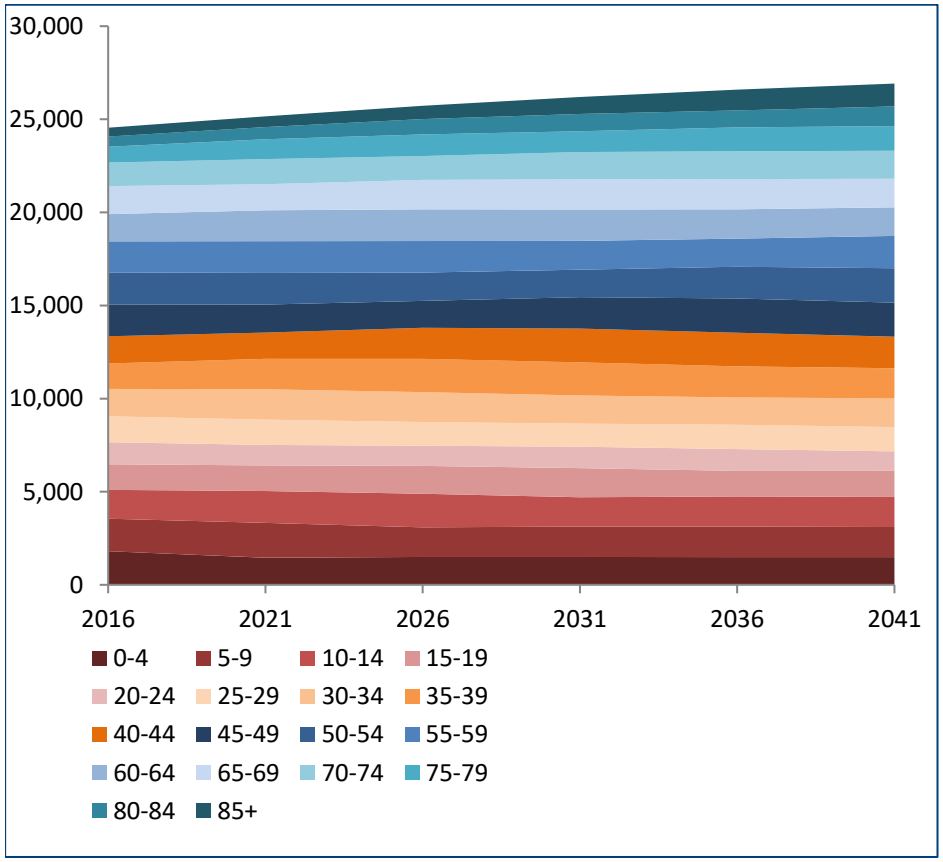
Indicators	Tallawang SSC	Beryl SSC	Mebul SSC	Dunedoo SSC	Birriwa SSC	Stubbo SSC	Gulgong SSC	Merotherie SSC	Warrumbungle LGA				Mid-Western LGA				NSW
Economic Capital																	
Proportion of the labour force employed full-time (%)	57.1%	62.2%	56.5%	55.4%	38.1%	63.2%	53.6%	60.0%	57.6%	57.5%	55.7%	⌄	57.1%	58.0%	56.4%	⌄	59.2%
Proportion of the labour force employed part-time (%)	36.5%	26.7%	39.1%	28.8%	38.1%	26.3%	32.4%	0.0%	27.5%	29.1%	30.6%	⌃	29.8%	30.4%	31.6%	⌃	29.7%
Proportion of the labour force who are unemployed (%)	0.0%	15.6%	0.0%	8.6%	14.3%	3.2%	8.6%	0.0%	8.3%	7.1%	7.9%	⌄	7.3%	5.7%	6.5%	⌄	6.3%
Median household income ($/week)	1,145	1,312	769	871	1,062	1,109	1,086	2,125	609	689	878	⌃	700	929	1,131	⌃	1,486
Median mortgage repayment ($/month)	2037	1200	0	967	0	1690	1517	0	693	870	923	⌃	1083	1551	1690	⌃	1986
Median rent for a 3-bed house ($/week)	250	270	200	175	0	180	250	0	100	120	160	⌃	145	200	270	⌃	380
Median rent as a proportion of median household income (weekly)	22%	21%	26%	20%	-	16%	23%	-	16%	17%	18%	⌃	21%	22%	24%	⌃	26%

Indicators	Tallawang SSC	Beryl SSC	Mebul SSC	Dunedoo SSC	Birriwa SSC	Stubbo SSC	Gulgong SSC	Merotherie SSC	Warrumbungle LGA				Mid-Western LGA				NSW
Physical Capital																	
Proportion of occupied private dwellings that are fully owned (%)	37.7%	37.5%	50.0%	49.2%	56.3%	44.6%	37.3%	37.5%	48.8%	47.7%	46.4%	⌄	42.8%	40.5%	38.0%	⌄	32.2%
Proportion of occupied private dwellings that are being purchased/ owned by a mortgage (%)	35.8%	22.5%	35.7%	21.2%	0.0%	39.8%	30.5%	0.0%	21.9%	22.6%	23.0%	⌃	27.9%	29.3%	30.6%	⌃	32.3%
Proportion of occupied private dwellings that are being rented (%)	18.9%	25.0%	35.7%	28.7%	18.8%	13.3%	28.2%	0.0%	24.4%	24.9%	25.8%	⌃	25.5%	26.5%	27.4%	⌃	31.8%
Proportion of dwellings with internet access (%)	80%	85%	80%	66%	58%	81%	75%	100%	47%	65%	69%	⌃	51%	72%	77%	⌃	85%
Proportion of households in mortgage stress (%)	-	-	-	-	-	-	-	-	11.4	14.2	9.5	⌄	12.9	11.1	9.4	⌄	9.6
Proportion of households in rental stress (%)	-	-	-	-	-	-	-	-	20.2	19.2	24.2	⌃	29.3	27.4	32.3	⌃	27.9

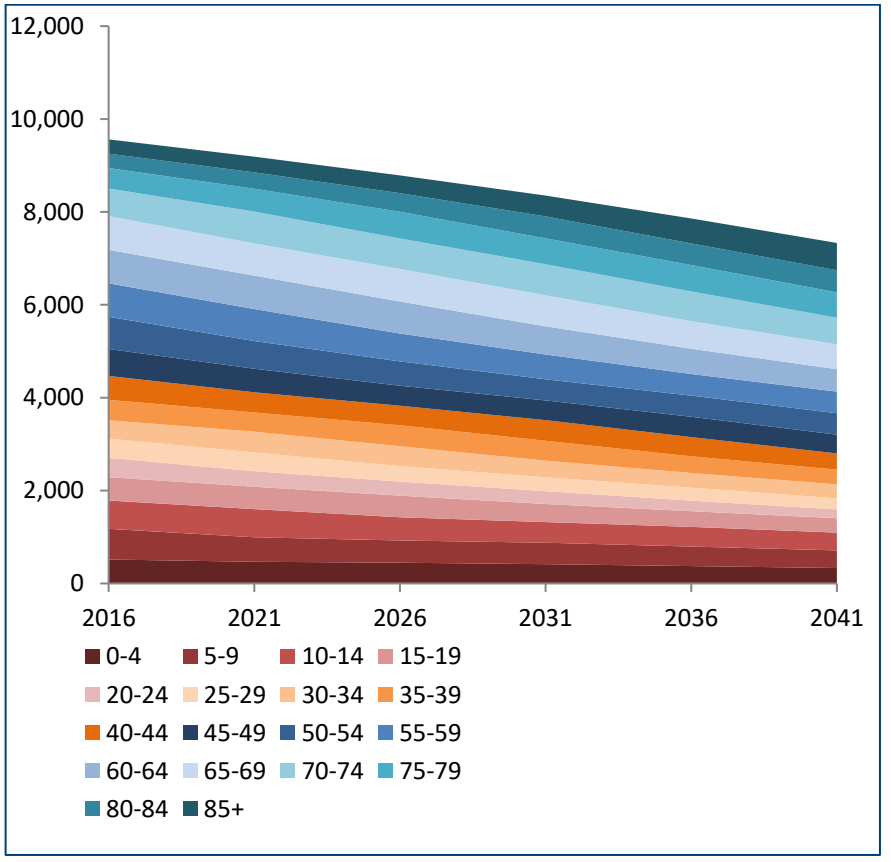
Health status

Category	Health Indicator	Source	Measure	Mid-Western Region LGA	Warrumbungle Shire	NSW
Chronic diseases	Estimated number of people with mental and behavioural problems (modelled estimates)	PHIDU 2017–18	ASR per 100	23.9	21.8	18.8
	Estimated number of people with heart, stroke and vascular disease	PHIDU 2017–18	ASR per 100	5.3	4.9	4.9
	Estimated number of people aged 15 years and over with fair or poor self-assessed health	PHIDU 2017–18	ASR per 100	16.8	15.5	14.1
Risk factors	Estimated number of males aged 18 years and over with high or very high psychological distress, based on the Kessler 10 Scale (K10)	PHIDU 2017–18	ASR per 100	12.6	12.4	12.4
	Estimated number of people aged 18 years and over who had high blood pressure	PHIDU 2017–18	ASR per 100	23.4	22.2	23.1
	Estimated number of people aged 18 years and over who were obese	PHIDU 2017–18	ASR per 100	41.0	43.1	30.9
	Estimated number of people aged 18 years and over who were current smokers	PHIDU 2017–18	ASR per 100	21.0	22.0	14.4
Premature death	Total deaths, 0 to 74 years	PHIDU 2017–18	ASR per 100	282.0	320.6	238.4

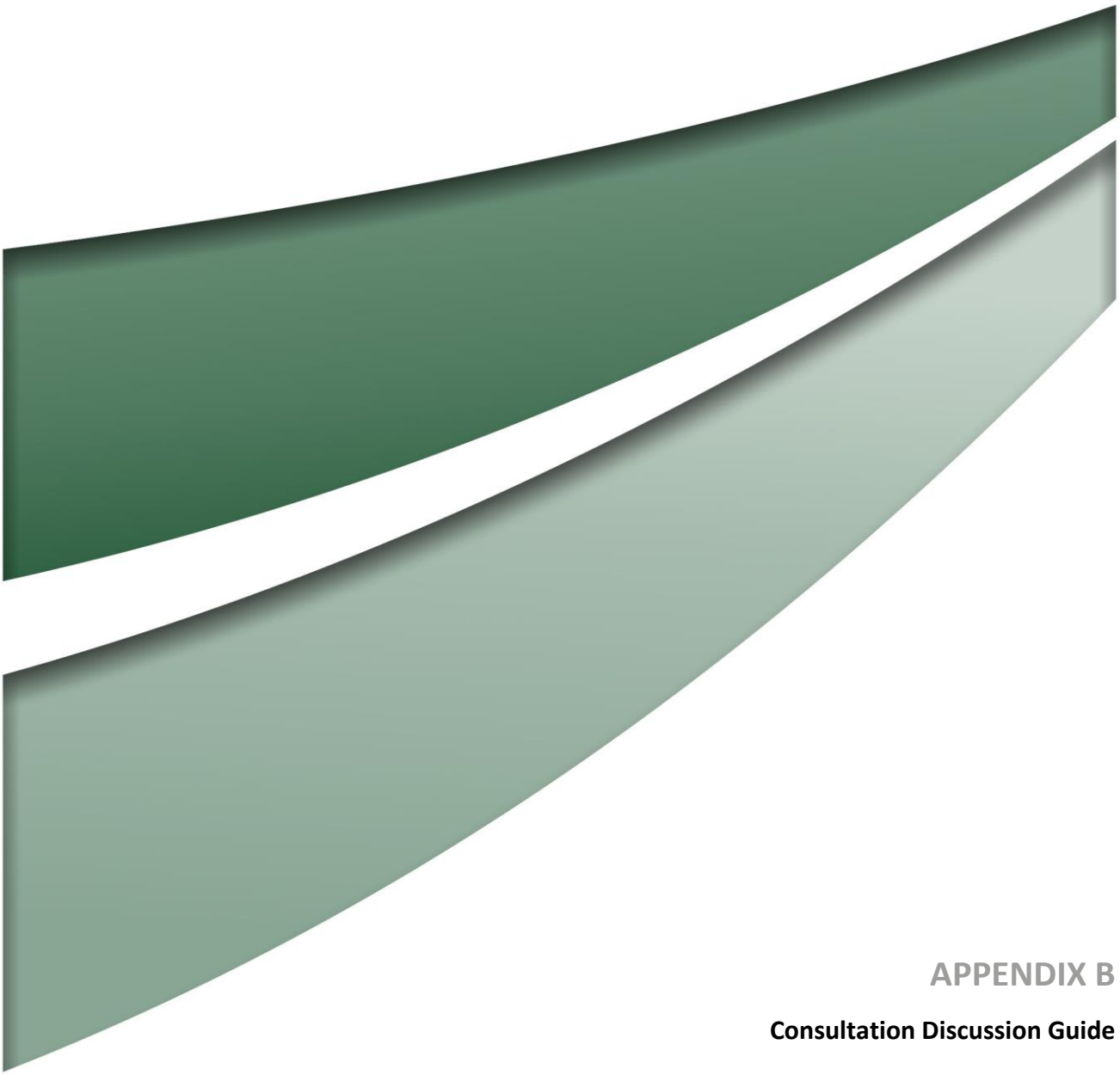
Population Projections



Mid-Western Regional LGA



Warrumbungle LGA



APPENDIX B

Consultation Discussion Guide

Meeting agenda

1. Introductions
2. Projects briefing
3. General Q&A and core questions
4. Targeted questions

Interview/meeting details:

Time/Date	
Location	
Interviewer(s)	

Respondent/interviewee contact details:

Full name and position of attendee(s)	
Organisation/group name	
Contact number	
Postal address	
Email address	

Introduction:

I am _____ from RES and this is _____ from Umwelt.

RES is an independent and family run renewable energy development company who are looking at two proposed projects in your local area - the Tallawang Solar Farm and Barneys Reef Wind Farm.

Both sites are within the Mid-Western Regional Council area on land to the north of Gulgong.

Umwelt is working closely with RES this year to undertake the social and environmental assessments for both projects.

As part of our activities at the moment during this early scoping phase, we have been meeting with people living nearby the proposed sites as well as groups/people/agencies like yourselves to introduce ourselves and for you to get to know the projects.

We see these meetings as important for us to also understand your perspectives and views on the projects, and to help us better understand the local community that you are a part of and/or represent. This helps us with our project planning and is a way for you to participate in the project planning too.

Based on this, we have put together some discussion items, however we understand that in this early stage of the projects we'd like to focus on introducing the project and then gathering any initial feedback or insights that you may have.

We are also able to outline the planning process that we are looking to go through for these projects and to better understand how you might like to be involved or be consulted in the future.

Thank you for taking the time to meet with us.

All information you provide to us is confidential and only reported in aggregate form.

The **Project Information Sheet** provides background and introductory information on the projects. Otherwise you can visit our recently launched website:

Tallawang Solar Farm and Barneys Reef Wind Farm (barneysreef-renewableenergy.com)

Core interview questions

Knowledge and awareness

1. What knowledge do you have of RES as a company prior to now?
2. What is your level of understanding of renewable energy projects and renewable energy generally?
3. Do you know that the Central West has been nominated as a REZ, along with other zones across the state e.g., Hunter, Illawarra, New England? What are your thoughts about this zone?
4. Have you had any previous contact with other renewable energy companies or heard about other projects in the area? Detail.

Sense of community

1. How would you describe your community (in general/to help us get to know your community)? What do you like most about living in the area? What is important to you and why?
2. What do you see as the key strengths/assets of the community? (social, economic or environmental)
3. What do you see as the key needs of your community (or matters that your community wants to see/aspirations)? What would make your community a better community or place? (see prompts below)
    - Historical aspects
    - Greening and beautification
    - Local business/employment growth or opportunities
    - Services and infrastructure – housing, education, retail, health care, transport etc.
    - Cultural and recreation – community volunteering, sport and leisure, tourist attractions, cultural events etc.
    - Other ways to improve social cohesion.

Perceived impacts and benefits

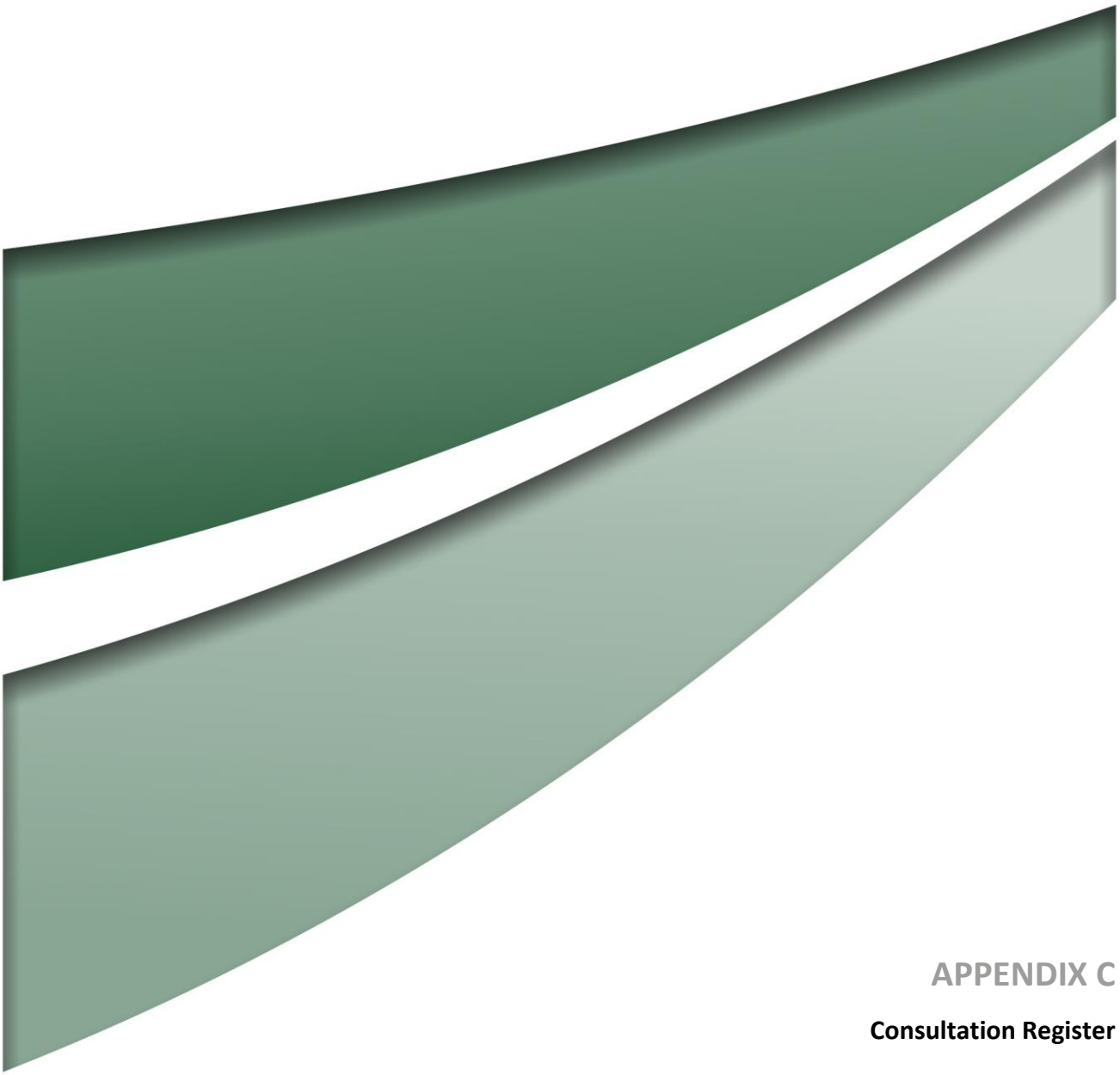
1. What do you think the development of these two projects within the REZ would mean for the region?
2. What do you see as the main impacts or issues to people as a result of each project and who do you think would experience the impact? Detail.
3. Do you feel that the proposed projects have the potential to contribute positively to the locality/region/state? Detail.
4. What do you think RES can consider to enhance project benefits, in collaboration with local community groups or with yourselves?

Use table where appropriate.

Impact type	Description	Tallawang Solar Farm (Y/N)	Barneys Reef Wind Farm (Y/N)
Social amenity and surroundings	Visual changes to the rural character of the landscape, increase in industrial infrastructure		
Way of life	Changes to land use		
Surroundings	Effects to local flora and fauna or natural environment or reduced access to recreational areas		
Social amenity and surroundings	Increase in noise in the local area from construction, operation of turbines, or otherwise project-related activities		
Social amenity and surroundings	Construction impacts – air quality and dust		
Social amenity and surroundings	Traffic congestion, public/tourist/road user safety, nuisance/delay caused by construction activities		
Way of life	Land or site access on private agricultural properties		
Accessibility	Construction workforce accommodation and housing		
Accessibility	Local services, infrastructure and facilities utilisation in town (construction workforce)		
Health and wellbeing	Health (physical/ emotional/mental) effects of the project including perceived levels of public safety		
Community	Intergenerational equity and the effect on climate change		
Community	Local benefit sharing opportunities and community fund ideas		
Livelihoods	Employment and local procurement		
Livelihoods	Compensation for land acquisition or leasing		
Culture	Changes to the cultural values of the community and local area		
Community	Sense of community, sense of place and levels of cohesion in the local area		
Decision-making systems	Engagement or consultation processes and decision-making abilities of community members		
Cumulative	Matters relating to other REZ projects, or other recent development projects nearby		
Other	Specify		

Engagement preferences

1. Are there particular aspects of the projects/process that you would like further information about?
2. How would you like to be consulted in the future?
3. Is there anyone else that you think we should be talking to?



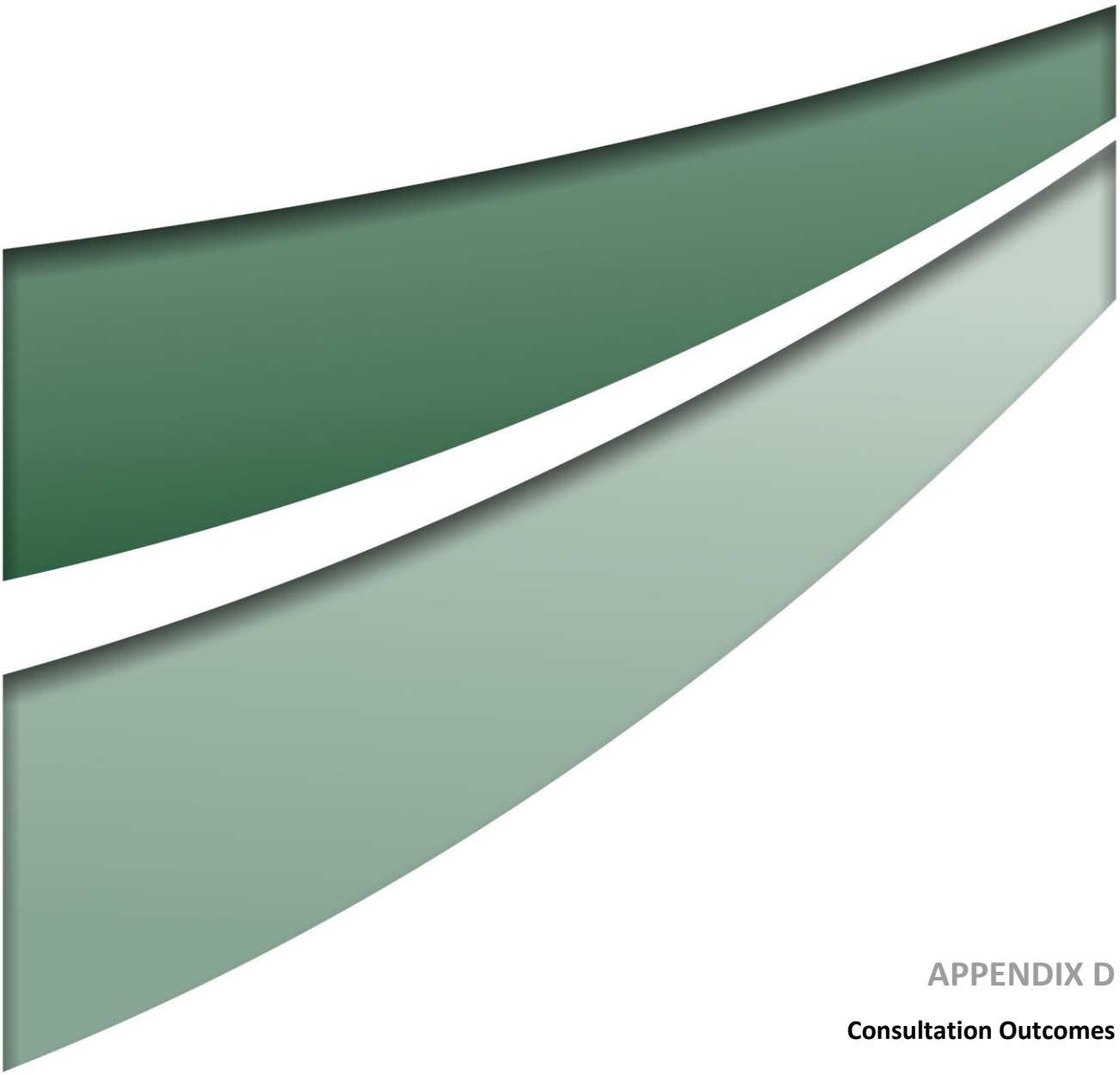
APPENDIX C

Consultation Register

Consultation Register

Stakeholder Group	Organisation/Individual	Mechanism	Purpose of Engagement	Date	Location
Adjacent landholder	Individual	Phone call	Introduction	30-Mar-21	Phone
Proximal Resident	Individual	Phone call	Introduction	30-Mar-21	Phone
Adjacent landholder/Host landholder	Individual	F2F meeting	Land acquisition negotiation	26-Mar-21	Phone
Adjacent landholder	Individual	F2F meeting	Introduction	30-Mar-21	-
Adjacent landholder	Individual		Introduction	30-Mar-21	-
Adjacent landholder/Host landholder	Individual	Phone call	Land acquisition negotiation	26-Mar-21	Phone
Proximal Resident	Individual	F2F meeting	Introduction	29-Mar-21	-
Proximal Resident	Individual	F2F meeting	Introduction	31-Mar-21	House
Proximal Resident	Individual	F2F meeting	Introduction	30-Mar-21	-
Adjacent landholder	Individual	Phone call	Introduction	07-Apr-21	Phone
Adjacent landholder	Individual	Phone call	Introduction	07-Apr-21	Phone
Adjacent landholder	Individual	Phone (incoming call)	Introduction	31-Mar-21	Phone
Local Government	Mid-Western Regional Council	F2F meeting	Project briefing	29-Mar-21	-
Aboriginal Stakeholder	Mudgee Local Aboriginal Land Council	F2F meeting	Project briefing	07-Apr-21	Mudgee
Community & Special Interest Group	Mudgee District Environment Group (MDEG)	F2F meeting	Project briefing	07-Apr-21	Mudgee
Local Government	Warrumbungle Shire Council	F2F meeting	Project briefing	29-Mar-21	Coonabarabran
Local Government	Mid-Western Regional Council	F2F meeting	Project briefing	29-Mar-21	-
Adjacent landholder	Individual	F2F meeting	Project briefing	29-Mar-21	-
Community & Special Interest Group	NSW Farmers Association - Mudgee Branch	F2F meeting	Project briefing	07-Apr-21	Mudgee
Community & Special Interest Group	Mudgee Chamber of Commerce	F2F meeting	Project briefing	07-Apr-21	Mudgee
Host Landholder	Individual	Questionnaire		15-Apr-21	Email
Community & Special Interest Group	NSW Farmers Association	Online meeting	Project briefing	16-Apr-21	-
Community & Special Interest Group	Dunedoo & District Development Group	Email	Introduction	12-Apr-2021	-
Community & Special Interest Group	SOS Central West NSW	Email	Introduction	15-Apr-21	-
Community & Special Interest Group	Gulgong Chamber of Commerce	Email	Introduction	20-Apr-21	-
Local Media	Mudgee Guardian	Email	Introduction	12-May-21	-
Local Media	Mid-Western Mail	Email	Introduction	12-May-21	-

Stakeholder Group	Organisation/Individual	Mechanism	Purpose of Engagement	Date	Location
Local Media	Dunedoo Diary - Outback Express	Email	Introduction	12-May-21	-
Federal Government	National Party - Federal Member for Calare	Email	Request for meeting	12-May-21	-
State Government	National Party - State Member for Dubbo	Meeting	Project briefing	26-May-21	Dubbo
Local Media	Gulgong Gossip	Email	Introduction	12-May-21	-
Local Government	Mid-Western Regional Council - Planning Directorate	Letter	Initial engagement	04-May-21	Email
State Government	TfNSW	Letter		04-May-21	Email
State Government	DPIE	Project briefing	Pre-lodgement meeting	06-May-21	Video conference
State Government	Local Land Services Central West	Letter	Aboriginal consultation notice	29-Mar-21	Email
Local Government	Mid-Western Regional Council	Letter	Aboriginal consultation notice	29-Mar-21	Email
Aboriginal Stakeholder	Mudgee Local Aboriginal Land Council	Letter	Aboriginal consultation notice	29-Mar-21	Email
Aboriginal Stakeholder	National Native Title Tribunal	Letter	Aboriginal consultation notice	29-Mar-21	Email
Aboriginal Stakeholder	Native Title Services (NTS) Corp	Letter	Aboriginal consultation notice	29-Mar-21	Email
State Government	Heritage Office	Letter	Aboriginal consultation notice	29-Mar-21	Email
State Government	Crown Lands	Letter	Initial engagement	TBC	Email
State Government	Office of the Registrar Aboriginal Land Rights Act (ORALRA)	Letter	Aboriginal consultation notice	29-Mar-21	Email
Special Interest Group	Bowdens Silver	Email	Request for meeting	13-May-21	Email
Proximal Resident	Individual	Phone call	Introduction	17-May-21	Phone
Proximal Resident	Individual	Phone call	Introduction	24-May-21	Phone



APPENDIX D

Consultation Outcomes

Table D1 outlines the consolidated consultation outcomes gathered from community and stakeholders undertaken during the Project's scoping phase. Stakeholders include local government, nearby landholders, host landholders, community groups, traditional owner representative organisations, as well as local businesses and service providers. Outcomes from these consultation activities have also informed the social baseline and the preliminary impact evaluation as relevant.

Table D1 Community Consultation Outcomes by Stakeholder Group

Stakeholder	Summarised outcomes
Local Government	Asked about: • The potential for the Tallawang Solar Farm and Barneys Reef Wind Farm to be co-located • The approach to decommissioning, including solar panel recycling. Raised concerns over: • the loss of prime agricultural land to solar farms • the potential use of labour from outside the area, a fear that is based on experiences with renewable energy projects in the region Supportive of: • the consideration of community feedback to previous proposals to guide selection of the Project location • renewable energy projects when sited with sensitivity for community needs and preferences and the need for projects such as Tallawang Solar Farm to be located *"in the right place"*. Described their requirement for projects to be set back at a minimum distance from highways and noted setbacks from certain landscape features as an ongoing topic of discussion. Expressed a desire to have the Project support sustainable employment in the region. Noted the pressure from multiple proposed major developments in the LGA. A neighbouring Council expressed interest in the Project as it would be visible for some residents within their LGA and that the road networks within their LGA would likely be used to transport material from port to site as well as likely use by construction workers commuting daily. Raised their interest in developing a formal Voluntary Planning Agreement (VPA) with RES.
Host landholders	• Host landholder views were broadly consistent with neighbouring landholders and nearby residents. • Host landholders highlighted landscape changes and impacts to farming activities as a key impact. • When prompted with a list of potential impacts, host landholders also noted potential impacts to visual amenity, the natural environment and land access, and a potential increase in noise from Project activities. • When prompted host landholders were the only consulted stakeholder to identify 'changes to the cultural values of the community and local area' as a potential Project impact. • Host landholders focused on opportunities for positive Project impacts through increased local employment and procurement, financial benefits to landholders such as themselves providing a diversified income stream. It was stated that monetary gains to host landholders help with *"drought proofing properties".* • Host landholders also noted local investment and benefit sharing as potential positive impacts.

Stakeholder	Summarised outcomes

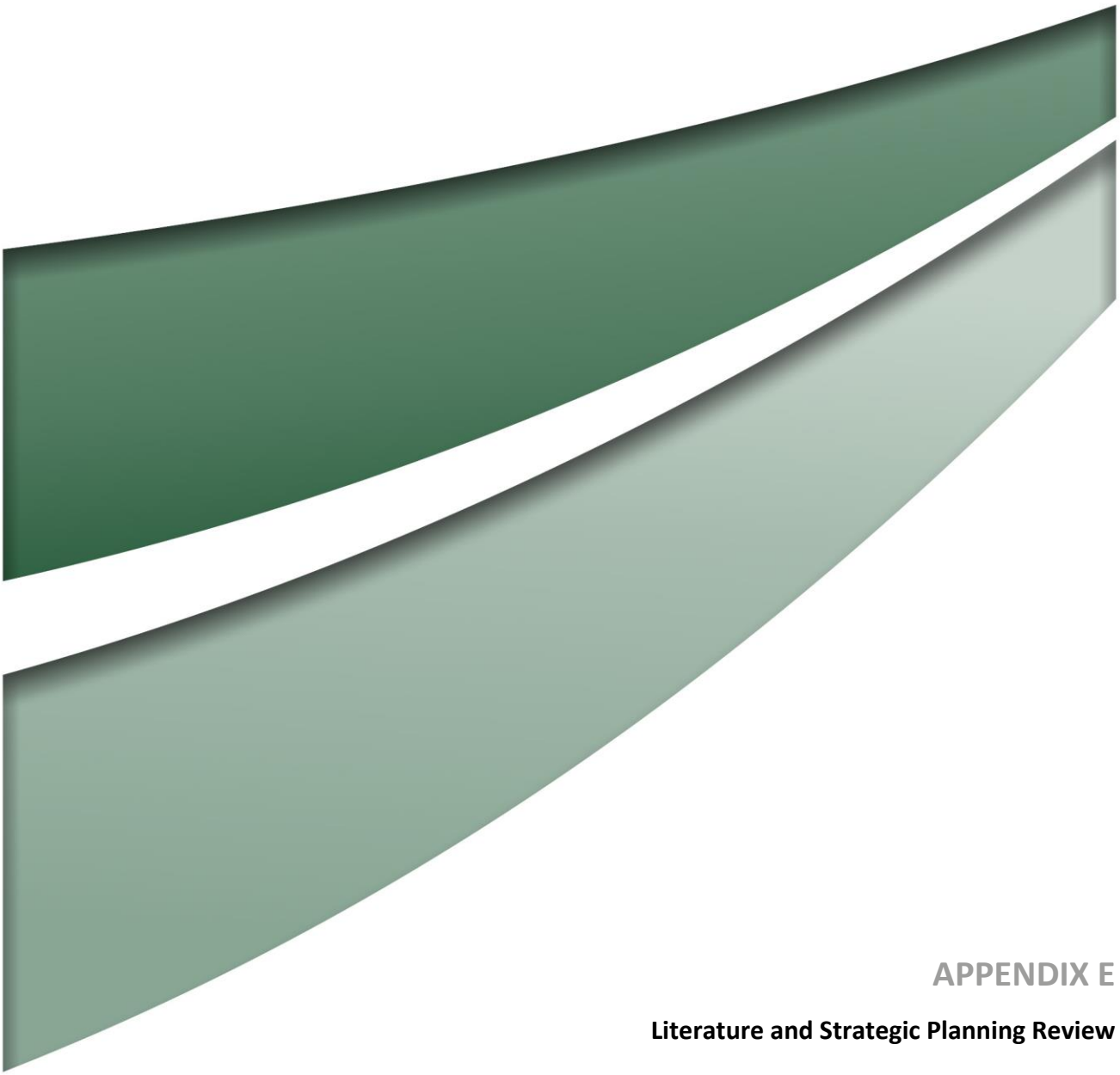
Neighbouring landholders and nearby residents	• Interviewed landholders typically both owned and farmed the land.
	• The most frequently noted concern was impacts to the visual amenity and industrial changes to the rural landscape.
	• The perceived likely devaluation of property and impacts to agricultural activity from Project infrastructure were also identified as key concerns.
	  ○ Other concerns related to noise impacts from construction, traffic, access to their properties, and impacts to natural features including marshes, trees and native vegetation.
	  ○ The cumulative impacts of multiple projects including transmission and mining, all with similar effects to land use, amenity and livelihoods was a concern for some.
	• Many expressed a desire for financial compensation for neighbouring landholders, with some stated an interest in hosting Project infrastructure in order to receive payments.
	  ○ The view of a number of landholders was that the project would provide benefits to the host landholders through compensation but may negatively impact other neighbouring landholders.
	• Some mentioned that potential road upgrades would benefit them and the wider community.
	• Some landholders expressed a desire to protect watercourses on their properties, water was highlighted as a highly valued landscape feature and limited resource, particularly in the Project area where there is limited access to groundwater.
	• The majority respondents had not heard of RES before; however, one respondent had had previous contact and one respondent noted receiving a pamphlet
	• Several respondents felt positively about the proactive and early engagement and consultation on the Project. There were no respondents expressing a negative opinion over the project consultation to date, although some respondents described negative experiences relating to how they had been consulted (or not) by other renewable energy proponents active in the locality.

Community groups	• Several stakeholders have raised their appreciation of RES seeking input by a range of members of the community to guide Project planning. Some contrasted this with negative experiences they had had with other renewable energy companies. • A primary concern raised is the ability for local farmers to sustain their livelihoods. It was stated by one community group that “the community is strong… and the land is our livelihood”; and that any effect of the Project on the ability to farm the land would be detrimental. • Noted the risks of property devaluation leading to diminished ability for farming families to secure finance, and therefore hindering the ability to purchase necessary equipment and supplies. • Reiterated the concern that solar farms in the region can fragment and reduce availability of already limited agricultural land. • Noted a distaste at the perceived inequality of solar energy generation benefitting urban energy consumers but impacting rural communities. • Nearby communities have recently had adverse experiences with other solar farm projects which has led to the erosion of interpersonal relationships and community cohesion and are likely to affect the community’s perceptions of future proposed development projects. • TransGrid and Inland Rail projects in the region were noted as contentious due to their dissection of private agricultural properties and perceived poor consultation processes with local communities. • Two nearby proposed mining projects were also seen to be polarising and divisive in the community, whereby land acquisition processes and perceived unclear communication

Stakeholder	Summarised outcomes
	bred mistrust, confusion, and speculation, as well as impacting the community structure and level of cohesion as residents left the area following property purchasing. • Highlighted the risk of disruption to travel patterns and road use for local users arising from poor planning, and the associated opportunity to benefit the wider community through road upgrades. • Considerations to be given regarding the cumulative long-term impacts of renewable energy development on the region. • Support for renewable energy generation in a broad sense, however, wanting developers to support small-scale, domestic participation in low-carbon transition as well as large-scale projects. • Want to investigate opportunities for co-existence of agriculture and renewable energy to benefit farming livelihoods and families, suggested that the Project could support the development of a lamb nursery within the solar farm fencing, or water provision to surrounding properties. • Need for engagement that is open, transparent, and responsive, and which focuses on listening to the concerns and experiences of individual and local stakeholders, noting that developers "need to be doing a lot of listening". • Expressed appreciation for open and early consultation on this Project conducted to date. • Underscored the importance of understanding the needs of individual community members, particularly landholders, addressing their needs and concerns in a personalised and tailored way, and openly communicating the reasons for site selection and design. Another community group provided commentary and feedback on solar projects in the region more broadly: • the potential for solar farms to act as a fire hazard • solar panels industrialising the rural landscape • the loss of visual amenity was perceived as part of a broader set of adverse impacts experienced by landholders that included potential reduction in property values and tension with host landowners that benefit from the project • employment opportunities during operation and maintenance were perceived as low and the international manufacturing of infrastructure components was seen as not benefitting the local community • uncertainty around the decommissioning process and the return to agricultural land • solar energy was considered inappropriate to meet the daily pattern of energy demand without supporting storage technology • the potential for large-scale solar energy generation to reduce uptake of rooftop, domestic solar • the potential for large-scale solar electricity to be uneconomic. Environmental groups were generally supportive of the Project and eager to collaborate with RES through: • Knowledge sharing around the local environment and areas of conversation importance such as the Travelling Stock Reserves that may be situated on or nearby the Project. • Concern generally that local environmental groups do not know the extent of or condition of native vegetation in the Project area due to it largely being on privately held land that they are unable to access or survey. • Support that could be offered for a community managed reserve or funding of environmental protection initiatives in the area.

Stakeholder	Summarised outcomes
	• Identified opportunities for RES to commission research into the beneficial co-location of solar energy generation and agriculture through this Project. • Concerned about effects to areas of high and threatened biodiversity, specifically Travelling Stock Routes and Grassy Box Woodlands, and that the group would be interested in collaborating with the ecological or biodiversity surveys for the Project to share knowledge and learnings. • Highlighted the significant community dissatisfaction with a recently announced TransGrid project and the potential for similar issues to apply to this Project. • Wanted the proponent to be sensitive to context of fragmentation native vegetation and the already significant environmental impacts from mining in the area. • Welcomed further consultation as the Project progresses.
Local businesses and service providers	• Highlighted that a key issue for the Project and community could be additional demand for workforce accommodation. • Outlined a community desire to promote integration of workforces with the local community by limiting accommodation camps. • Local accommodation service providers are typically at capacity and are already experiencing demand from tourists and mining sector workers. • Although competition for accommodation was raised as a concern, the Mudgee community is accustomed hosting workforces employed on major projects and local services providers have structured their businesses to meet this need over years already. • Local business representatives acknowledged that the local labour force would not be able to provide all the required skills and expertise needed for this Project, yet the consequent use of non-local workers could lead to some level of community opposition to the Project: *"some local people have been frustrated and even opposed some other solar or wind projects in the area recently for bringing in labour".* • Expressed a desire to provide labour and services to the Project. • Would like to see the Project provide opportunities for local young people for training, sector experience, and upskilling, particularly during construction. • The Project provides a positive opportunity to develop the local labour force and prepare workers for future demand from the renewable energy sector, as well as diversifying and developing the commercial opportunities of existing businesses.

Aboriginal organisation	• Shared their general interest and concern for:
	  ○ land rights, land uses and land management
	  ○ preservation of cultural sites and traditional practices
	  ○ cultural connection to Country
	  ○ community programs and representation of Aboriginal people in the local area.
	• Highlighted the need to be involved in any local road upgrades in order to carry out Aboriginal cultural heritage monitoring and land surveys.
	• Expectation on developers to support community programs, and that other projects nearby have not provided any benefit to Aboriginal communities, or their organisation, at all.
	• Identified opportunities for the Project to support them or work together, through initiates such as:
	  ○ resourcing and seed purchasing for the community managed nature reserve
	  ○ Indigenous food initiatives, specifically around the promotion of native bees, Indigenous grasslands (e.g., a Kangaroo Grass crop underneath the solar panels)
	  ○ or collaborate with locally based Aboriginal social enterprises.



APPENDIX E

Literature and Strategic Planning Review

Governance

Traditional Owners

The Project area is located within the traditional lands of the Wiradjuri nation. Wiradjuri means 'the people of the three rivers', and nation's traditional and modern-day connections to Country extend over a large area of NSW encompassing the Macquarie, Lachlan and Murrumbidgee Rivers, bounded by the Murray River in the south. The traditional lands of the Wailwan and Kamilaroi nations are situated to the north and north west of the project area. Material found at archaeological sites shows evidence of this occupation dating back some 18,000 years (Landskape, 2020).

The Wiradjuri were hunter-fisher-gatherers, living semi-permanently and living off a variety of native food sources, including fish, animals, insects and plant foods (Landskape, 2020). Initially peaceful early interactions between Europeans and Wiradjuri people led to violent conflict when crop sharing was misinterpreted as theft by a settler. Following this outbreak of violence, Aboriginal people were shot, poisoned and displaced by pastoral settlements. In turn, livestock, stockmen and shepherds were speared in retaliation (Landskape, 2020). Further incursion of settlements led to intense conflict, termed the Bathurst Wars (Landskape, 2020).

Over the years, the Wiradjuri people were increasingly displaced from their traditional lands and cultural practices. This and the introduction of European diseases caused significant reduction in the Wiradjuri population and led to many Wiradjuri settling close to pastoral homesteads and working as shepherds and labourers.

In NSW, there are two key mechanisms by which Aboriginal people can have their rights in land formally recognised – Native Title and Land Rights. The two systems operate under different laws and differ in the rights they can provide. Through these processes, Indigenous communities are re-establishing their connection with important Wiradjuri places.

Native title rights and interests are those rights in relation to land or waters that are held by Aboriginal or Torres Strait Islander peoples under their traditional laws and customs and recognised by the common law. The Project site is within the boundaries of a Native Title claim submitted in August 2018 by the Warrabinga-Wiradjuri (NC2018/002 - Warrabinga-Wiradjuri #7). This claim is over an area of 13,682 km^2 that covers 10 LGAs, including Dubbo Regional Council, Mid-Western Regional Council, and the Warrumbungle Shire Council.

Land rights for Aboriginal and Torres Strait Islander peoples refers to the process to gain legal and moral recognition of ownership of lands and waters they called home, prior to colonisation of Australia in 1788. The NSW Aboriginal Land Council (NSWALC) is the State's peak representative body in Aboriginal Affairs and is constituted by Part 7 of the *Aboriginal Land Rights Act 1983* No 42.

The study communities for the Project are located in the modern-day NSWALC boundaries of the Central Region, specifically in the Gilgandra and Mudgee Local Aboriginal Land Councils. Every four years, voting members of Local Aboriginal Land Councils (LALC) vote for a Councillor (Cr) to represent their region. The current Councillor of the Central Regional is Grace Toomey, a Wiradjuri woman from Dubbo, having previously been a board member of the Dubbo LALC for 10 years. Grace Toomey is also the Secretary of the Dubbo Aboriginal Community Working Party of the Three Rivers Regional Assembly.

Federal Government

The Mid-Western LGA is represented by National Party MP Andrew Gee who holds the federal seat of Calare. Andrew Gee is the Minister for Decentralisation and Regional Education and the Minister Assisting the Minister for Trade and Investment. The division of Calare stretches from Mudgee, Gulgong, Dubbo and Wellington in the north-west, to Orange, Bathurst, Lithgow and Oberon in the south-east.

State Government

The Project site is within the State electoral district of Dubbo, but closely borders the districts of Barwon and Upper Hunter. The seats of Dubbo and Barwon are held by respectively by National Party MP Dugald Saunders, Shooters Fishers and Farmers MP Roy Butler. The Upper Hunter seat is currently vacant following the resignation of the Nationals MP Michael Johnsen on 31 March 2021. A byelection will be held for the Upper Hunter district on 22 May 2021.

Local Government

The Mid-Western Regional Council is composed of nine Councillors, including the Mayor and Deputy Mayor, elected proportionally as a single ward for a fixed four-year term of office.

Strategic Planning Review

Towards 2030, Mid-Western Region Community Plan

The Council's 'Towards 2030 Community Plan' outlines the strategic direction for the LGA. This plan was developed in collaboration with the local community and identifies five areas of focus which are outlined in the document, including:

- Looking after our Community – activities and initiatives that produce vibrant, healthy and proud towns
- Protecting our Natural Environment – conserving and promoting the natural beauty of the region
- Building a Strong Local Economy – a focus on industry diversification, employment and economic growth
- Connecting our Region – linking towns and villages and connection to the rest of NSW; and
- Good Government – ensuring Council is representative of the community and effectively meeting community needs.

Community consultation with over 2,500 residents to inform the 'Towards 2030 Community Plan' indicated that the community would allocate resources to the five focus areas as follows:

- Looking After our Community – 27%
- Connecting our Region – 24%
- Protecting our Natural Environment – 19%
- Building a Strong Local Economy – 19%
- Good Government – 11%

Community engagement also identified the infrastructure assets that the community would like upgraded or built; top responses included Mudgee Hospital, recreational facilities such as an indoor aquatic centre/outdoor water park or entertainment centre and return passenger trains. Approximately 18% of respondents identified road upgrades outside urban areas as a priority infrastructure need; the sixth most frequent infrastructure need mentioned.

Although Protecting Our Natural Environment is a key goal of the council's community plan, there is limited reference made to renewable energy use by the Council or in the LGA, in order to meet this goal. The Mid-Western Region Community Plan places the onus of reducing energy use and considering alternatives to fossil fuels on the council residents.

Our Place 2040, Mid-Western Regional Local Strategic Planning Statement

The Council's 'Our Place 2040' guides land use planning for the LGA by identifying the regional values and characteristics, and priority actions for enhancing and conserving these values in line with the community's needs. The Local Strategic Planning Statement is based on the same five themes as the 'Towards 2030' Community Plan under which 12 planning priorities are organised. The planning priorities most relevant to the Project are:

- Planning Priority 4: Provide infrastructure and services to cater for the current and future needs of our community
- Planning Priority 7: Support the attraction and retention of a diverse range of businesses and industries
- Planning Priority 8: Provide leadership on economic development initiatives and identify resources and infrastructure required to drive investment and economic growth in the Region
- Planning Priority 9: Support the expansion of essential infrastructure and services to match business and industry development in the Region.

The Project is consistent with the Council's planning strategies and actions providing activities do not limit agricultural production or adversely impact visual amenity. The emphasis of local planning is on enabling and preserving existing economic activities, namely agriculture. That said, Council:

- makes provision for consideration of renewable energy developments that do not adversely impact agricultural production and scenic landscape
- identifies the construction phase of solar and wind projects as offering short-term opportunities for local businesses
- aspires to place sustainability at the centre Council activities and new developments
- recognises the benefits provided by State Significant Developments.

Mid-Western Regional Local Environmental Plan 2012

Council operates under the Mid-Western Regional Local Environmental Plan 2012 (current version 1 February 2021) which details a number of key objectives with regard to land use, including management and conservation of natural resources and heritage items of significance, securing the agricultural future of the region, and increased availability of urban and community services and infrastructure. Specifically, the plan also identifies the protection of the settings of Mudgee, Gulgong, Kandos and Rylstone through management of the urban and rural interface, limiting land use conflict and conserving key visual elements that contribute to the character of the towns.

State of the Environment Snapshot 2017-18, Mid-Western Regional Council

The strategic centre of Mudgee has grown in recent years due to the mining boom. It services other towns including Rylstone, Kandos, Ilford, Bylong and the historic town of Gulgong.

The Local Government Area is well known for its built heritage, food and wine tourism, and mining. The Castlereagh and Great Western highways connect Mudgee with Sydney, and the Golden Highway connects to Dubbo and Newcastle. These connections provide opportunities to move agricultural and mining products to domestic and export markets. Priorities:

- Support appropriately located and serviced land for residential development.
- Support the mining and resources sector and associated businesses.

- Leverage opportunities from the Local Government Area's location and rural character to support the established food and tourism market.
- Protect agricultural land from encroachment from residential development.
- Support the provision and continued development of major regional sports, recreation and cultural facilities.

Central West and Orana Regional Plan 2036, NSW DPIE

The key NSW State Government policy of relevance to Mid-Western Regional LGA, and the Project site, is the 'Central West and Orana Regional Plan 2036' which outlines the goals and actions for the Central West and Orana Region to achieve a sustainable future. This plan applies to 19 local government areas that cover an area of 125,666 square kilometres, including the Mid-Western Regional LGA. The Project site is in the Orana area and the plan recognises the distinct characteristics of the Central West and the Orana as two parts of the overall region. Dubbo is identified as the geographic, functional and economic centre of the Central West and Orana, and a central hub connecting rural communities, such as Mudgee. The plan sets out an aspiration for the Central West and Orana to be:

'The most diverse regional economy in NSW with a vibrant network of centres leveraging the opportunities of being at the heart of NSW'

The 'diverse regional economy' part of the vision includes 'Mining and Renewables' as one of its five key components. Renewable energy projects are important drivers of employment for smaller communities (such as Gulgong, Tallawang, Dunedoo) that can also support the development of other industries. The Orana is specifically identified as a priority area for solar energy generation.

The vision for the Central West and Orana Region closely reflects the vision and priorities identified in the 'Towards 2030 Community Plan'. The four goals established by the Regional Plan are:

- Goal 1 – The most diverse regional economy in NSW
- Goal 2 – A stronger, healthier environment and diverse heritage
- Goal 3 – Quality freight, transport and infrastructure networks
- Goal 4 – Dynamic, vibrant and healthy communities.

The Project is consistent with all four but is particularly relevant to the Goal 1, and specifically Direction 9 to 'Increase renewable energy generation'. The plan identifies the region's significant potential to support renewable energy projects, including large-scale solar, and states that co-generation (of electricity and heat) should be incorporated into project designs wherever possible. The Project site is specifically highlighted as a potential solar project in the 'Mineral Resources and Renewable Energy' map. Proposed actions to address Direction 9 are:

- 9.1 Identify locations with renewable energy generation potential and access to the electricity network.
- 9.2 Facilitate small-scale renewable energy projects using bioenergy, solar, wind, small-scale hydro, geothermal or other innovative storage technologies through local environment plans.
- 9.3 Promote best practice community engagement and maximise community benefits from all utility-scale renewable energy projects.

The Project is also relevant to Goal 3 and specifically Direction 21 to 'Coordinate utility infrastructure investment'. Direction 21 identifies off-grid renewable systems as a cost-effective alternative to system upgrades and extensions to provide reliable energy in remote communities.

The plan outlines the following key opportunities as relevant to the Project:

- Importance of tourism in historical towns and villages such as Gulgong
- Potential for coal seam gas extraction is concentrating mainly in the Orana region around Pilliga in the Warrumbungle Shire
- Early and effective community engagement will be promoted on these projects. New renewable energy projects require a strategic approach and should, where possible, incorporate small-scale co-generation measures into their design
- Action 9.3 Promote best practice community engagement and maximise community benefits from all utility-scale renewable energy projects.
- Direction 12: Plan for greater land use compatibility – largely focusing on residential and rural residential development
- Action 12.1 Conduct a pilot study with Central NSW Councils (CENTROC) to investigate practical on-ground mechanisms to help avoid land use conflict between intensive agricultural uses and other sensitive uses.

Literature Review: Renewable Energy Industry Context

This section presents a summary of attitudes and perceptions of renewable energy at the state, region and local level, which aims to inform the SIA for the Tallawang solar farm by placing the community feedback in this broader context. This summary draws on state-wide community consultation commissioned in 2014 by the Office of Environment and Heritage (now DPIE) to understand community awareness, knowledge and attitudes to renewable energy (OEH, 2015).

Acceptance of the Renewable Energy Industry

As shown in the figure below, production of wind and solar energy specifically has increased significantly over the past two decades.

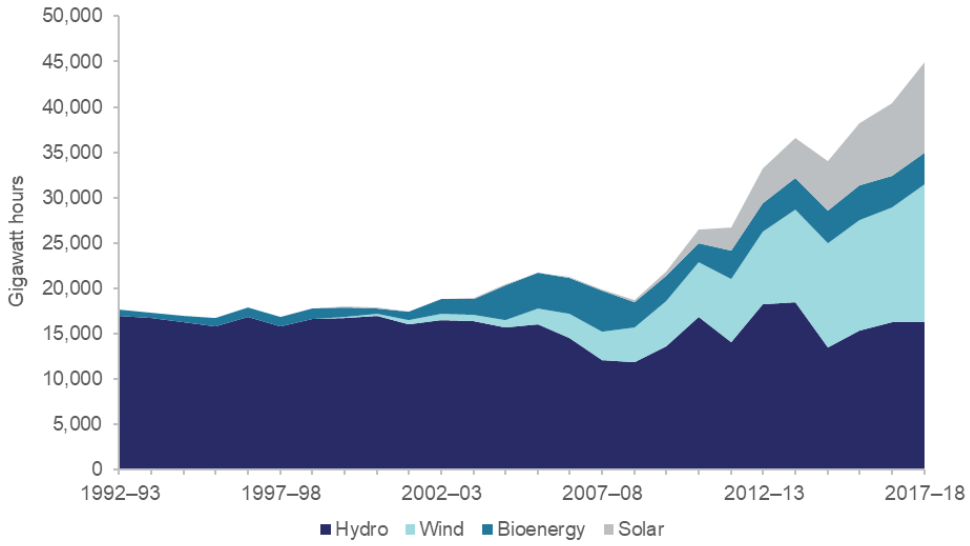


Figure E1 Energy produced by renewable source

Source: Department of the Environment and Energy (2020) *Australian Energy Statistics, Table O.*

A recent community survey undertaken by Energy NSW indicates a high level of support for renewable energy projects, particularly for solar farms, and a high level of knowledge, in particular relating to wind farm developments (refer to **Figure E2**). Suggesting that there is a role for developers to play in education the community on solar farms and their technology and impacts.

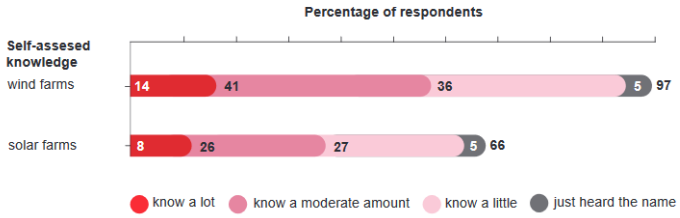


Figure 2.3: Awareness and self-assessed knowledge of wind farms and solar farms.

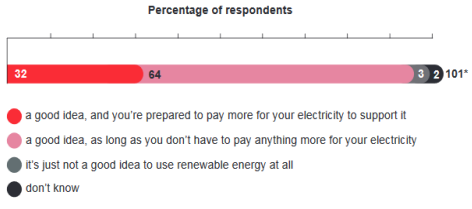


Figure 2.8: Overall views about using renewable energy to produce electricity in NSW.

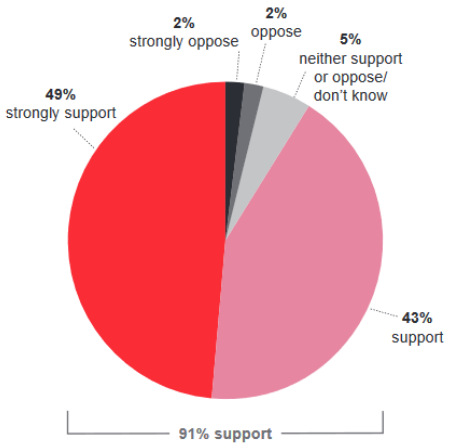


Figure 2.4: Overall support for generating electricity in NSW using renewable energy technologies.

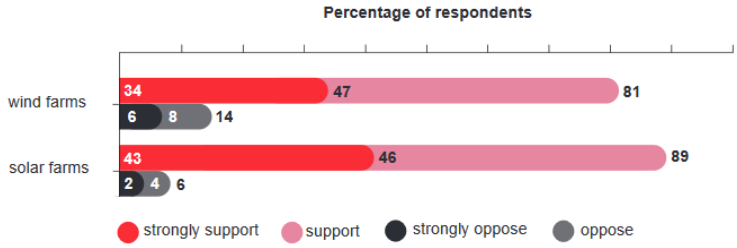


Figure 2.9: Support for building wind farms and solar farms in NSW.

Figure E2 Community sentiment relating to Renewable Energy Projects in NSW

Source: Energy NSW Community Survey

However, despite this support at a State level, the survey outcomes support the hypothesis that there is a lower level of support locally, with the study outlining that main concerns raised by key proximal stakeholders (1-2 km from proposed developments centred on property rights and access (including project compensation), noise and visual impacts; with some dialogue evident around the issue more broadly through prominent state and national groups such as NSW Farmers and Lock the Gate. As shown in **Figure E3** there appears to be more support from proximal residents for solar farms than wind farms, with a significantly larger amount of strong opposition to wind farms.

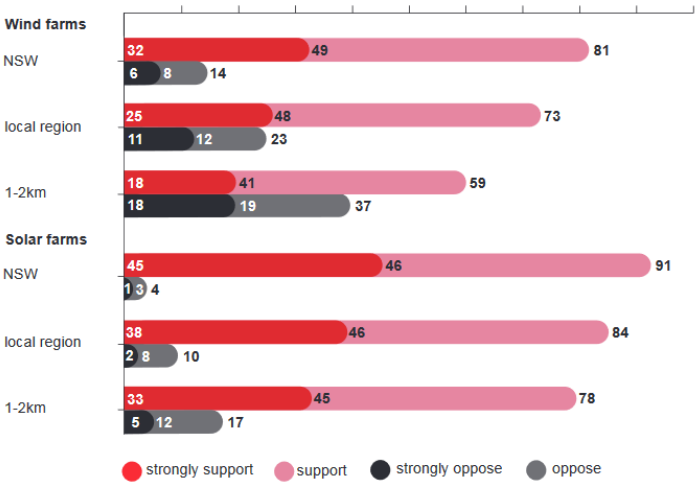


Figure 2.10: Support for and opposition to building a wind/solar farm in three proximities – in NSW, the local region, and within 1–2 kilometres of where they lived.

Figure E3 Support and opposition for Renewable Energy Projects

Source: Energy NSW Community Survey

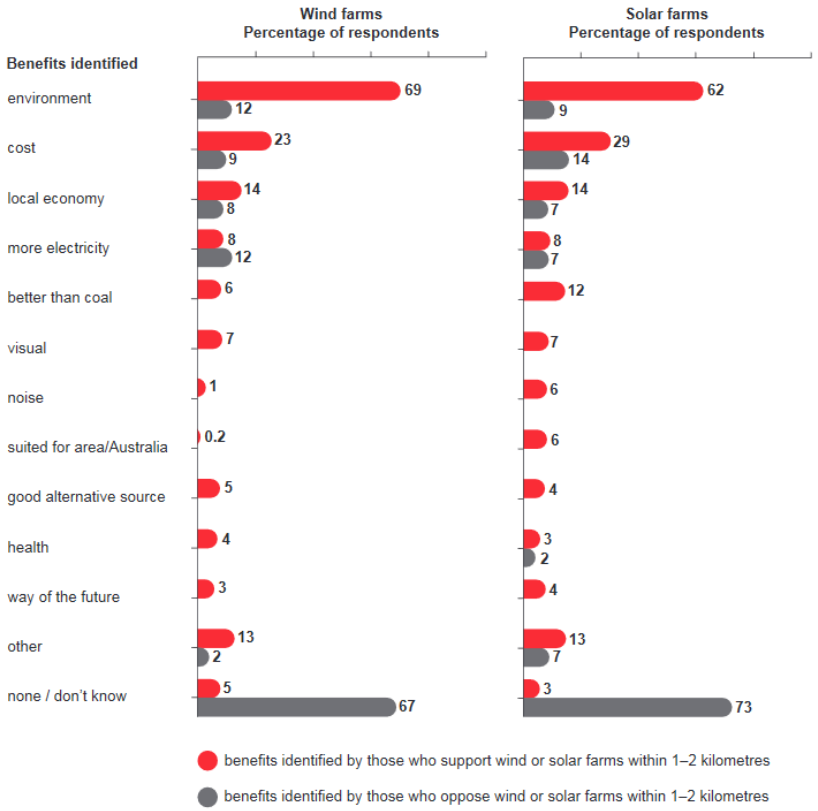


Figure E4 Proximal stakeholder identified benefits of Renewable Energy Projects in NSW

Source: Energy NSW Community Survey

Overwhelmingly, the main benefit reported for both wind and solar projects was the benefit to the environment of renewable energy production, followed by the potential decreased cost of energy, followed by local economic benefits (refer to **Figure E4**).

The key issues proximal residents reported in relation to wind farms were noise and visual amenity, with noted concern regarding health and location of turbines in comparison to residences. Whereas concerns around solar farms primarily related to the location of solar modules, the space they take up and the impact on the environment (refer to **Figure E5**).

There has also been concern expressed regarding the loss of important agricultural land in the Central West, with the NSW Energy and Environment Minister making a commitment to balancing the land-use in the region to ensure renewable energy projects aren't being built on prime agricultural land. Furthermore, in the Mid-Western Regional Council's State of the Environment Snapshot (2017-2018), the Council identify one of their priorities as protecting agricultural land from encroachment from residential development, however, do not cite other threats to agricultural land use.

At a community level, there is also concern regarding the use of productive agricultural land for renewable energy projects, noting that whilst they aren't opposing renewable energy as a whole, they want to see land of lesser agricultural importance considered for solar farm projects.

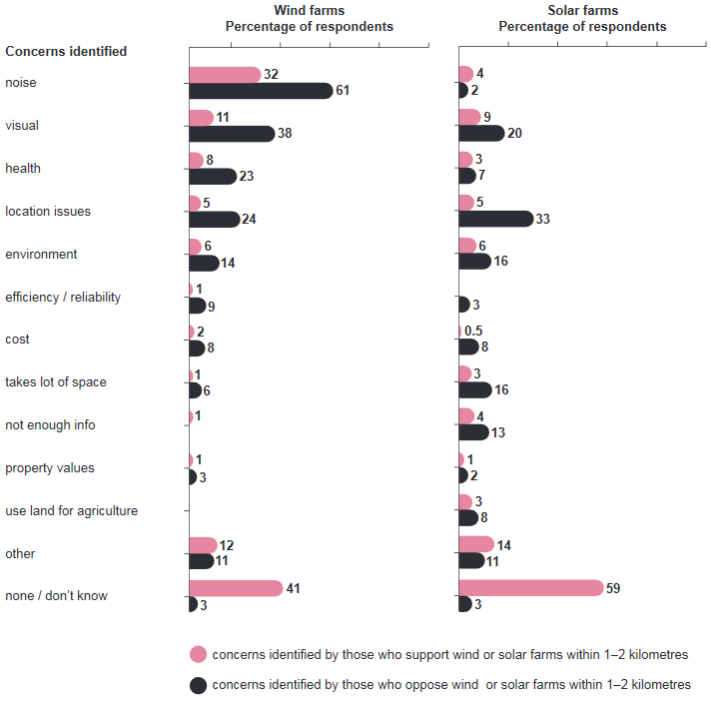


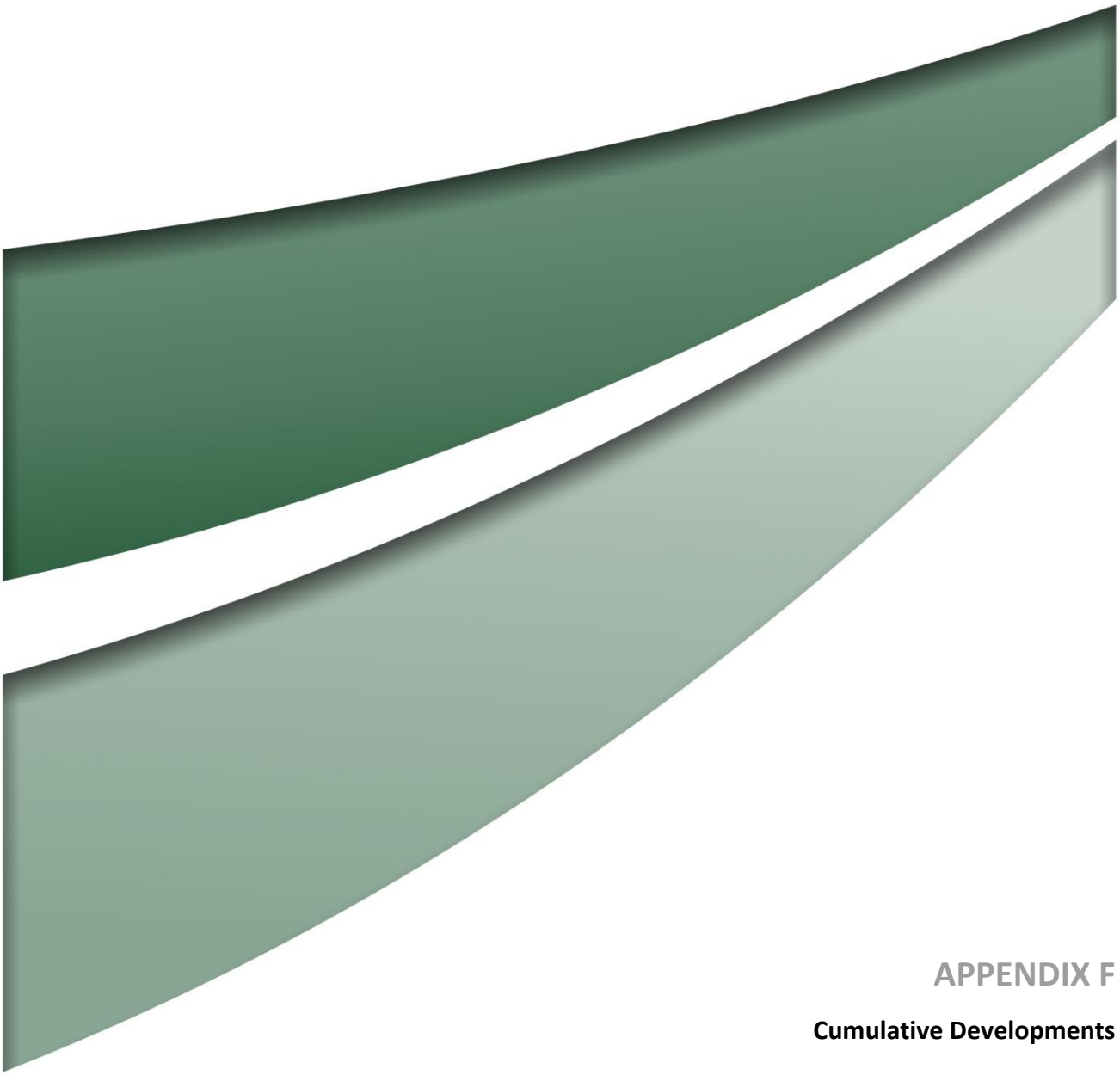
Figure E5 Proximal stakeholder identified concerns of Renewable Energy Projects in NSW

Source: Energy NSW Community Survey

> *But now that there is so much money available to develop solar farms, if that money destroys rich farmland... isn't that missing the point? Perhaps we could find some of our other boundless plains (or roofs...) so that solar and agriculture can both contribute to Australia's prosperity?* (Gulgong Residents for Responsible Renewables, 2019).

It is evident whilst there is an aspiration within the community for renewable energy, the drive for renewable energy projects in the region appears to be rooted in the NSW Government policies such as the development of the Central-West and Orana REZ. Furthermore, whilst there is support in the community for renewable energy, there are still a number of concerns in relation to the industry that is relatively new within the region.

The feedback, interests and concerns of the community and key stakeholders in regard to the Tallawang Solar Farm specifically are outlined in **Section 4.0,** whilst **Section 3.6** analyses the existing social environment in the region and assesses the community's ability to adapt to change bought about by the Project.



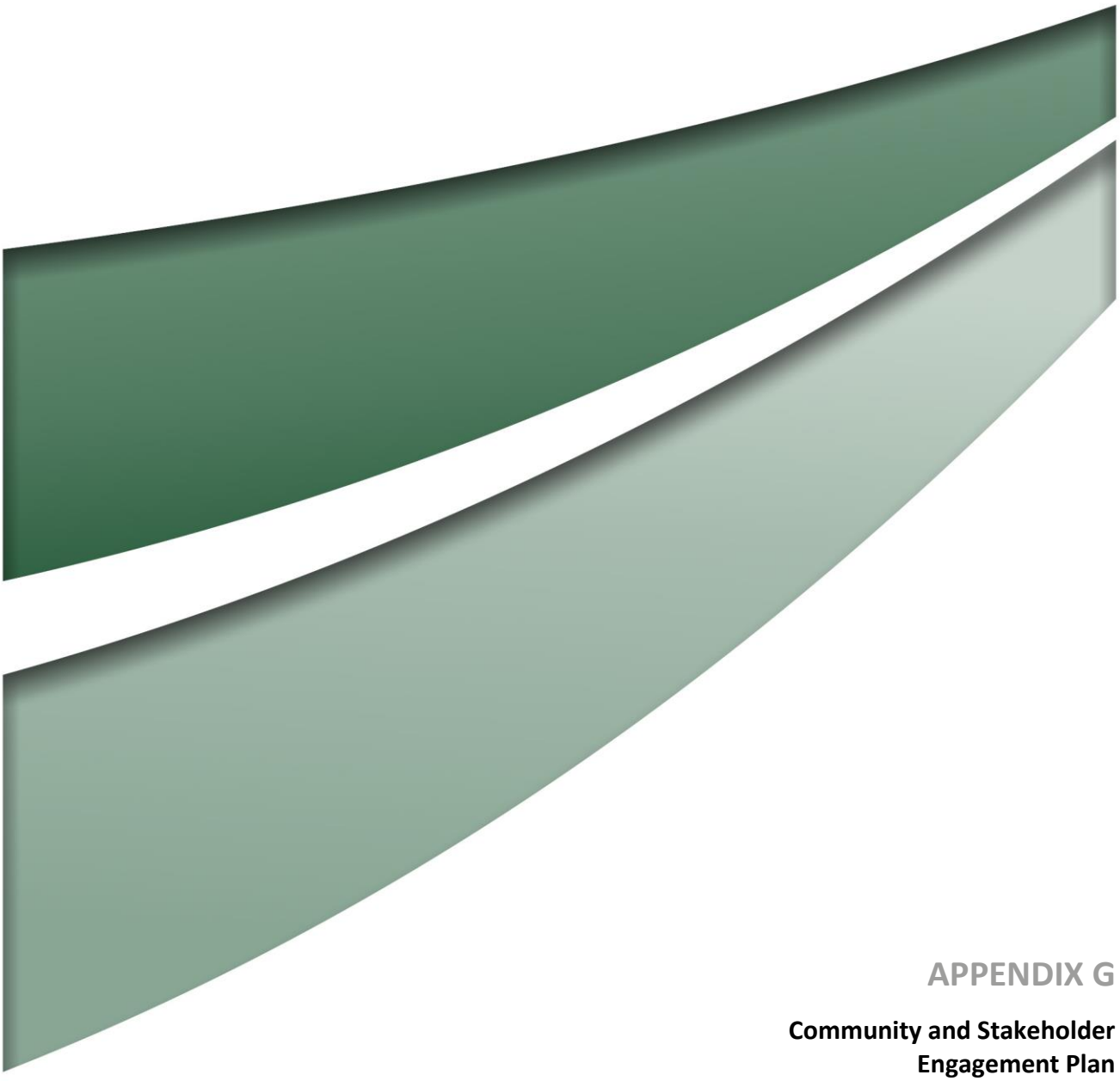
APPENDIX F

Cumulative Developments

Proximal Renewable Energy Projects

Project Name	Developer	Timing/ Phase	Proximity to Tallawang Solar Farm	Brief Description
Central-West Orana REZ Transmission	TransGrid	Scoping Reports and Environmental Impact Statements	Sections are expected to be adjacent to the Site	Installation of transmission lines, substation(s) and related infrastructure to support the delivery the Central-West Orana REZ.
Beryl Solar Power Plant	First Solar	Operating commercially since June 2019	Approximately 15 km SE	29 of the 31 public submissions raised objections, the top 3 issues being Socio-economic and community impacts, noise and visual amenity.
Stubbo Solar Farm	UPC\AC Renewables Australia	Scoping report submitted Consultation and preparation of planning documents	15 km SE	400 MW 100 GWh per year Expected to create up to 400 jobs during construction, up to 10 ongoing jobs
129 Old Mill Rd, Gulgong	Vena Energy	Development Application unanimously refused by Western Regional Planning Panel 3 August 2020	20 km S	6MW-DC Significant community opposition including meetings and petitions organised by Gulgong Residents for Responsible Renewables (GRRR)
Valley of the Winds	UPC\AC Renewables Australia Joint venture between UPC Renewables Group and AC Energy (a subsidiary of the Ayala Corporation).	Early stages of planning Scoping report submitted to DPIE May 2020	25 – 45 km NE	800 MW 2,500 GWh per year Turbines to be sited on ridgelines within cleared land currently used for livestock grazing Up to 175 wind turbines
Bodangora Wind Farm	Infigen Energy	Operating since 2019	40 km SW	113.2 MW 33 Turbines
Burrundulla Mini Sustainable Energy Park	IT Power (Australia)	Development Application unanimously refused by Western Regional Planning Panel December 2020	50 km S	10 MW solar farm off the Castlereagh Hwy Faced significant community opposition
Liverpool Range Wind Farm	Tilt Renewables, acquired from Epuron in early 2019 Initially developed by Epuron beginning in 2009	Approval for 267 turbines and 1000 MW capacity in March 2018. Application is being prepared to amend approval to enable use of latest technology including larger turbines.	Wind turbines: between Coolah and Cassilis, 50 km NE – 60 km ENE Transmission line: between Cassilis and Ulan, 60 km ENE – 30 km ESE	1000 MW 267 turbines 33 wind farm host landowners

Project Name	Developer	Timing/ Phase	Proximity to Tallawang Solar Farm	Brief Description
Wellington Solar Farm	Lightsource BP	Construction commenced December 2019	55 km SW	200 MW 420 GWh per year Across 316 ha of grazing land
Wellington North Solar Farm	Lightsource BP	Planning application under assessment by NSW DPIE	55 km SW	350 MW 700 GWh per year Across 970 ha of cropping and grazing land
Maryvale Solar Farm	Photon Energy Group	Construction expected to commence Q4 2021	55 km SW	196 MW 345.9 GWh per year 450 ha
Burrendong Wind Farm	Epuron	SEARs issued for the EIS in late 2020	56 km SSW	400 MW 69 Turbines
Wollar Solar Farm	Wollar Solar Development Pty Ltd	Development Consent provided February 2020	60 km SE	290 MW AC 621 GWh Includes a battery storage facility with a proposed storage capacity of 30 MWh
Suntop Solar Farm	Canadian Solar	Construction commenced Q4 2020 Early generation target Q3 2021	70 km SW	189 MW DC 395 GWh per year
The Crudine Ridge Wind Farm	CWP Renewables	Currently under construction, expected to be complete by early 2021	90 km S	135 MW 37 wind turbines Included an upgrade of Aarons Pass Road (in the MWRC)
Hills of Gold Wind Farm	Engie	Proponent is currently responding to submissions made to the EIS	175 km NE Nundle, in the New England REZ	420 MW 1,100 GWh per annum Up to 70 wind turbines and associated infrastructure Significant community opposition, including 633 submissions from the public



APPENDIX G

Community and Stakeholder Engagement Plan

Community & Stakeholder Engagement Plan

Tallawang Solar Farm and Barneys Reef Wind Farm

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1 Introduction

The proposed Tallawang Solar Farm and Barneys Reef Wind Farm (the Project) by RES Australia Pty Ltd (RES) (the proponent), comprises the construction and development of a large-scale solar farm and an adjacent large-scale wind farm with associated battery storage in the Central West Region of New South Wales (NSW), Australia.

1.1 Purpose and objectives

This Community and Stakeholder Engagement Plan (CSEP) outlines the approach, strategy, and implementation program to inform the Request for Secretary's Environmental Assessment Requirements (SEARs) and the Environmental Impact Statement (EIS) for the State Significant Development Application (SSDA) of each project, to be lodged with the NSW Department of Planning, Industry and Environment (DPIE).

The purpose of this document is to outline the approach and strategy for community and stakeholder engagement across the Project's planning and approvals phase, to inform the preparation of relevant Scoping Reports (as part of the Request for SEARs) and completion of the Project's technical studies (as part of the EIS).

As noted in the NSW DPIE draft SIA Guideline (2020), respectful, inclusive, and meaningful engagement is a fundamental part of project planning and development. Engagement with affected communities and stakeholders provides first-hand insight into what people value and how they expect a project to affect them. Community and stakeholder engagement is a key component of the EIS processes, with the DPIE draft SIA Guideline (2020) outlining the following objectives to guide engagement:

- To ensure those potentially affected by a project understand the project and how it will affect them.
- To collect relevant data, evidence, and insights for scoping the SIA to maximise diversity and ensure representativeness of views.
- To understand the interests that people have and how impacts may be experienced (from their perspective).
- To consider the views of people in a meaningful way and use these insights to inform project planning and design.
- To provide opportunities for people to collaborate on project design matters and input to preferred solutions to address impacts.
- To confirm data, assumptions, findings, and recommendations.
- To ensure people know how their input has been considered, and what strategies will be put in place to address their concerns.
- To help understand how other specialist studies prepared for the EIS assist in addressing social impacts.
- To respect people's privacy, allowing them to communicate their views anonymously if requested.

The specific objectives of this CSEP are to:

- Support the building of strong relationships with local stakeholders to establish a socially sustainable project.
- Guide and support a strategic and coordinated approach to engagement, including specific mechanisms, timeframes and responsibilities during the planning and assessment phase of the Project.
- Facilitate transparent and meaningful information exchange on the Project.

- Identify key stakeholders and communities relevant to the development of the project.
- Support the Project's understanding of its local context, identification of stakeholders, including vulnerable community groups, stakeholder expectations and project alignment with local aspirations.
- Facilitate the genuine involvement of stakeholders in the planning and approvals process as well as in developing responses to impacts.
- Ensure that community and stakeholder inputs are effectively integrated into the technical assessments within the EIS and inform refinements to project design and plans.
- Meet regulatory requirements for public, stakeholder and community consultation.
- Collaborate with local stakeholders on local benefit sharing strategies to ensure they are co-designed, targeted, and appropriate to the Project's operating context.

Furthermore, RES is committed to:

- Facilitating the early engagement of local stakeholders to understand potential social impacts and opportunities that may arise from the Project.
- Keeping the community informed throughout the development phase of the Project, in turn allowing the views of local stakeholders to inform project planning and design.
- Providing access to up-to-date information on project progress and demonstrate where applicable, how the design of the Project has been adapted to take account of community participation and the findings of feasibility studies.
- Listening and responding to any concerns raised.
- Giving stakeholders clear and timely information on how and when they can participate in decision making.

1.2 Approach

The NSW Government's draft SIA Guideline (2020) proposes to make SIA applicable to all SSDs in NSW, with proponents required to commission standalone Social Impact Scoping Reports as part of the Request for SEARs. These studies are informed by, and rely on, the outcomes of early, and ongoing community and stakeholder engagement through the assessment phase. The approach to stakeholder engagement for the Project will also be informed by the NSW Government's draft SIA Guideline (2020), the Large-Scale Solar Energy Guideline for State Significant Development (2018) and the Wind Energy Guideline (2016). Furthermore, best practice engagement design and delivery will also be guided by the International Association of Public Participation (IAP2) Public Participation Spectrum as per Figure 1.

INCREASING IMPACT ON THE DECISION

	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
PROMISE TO THE PUBLIC	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

Figure 1 IAP2 Public Participation Spectrum

Further, this CSEP recognises the unique development context of the Tallawang Solar Farm and Barneys Reef Wind Farm, being situated adjacent to each other within the Central-West Orana Renewable Energy Zone (REZ), undergoing planning and approvals process simultaneously, and by the same proponent. As a result, the CSEP embeds the following integrated approach to streamline engagement and scoping for the two side-by-side projects to deliver separate reports as required by DPIE, as outlined in Figure 2Error! Reference source not found..

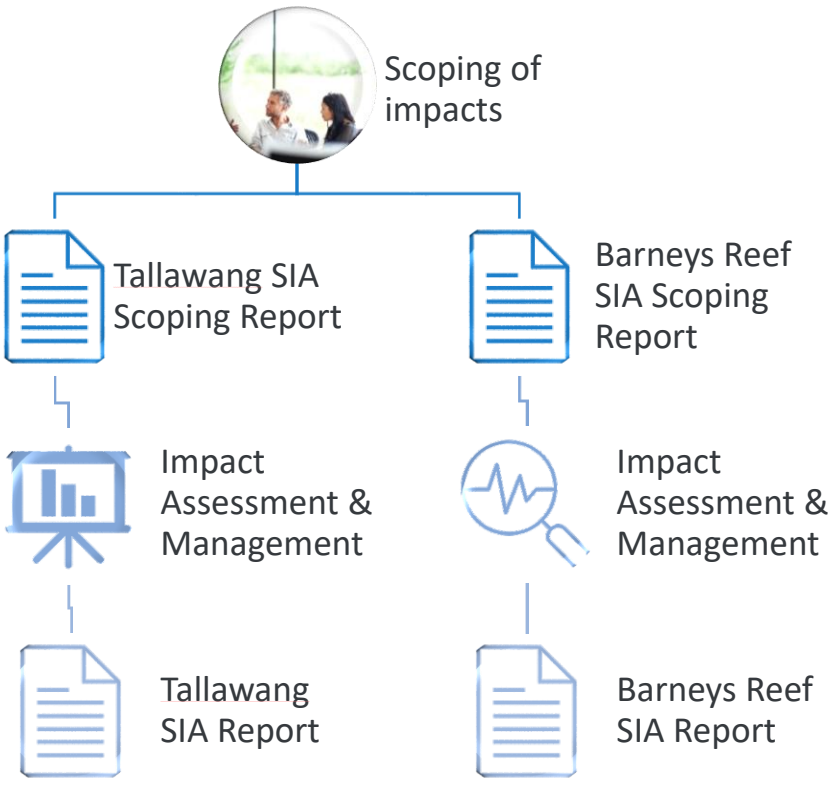

Figure 2 Integrated approach

1.3 Process

This CSEP has been developed as a key output of the Community and Stakeholder Engagement Strategy Workshop held between RES and Umwelt Environmental & Social Consultants on 17 March 2021. The workshop covered the following items in developing this CSEP:

- confirm objectives of the CSEP
- share key outcomes of community profiling activities to inform and refine engagement plans and mechanisms
- identify key social issues or risks
- validate key stakeholders to be involved and engaged
- co-develop Project messaging
- discuss recommended mechanisms for engagement
- assign responsibilities per activity
- Implementation Plan – confirm actions, timing and staging.

The CSEP will be revised following RES review for the Request for SEARs phase. It will remain an iterative document throughout the Project planning and approvals phase and will be updated post the EIS preparation period.

1.4 Key Project milestones

Table 1Error! Reference source not found. outlines the key Project milestone dates throughout the two EIS programs.

Table 1 Key milestones

Phase	Indicative timing
Preparatory planning	February 2021
Landholder consultation and agreements	February 2021
CSEP development and workshop	Mid-March 2021
Round 1 engagement	**March 2021**
Scoping Report (Tallawang)	April – May 2021
Scoping Report (Barneys Reef)	April – May 2021
Hold point – SEARs (June 2021)	
Detailed environmental investigations commence	June – July 2021
Round 2 engagement	**July – August 2021**
Reporting (Tallawang)	September 2021

EIS lodgment (Tallawang)	October 2021
Round 3 engagement (Barneys Reef - TBC)	**October - November 2021**
Public exhibition period (Tallawang)	November 2021
Response to submissions (Tallawang)	December 2021 – January 2022
Reporting (Barneys Reef)	December 2021
EIS lodgment (Barneys Reef)	January 2022
Public exhibition period (Barneys Reef)	February 2022
Response to submissions (Barneys Reef)	March - May 2022
Project updates, impact management and monitoring	Ongoing

2 Project overview

2.1 Project background

The proposed Tallawang Solar Farm and Barneys Reef Wind Farm comprises the construction and development of a large-scale solar farm and an adjacent large-scale wind farm in the Central West Region of New South Wales (NSW), Australia. The Project is in the vicinity of a number of other active and planned RES Projects in the Central West Orana REZ.

Landholder agreements have been executed for both Projects and a number of environmental and social studies have been commenced in line with the requirements in the EP&A Act (1979).

2.1.1 Tallawang Solar Farm

The proposed Tallawang Solar Farm comprises a solar farm and battery infrastructure located 8 kilometers northwest of Gulgong, New South Wales (NSW), in the locality of Tallawang in the Mid-Western Regional Local Government Area (LGA).

The Tallawang Solar Farm involves the construction, operation, and maintenance of a 390MW solar farm on a 920-hectare site. It involves approximately 1,144,600 solar photovoltaic (PV) modules with a maximum height of 5m located across the Project site. The site would also include a system of inverters and voltage step-up transformers that would be positioned throughout the PV modules to allow for the transfer of electricity to an onsite Battery Storage Facility (BSF). The BSF would comprise 72 battery units positioned throughout the solar farm. In addition, there would be an onsite switchyard, a 132kV substation and an overhead 132kV line connecting the solar farm to a proposed 330kV transmission line which would cross the Wallerawang Gwabegar Railway.

In regard to supporting infrastructure, the site will contain temporary construction site offices, construction vehicle parking areas, and material laydown areas for the construction phase; site office, and operations and maintenance building with parking for the operations team; and a storage shed.

The site will be accessed from Puggoon Road that connects to Castlereagh Highway that travels to Gulgong in the south and joins the Golden Highway in the north.

Exclusivity agreements are in place with two host landholders to develop the Project.

2.1.2 Barneys Reef Wind Farm

The proposed Barneys Reef Wind Farm site is located approximately 15km north of Gulgong in the Mid-Western Regional LGA in the suburb of Barneys Reef.

The Barneys Reef Wind Farm Project would have a capacity of 340MW and will include the construction and operation of approximately 60 wind turbines that are approximately 220m tall.

To allow for the transfer of energy, electrical connections between the proposed wind turbines consisting of a combination of underground cables and overhead powerlines would be developed that would connect to the shared onsite substations and subsequently the 330kV transmission line network.

Agreements are in place with 13 host landholders within Barneys Reef to develop the Project.

2.2 Governance

Both Project sites are located within the Mid-Western Regional Council area of the Central West Region in NSW. Within the broader LGA, there is an apparent community desire to reduce the consumption of energy and fossil fuels, and to consider alternative resources (Council Community Survey, 2013) and as such, there has been a commitment from Council to increasing the use of alternative energy sources in the LGA (Council Community Plan, 2013). However, there is reported concern regarding use of prime agricultural land for renewable energy projects and lack of community involvement in recent projects. Therefore, some level of support is anticipated from the community in response to the benefit of clean energy, with a potential level of opposition as a result of potential land-use conflicts.

The key industries in the Central West have historically been agriculture, transport and logistics, with community and tourism value stemming from the historical towns and villages in the area such as Gulgong; with a particular economic contribution from mining in the Mid-Western Regional LGA. In recent years there has been a redirected focus on renewable energy, including the approval of the large-scale Liverpool Range Wind Farm in the neighbouring Warrumbungle Shire Council area.

2.3 Policy setting

The NSW Government's current energy security policy and approach to a clean energy transition is being delivered through the strategic development of the renewable energy sector, as outlined through the NSW Government's *Renewable Energy Action Plan* (2013), *Electricity Strategy* (2019) and the *Electricity Infrastructure Roadmap* (2020). This policy context is relevant to inform the public positioning and key messaging for the planning and development of the Projects.

The Central West Region has been determined a pilot for the NSW Government's Renewable Energy Zones (REZ) announced in the *2019 Electricity Strategy*. This Strategy also includes the New England REZ and South West REZ. The Projects' sites being located within the Central-West and Orana REZ will be a consideration for cumulative effects on the community, due to other renewable projects being planned and developed nearby.

2.4 Community profile

The community[1] can be characterised by the following observations, shown in Figure 3 and Figure 4Error! Reference source not found.:

- An older population than the NSW average, particularly in the suburbs proximal to the Projects (NSW median age is 35)
- A higher Aboriginal and Torres Strait Islander population than the NSW average (3.4%)
- A slightly higher unemployment rate in the Mid-Western Regional LGA in comparison to NSW (6.3% in NSW)
- High motor vehicle usage, particularly in the host suburb of Tallawang, from which we can assume a high level of road use
- A low level of property occupation in the suburb of Tallawang however, a high number of people per household
- A low level of internet access across the LGA with one third of residents unable to access the internet from their homes
- A low level of residents born outside Australia; therefore the community is not expected to be culturally and linguistically diverse.

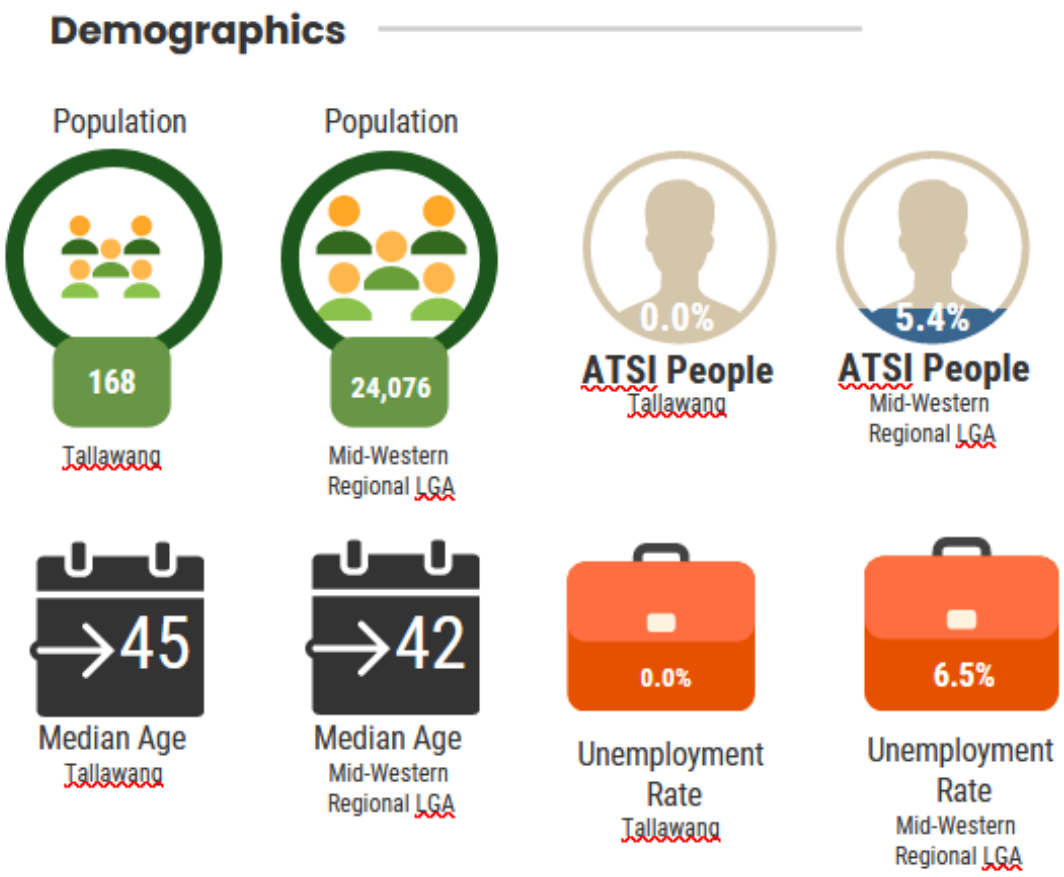

Figure 3 Community demographics

[1] No data available for Barneys Reef State Suburb due to small population size

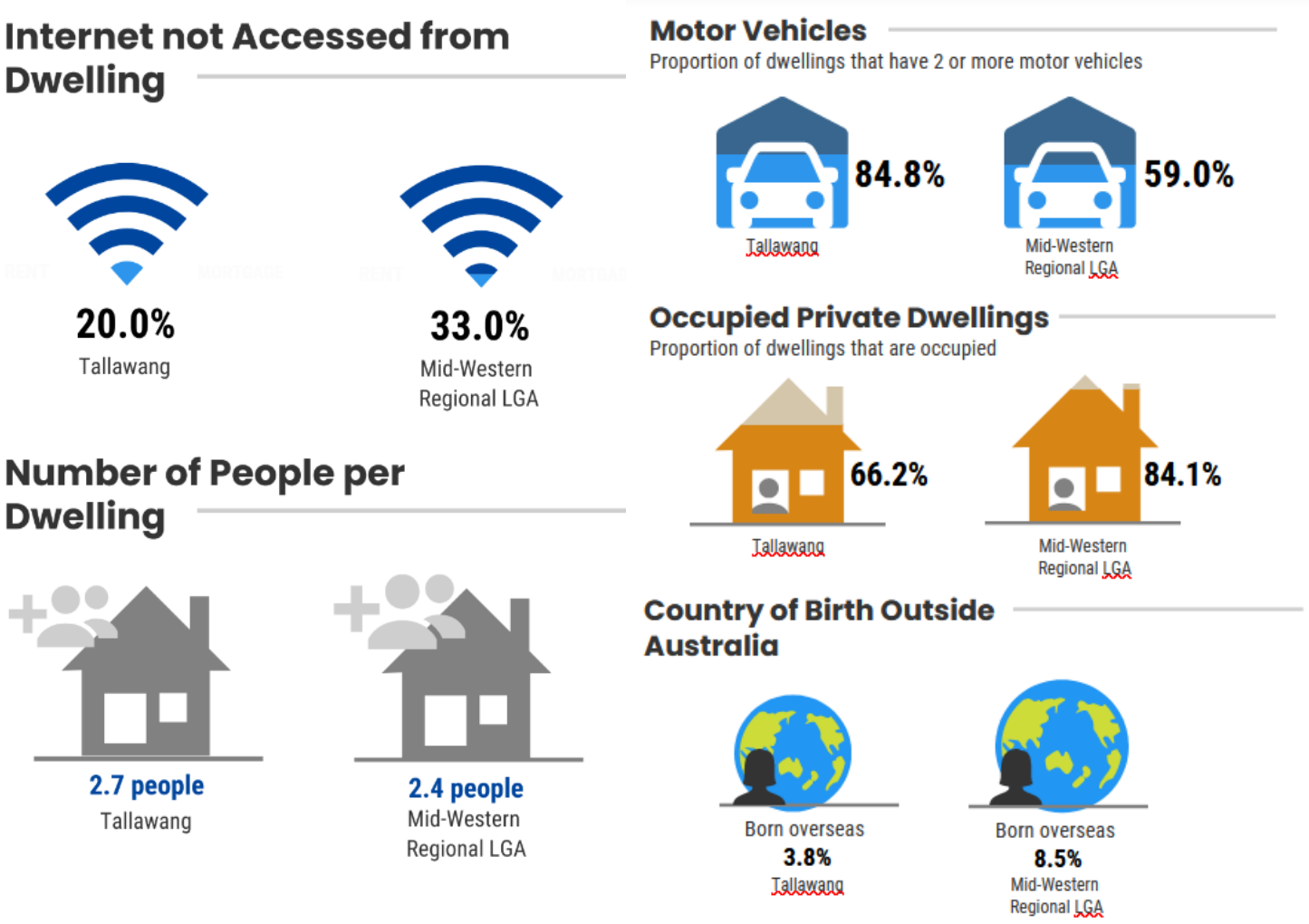

Figure 4 Social indicators

Figure 5 outlines the Area of Social Influence for the Projects. The Social Impact Scoping Report will further detail the social baseline for the Projects, including the community values, natural and built characteristics and key socio-demographic conditions.

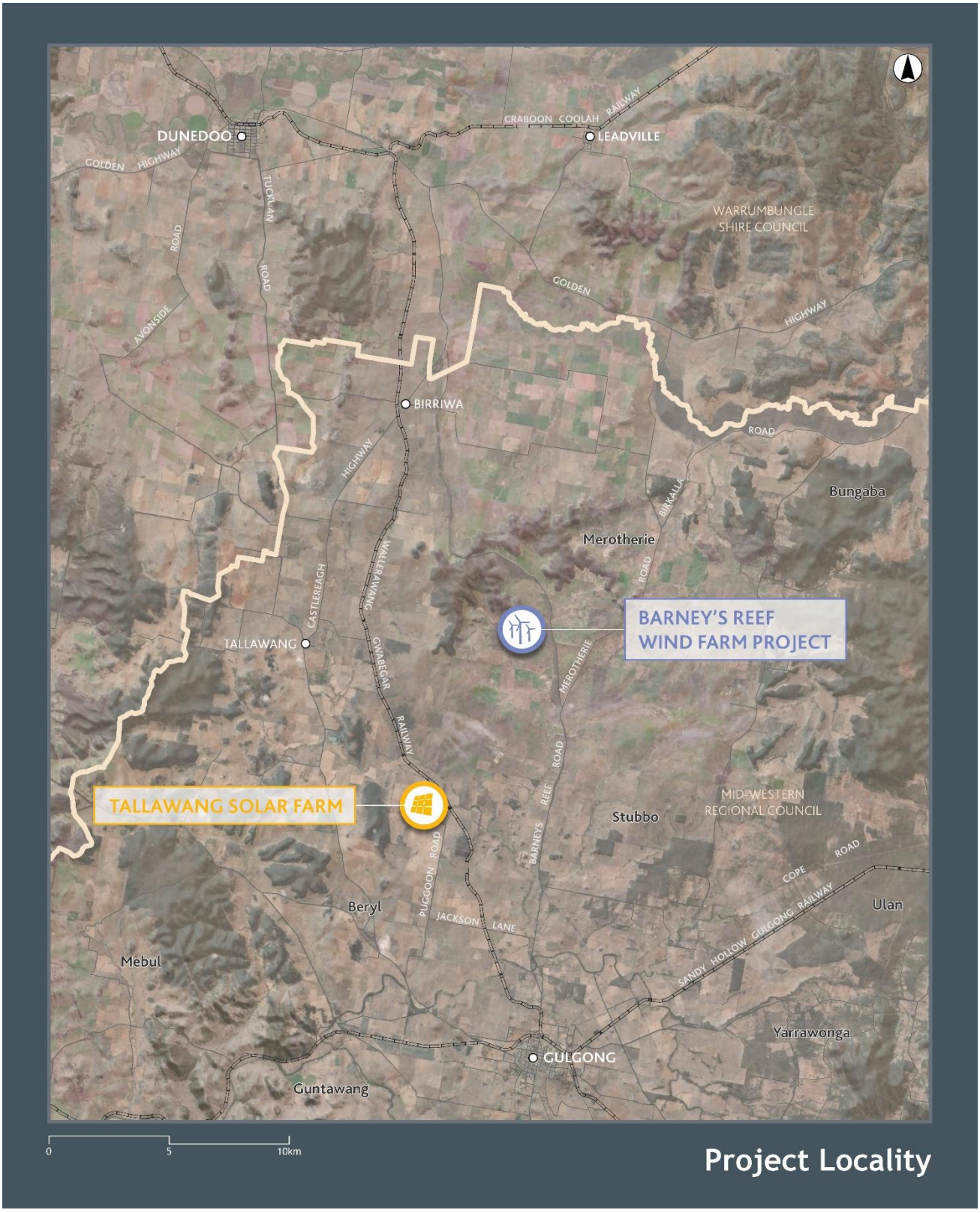

Figure 5 Tallawang Solar Farm and Barneys Reef Wind Farm Area of Social Influence

2.5 Known stakeholder issues and social risks to the Projects

This section provides an overview of identified local concerns, issues, and interests in the form of social risks as relevant to the Project. This information is important in focusing the assessment process on matters of concern and interest to relevant stakeholder groups, for further consideration in Project planning and development.

In recent years, proposed renewable energy projects across NSW have had diverse responses from local communities on their perceived impacts. Following an initial review of Project information and plans, as well as submissions received on comparable or nearby projects, local media, and other publicly available documentation, we have understood the following issues to be of relevance for consideration in planning and developing the Project.

Firstly, matters relating to the level of information sharing and community participation in project development, including the opportunity for stakeholders to be involved in decision-making processes that affect them:

- Lack of community representation in project planning and development
- Confusion regarding two projects in one locality
- Lack of knowledge or experience of renewables, resulting in mistrust or scepticism.
- Community division / polarisation
- Recent experiences with other projects, resulting in misinformation.
- Consultation fatigue due to multiple concurrent projects

Secondly, matters relating to broader community effects:

- Strain on local infrastructure, facilities, and services
- Cumulative effect on cohesion in townships caused by the presence of multiple concurrent projects
- Lack of local long-term benefit
- Detraction from historic and tourist attraction of Gulgong
- Climate change adaptation and intergenerational equity
- Unequal distribution of project benefits

And thirdly, matters relating to the Project footprint:

- Social amenity factors such as levels of noise, visual impact, and other amenity impacts
- Changes to local road conditions, increased traffic, and concern for public safety due to the construction workforce
- Land use conflict with renewables development in food production and other agricultural areas
- Perceived property devaluation
- Disruption to farming operations and livelihoods
- Health and wellbeing of workers.

The cumulative nature of renewable energy projects must also be considered in the case of this project given the NSW Government's NSW Electricity Infrastructure Roadmap and other proximal development projects.

From a social perspective, matters as described above are often inter-related and may be perceived both positively and negatively by different stakeholder groups.

3 Engagement strategy

3.1 Principles of engagement

RES believes that community engagement creates mutual benefits for both the developer and the communities in which they operate. RES is committed to clear, honest, and transparent community engagement through all stages of a project lifecycle from initial site selection through to planning, construction and operations. The company's approach to engagement is heavily influenced and consistent with, the Clean Energy Council's (CEC) Best Practice Charter for Renewable Energy Development 2018. RES is a founding signatory of this Charter.

The principles underpinning community engagement adopted by RES align with the '*Community Engagement Guidelines for the Australian Wind Industry*' developed by the Clean Energy Council (CEC, 2012). In adopting the principles of the Guideline, RES commits to the following with respect to the development of the Project:

- **Openness.** Relevant information will be shared with the community in a format that is clear, accurate, timely and honest.
- **Inclusiveness.** RES will work with project stakeholders to ensure their perspectives are considered.
- **Responsiveness.** All community concerns will be listened and responded to.
- **Accountability.** The project will continue to monitor, evaluate and disclose information about project activities and the identified positive and negative impacts of the project.

RES has a dedicated and experienced team which can draw on its learnings from other projects in Australia to establish respectful relationships with local communities. In this way, RES aims to foster social licence to plan, construct and operate projects, striving for best practice, and early engagement with communities to develop an understanding of the community and the project's stakeholders. We understand that no two communities are the same and our investment in early engagement allows us to tailor our communications approach to the community we are working in. In turn, this supports the ability for communities and local stakeholders to participate in and inform project planning and development. RES acknowledges that a robust community and stakeholder engagement process can further inform the assessment process and project technical studies to bring about positive project and community outcomes.

3.2 Stakeholder identification

A stakeholder identification process has been undertaken to further define relevant stakeholders for the project within each of these stakeholder groupings:

- **Group 1:** high priority – stakeholders who require proactive and collaborative engagement.
- **Group 2:** moderate priority – stakeholders who will require information provision and/or may be interested in the project.
- **Group 3:** low priority – stakeholders who will be given the opportunity to participate but will not necessarily be engaged directly.

A breakdown of Group 1 stakeholders is presented in Table 2 with further definition of stakeholders and their respective groupings outlined in the Projects' Stakeholder Database.

Table 2 Project Stakeholders

Stakeholder group	Priority	Level of engagement (IAP2)	Potential interest or concern
Host Landholders	1	Collaborate	Accessibility, social amenity, land acquisition, livelihoods, and personal advantage/ disadvantage
Proximal Landholders	1	Involve	Accessibility, land use conflict, social amenity, personal advantage/ disadvantage
Traditional Owners	1	Involve	Aboriginal rights and interests, native title, cultural heritage, and land access, development opportunities
State and Local Government	1	Involve	Cumulative impacts, land use/ intergenerational equity, community or public perceptions, opportunities for collaboration, economic benefits, local infrastructure, and services
Environmental Groups	1	Consult	Cumulative impacts, land use/ intergenerational equity, climate change adaptation, ecological/ environmental impacts
Community & Special Interest Groups	1	Consult	Cumulative impacts, land use/ intergenerational equity, local benefit, impact on heritage or tourism, climate change adaptation, community and economic changes
Local Businesses & Service Providers – Accommodation, Education, Emergency Services, Employment & Training, Health	1 2	Consult	Cumulative impacts, demand and capacity, opportunities for collaboration, economic benefits, community and economic changes, local infrastructure, and services
Broader Community	2	Inform	Cumulative impacts, potential change to sense of community / community cohesion, climate change adaptation, local benefit, local infrastructure, and services
Local Media	2	Inform	Cumulative impacts, opportunities for collaboration, community or public perceptions, local benefits, community and economic changes

3.3 Engagement mechanisms

The engagement of stakeholders and community groups will include a combination of:

- **Consultation and engagement:** to facilitate stakeholder involvement in the identification of issues/impacts, areas of interest/concern and strategies to address the issues raised.
- **Information provision:** to improve knowledge and awareness of the company, its activities, the project, and key issues/impacts as they arise.

Various methods will be used to engage with the different stakeholder groups based on the type of information being conveyed, level of feedback required, understanding of stakeholder needs regarding engagement, and identified stakeholder engagement preferences identified in Table 3Error! Reference

source not found. below. This will include existing or previous mechanisms utilised by RES as well as additional mechanisms.

Table 3 Engagement Mechanisms

Mechanism	Description
Website/hotline/email	Platforms and tools to provide opportunity for the wider community or public to engage with the Projects (information provision and feedback submission) outside of dedicated consultation periods
Media release	Holding statement outlining key messages in local media
Project Information Sheet	No. 1 – Project overview No. 2 – Project update and outcomes of scoping phase No. 3 – Project update and outcomes of technical studies
Project briefing	Formal briefings to key stakeholders and government agencies, with Project Information Sheet and/or slide deck to formally introduce the Projects
Personal meeting / interview*	Introductions to the Projects and team, semi-structured discussion to listen to individual concerns, interests, issues and gather preliminary feedback, scope potential impacts and opportunities, including sensitivities, to inform mitigation / enhancement strategies, understand future engagement preferences
Community information and feedback sessions	Informal 'drop in' sessions to provide information (interactive), to provide a 'face' of the project, opportunity for members of the public to pose questions, project team to visually share results of technical studies, and collect community feedback (Round 2 only)

*Personal meetings can also be undertaken in small groups, noting that the focus of these meetings is to understand and scope local concerns, interests, issues, and priorities, not only to provide information on the Projects.

Table 4 outlines the mechanisms that are planned be used to engage each stakeholder group for the Projects.

Table 4 Mechanism Matrix

Stakeholder group	Information provision			Engagement mechanism		
	Website/ hotline/ email	Media release	Project Information Sheet	Project briefing	Personal meetings/ interview	Community information and feedback session
State Government			✓	✓		
Local Government		✓	✓	✓		
Traditional Owners	✓	✓	✓	✓	✓	✓
Host landholders	✓	✓	✓		✓	✓

Stakeholder group	Information provision			Engagement mechanism		
	Website/ hotline/ email	Media release	Project Information Sheet	Project briefing	Personal meetings/ interview	Community information and feedback session
Neighbouring / proximal landholders	✓	✓	✓		✓	✓
Community groups	✓	✓	✓	✓	✓	✓
Wider community	✓	✓	✓			✓
Local businesses and service providers	✓	✓	✓	✓	✓	✓
Local media	✓	✓	✓			

3.4 Instrument Toolkit development

Umwelt will draft and prepare instruments, materials, and tools to be used to support engagement in accordance with this CSEP. These will be prepared following RES's confirmation of the Implementation Plan (**Section 5**). Instruments to support engagement activities will include the following:

- **Run sheets and/or agendas** – for formal project briefings for RES to hold with government agencies, and for key stakeholder meetings that the Umwelt team may facilitate in the local or regional area.
- **Interview discussion guides** – a suite of discussion guides including a standard discussion template/survey question set, as well as targeted guides for specific stakeholder or community groups/specific activities such as talking points and questions for community information sessions. Each guide will likely include up to 5 open ended questions.
- **Project information sheets** – to communicate key information visually and concisely on the project to the wider community, to be distributed in multiple means such as a resident mail drop, online format, and in hard-copy at community information/drop-in sessions
- **Record-keeping templates** – including interview note taking templates and meeting minutes templates
- **Stakeholder engagement database** – set up of template in an Excel spreadsheet.

3.5 Discussion topics for engagement

The NSW Government's *Large-Scale Solar Energy Guideline* (2018) requires that proponents address the following components of their stakeholder engagement program through the appropriate project planning and development phases:

- To engage with host and proximal landholders about the proposed project area, the likely infrastructure layout, access routes and potential location of ancillary infrastructure
- To listen to the community's concerns and suggestions
- To discuss potential noise impacts, the potential visual impacts and landscape changes, the proposed siting, and potential alternatives

- To discuss issues for landholder agreement if the project is approved, including siting, access, compensation, responsibility for decommissioning and rehabilitation.

3.5.1 Round 1 (Scoping Phase)

It is expected by DPIE under the draft SIA Guideline (2020) that the scoping phase will include community engagement activities to understand likely stakeholder issues and concerns to inform the SIA.

Engagement in Phase 1 provides an opportunity to gauge and understand stakeholder issues/concerns/interests in relation to the project; to identify possible strategies/solutions to address topics raised; and to then use this information gathered to proactively inform project design and planning.

In this regard, the SIA process calls for likely social impacts to be appropriately scoped and identified through consultation with potentially affected people and mitigation and enhancement options preliminarily explored.

To satisfy the SIA requirements, proposed engagement activities to be undertaken in this phase need to be targeted at identifying perceived issues of concern and/or positive impacts in relation to the proposed project, to be further considered in the subsequent EIS/SIA phase.

Questions to include in the interview discussion guides appropriate to this phase will include topics relating to:

- Awareness and attitudes towards solar and wind farm development (and other industry development in the local or regional area)
- Awareness and public perceptions of RES
- Potential issues, concerns or interests related to the proposed Projects
- Community values, identity, local needs, and aspirations
- Areas of value and use within and near the Projects
- Sense of community in the area
- Potential sensitive receivers and/or vulnerable community groups
- Preferred engagement mechanisms, frequency, and content.

The information gathered in the scoping phase will be used to inform EIS preparation, by focusing the assessment on key social and environmental issues/impacts of importance to key stakeholder groups; and by identifying project design refinements that may seek to avoid or minimise negative impacts and/or enhance positive impacts. This is an important process in the project development process and records of changes made will be kept and discussed in the EIS.

3.5.2 Round 2 (EIS preparation)

Proposed engagement activities undertaken during Round 2 will be focused on responding to questions, concerns or issues that arose during the scoping phase with environmental issues resolved and project refinements to be integrated where possible as a result. Further, this round of engagement is an opportunity to further explore and validate the social issues, interests, and impacts, that were identified during the scoping phase. The EIS program and preliminary insights or findings gathered through the various technical studies will also be further communicated during this phase, to assist in gathering feedback from key stakeholders and the wider community, on predicted project impacts (positive and negative).

Therefore, engagement in this phase, to inform the EIS and SIA will focus on:

- Assessment of perceived issues, impacts and opportunities associated with the project
- Existing capacity of local service provision and projected future demand
- Responding to, addressing, and integrating environmental and project design matters raised during the scoping phase
- Potential strategies to address and respond to issues, impacts and opportunities
- Enhancement measures to improve collaboration between RES and community or stakeholders, including potential community investment and benefit-sharing opportunities.

3.6 Record-keeping and stakeholder database management

A dedicated Stakeholder Database will be established in Microsoft Excel format to track stakeholders and related information throughout the Project's planning and approvals phase. This will include an Engagement Register, whereby team members will record the contact details of stakeholders, summaries of each consultation or contact with the stakeholder, and any actions that may arise from these meetings. This database will be established by Umwelt on an interactive and accessible platform (such as SharePoint) and maintained through the life of the Project by RES, as required.

Outcomes and records of each engagement activity will be documented by the team member(s) in attendance. The Engagement Register will be maintained throughout the delivery of the Implementation Plan to ensure consistent tracking and recording of all community or stakeholder engagement activities and outcomes. Information to be recorded includes:

- Activity details (including stakeholder engaged, attendees, time and place, mechanism used)
- Discussion points
- Summary of key outcomes, including any actions
- Stakeholder contact details
- Preferences for future engagement.

Following completion of engagement for each phase, outcomes and data obtained will be collated and analysed to identify key impact themes and impact prioritisation. Identified issues or impacts may also be mapped to identify any spatial patterns.

Outcomes of the engagement undertaken will then be summarised in the Scoping Report, the Social Impact Scoping Report and Social Impact Assessment Report respectively. Relevant EIS technical studies will also receive consultation outcomes as relevant to inform their respective study outcomes. Furthermore, the EIS will consider project design refinements based on stakeholder and community consultation outcomes.

3.7 Complaints handling and issue tracking

RES will maintain a Project complaint register throughout each phase of the Projects. This will be informed through activities and outcomes of this CSEP in addition to future engagement activities related to the Projects.

4 Key Messages

4.1 Overview

As the project evolves RES will develop and adapt key messages for communication to targeted stakeholders and communities. Key messages will be developed in line with the principles and commitments outlined within **Section 1** of this document and will be developed to share information related to the Project and its current activities, as well as to respond to stakeholder issues, concerns and interests as identified throughout development of the Project.

Key messages will be developed to address the following key objectives:

- Provide clear and consistent information relating to the two projects
- Afford meaningful participation and avoid misinformation and confusion
- Clearly articulate aspects of the project.

For the EIS process, key messages (for external purposes) have been developed and refined, around four message categories. These will be used to inform the engagement strategy and associated material development.

1. **The proponent** – who is RES?
2. **The Project** – what is Tallawang and Barneys Reef? Including details on the site and plans, 'quick facts' and profiles of the proposed Projects
3. **The process** – the development planning and EIS process, including community consultation and key milestones
4. **Impacts and opportunities** – key issues in relation to the Project i.e., social and environmental effects, stakeholder concerns, opportunities and benefits, engagement preferences and information requirements.

Notably, the unique positioning of the two 'sibling' projects should be carefully considered (i.e. Tallawang and Barneys Reef are adjacent projects, however with two differing technologies). A streamlined planning and development process between the Projects can lead to maximised community benefit, parallel community and stakeholder engagement programs and a coordinated approach to planning with local stakeholders.

4.2 Who is the proponent - Renewable Energy Systems (RES)?

- RES is the world's largest independent renewable energy company active in both onshore and offshore wind, solar, energy storage and transmission and distribution. RES has delivered over 20GW of renewable energy projects across the globe and supports an operational asset portfolio of 7GW worldwide.
- RES is a family-run business, committed to the principles of openness and transparency across its projects and their operations.
- RES is committed to understanding each project's local setting and ensuring that this knowledge informs the development of its projects. Further, RES understands that each and every project is different and that integrating local considerations is essential in developing successful projects for both the community and RES.

- RES has stood at the forefront of renewable energy for nearly 40 years and was established in Australia in 2004 with a proud history. This includes the successful development of the Taralga Wind Farm (NSW), Ararat Wind Farm (VIC), Murra Warra Wind Farm (VIC) and Emerald Solar Farm (QLD).
- Currently the construction and asset management portfolio under management by RES in Australia is over 1.1GW.
- RES has a pipeline of wind farm and solar projects across Australia and has recently gained approval for a number of renewable assets; solar projects include Springdale (NSW) and Avonlie (NSW), and wind projects include Dulacca (QLD) and Twin Creek (SA).
- Our specialist wind, solar and storage teams both in Australia and globally includes highly experienced professionals in development, technical, engineering, construction, network / grid connection and commercial areas of development and construction.
- RES offers development and construction of wind and solar projects, as well as ongoing asset management for both RES and third-party assets.

4.3 What are the Projects - Tallawang Solar Farm and Barneys Reef Wind Farm?

- The proposed Tallawang Solar Farm comprises a solar farm and battery storage infrastructure located in the locality of Tallawang, NSW, approximately 8 kilometres northwest of Gulgong.
- RES has identified the two potential sites within the Central-West Orana REZ as having the potential to host both a solar farm and a wind farm, each with associated battery storage facilities.
- If developed, the Tallawang Solar Farm would involve the construction, operation, and maintenance of a 390MW solar farm. The solar farm's energy storage infrastructure would have a capacity of up to 780 MWh. The potential site for the Tallawang Solar Farm is 920-hectares and would generate enough electricity to supply approximately 250,000 NSW homes. This site is located approximately 8km north-west of Gulgong town and is hosted by two properties.
- The potential site of the Barneys Reef Wind Farm would generate enough electricity to supply approximately 265,000 NSW homes. This site is located approximately 15km north of Gulgong and is in the Mid-Western Regional Council LGA. The site is approximately 18km from Dunedoo town which in the neighbouring Warrumbungle Shire Council area. The Barneys Reef Wind Farm will have a capacity of approximately 340MW and at this early stage of planning would likely include around 60 wind turbines. The proposed site extends over 13 free-hold properties of which RES has recently formed agreements with the host landholders. Infrastructure on the site may include two substations and transmission connections, which will enable connection of the proposed turbines to the Central-West Orana REZ Transmission Corridor. This is expected to traverse the northern end of the Project Area.
- The Projects would contribute to Australia's domestic and international commitments of renewable energy development, including NSW's target of 50% renewable energy by 2030.
- To enable the transfer of energy, other relevant infrastructure will be positioned across the site, such as inverters, transformers, and battery units, as well as a number of temporary construction and permanent operational and maintenance buildings.
- Access to the two sites for construction would likely be from either the Golden Highway or Castlereagh Highway and associated local roads. The access plans will be developed throughout the EIS technical assessments.

4.3.1 Reasons for site selection

RES has selected the two sites for the following reasons:

- The Central-West Orana REZ has been identified by the NSW Government as a priority area to target for renewable energy development due to its natural resources that suit solar and wind farm development
- The collaboration from host landholders
- Through the REZ, the sites would be proximate to future grid connection and associated electricity infrastructure
- The sites are deliberately located in areas at a distance from towns to minimise impact on local populations
- The locality has strong road transportation links, including connectivity to the Port of Newcastle
- The sites are understood to require relatively minimal earthworks and vegetation clearance as well as for Tallawang, an area that is not visible on approaches to town.

4.3.2 The Central-West Orana Renewable Energy Zone (REZ)

- The Projects are located adjacent to each other, within the Mid-West Regional Council area and area also both located within the Central West-Orana Renewable Energy Zone (REZ).
- The NSW Government has identified five Renewable Energy Zones (REZ) within the State. This REZ is one such, that are anticipated to play a vital role in delivering affordable, reliable energy generation to help replace the State's existing power stations as they come to their scheduled end of life. Other zones are located in the New England, South-West, Hunter-Central Coast and Illawarra regions.
- A REZ can be understood as a modern-day power station. They intend to combine renewable energy generation such as wind, solar and battery storage solutions. By connecting multiple generators in the same location, REZs can better support the delivery of cheap, reliable, clean electricity to homes and businesses in NSW.
- The Central-West Orana REZ in particular, is anticipated to open up a significant pipeline of large-scale renewable energy projects that will support private investment and provide flow on economic benefits to communities in these regions.

4.4 What is the approvals process?

- RES is currently assessing the feasibility of both the Tallawang Solar Farm Project and the Barneys Reef Wind Farm Project. As part of this, RES is undertaking preliminary environmental and social assessments to understand both the impacts and opportunities the Projects presents to local communities and the environment. Through this, RES is wanting to seek feedback on the Projects from key stakeholders and local community members. This information, along with impacts identified through community and stakeholder consultation will feed into the Scoping Report in quarter 2 (Q2) of 2021 and thereafter into the Environmental Impact Statement which accompanies the planning application for the Projects.
- The Projects will each require development consent under the NSW Environmental Planning and Assessment Act 1979 (EP&A Act).
- Two separate development applications accompanied by two detailed Environmental Impact Statements (EIS) would be prepared and submitted to the NSW Department of Planning, Industry and Environment

(DPIE). Two separate EISs are required under the EP&A Act, as well as RES wanting to allow a better evaluation of risks and opportunities for the two different technologies.

- The EIS would include a Social Impact Assessment, in addition to several specialist studies including assessments on effects to visual changes, noise, biodiversity, heritage, water, traffic, hazard and risk, aircraft risk, soils and land use.
- Comprehensive assessments will be completed to identify the potential impacts of both Projects, including the cumulative impacts that they may have collectively, and how best to manage these impacts.
- The detailed design of each Project will be informed by these studies to ensure that impacts are mitigated as far as reasonably and feasibly possible.
- The two SIAs will include a community engagement program and be prepared considering the NSW DPIE's draft SIA Guideline (2020). This engagement program will be conducted concurrently for both projects and will include consultation with interested parties, affected communities and local representative groups. The outcomes of the engagement program will inform the development of both EISs.
- The first round of community engagement will be in March – April 2021. The second round is expected in mid-2021. People can also learn about the Projects through the two project websites. Further, people can raise queries, receive feedback, and generally express an interest in being informed via the dedicated hotline and email.

4.5 What are the impacts and opportunities?

- RES is committed to building strong local relationships with key stakeholders and communities as part of their early planning and understands the importance of ensuring local participation and community input, to achieve positive local and regional community benefits.
- RES is committed to working with the community and key stakeholders to identify environmental and social impacts associated with their proposed projects and to explore relevant strategies to mitigate negative impacts and enhance positive impacts. RES will work to ensure that through the EIS, SIA and associated community engagement process, that community issues are well understood and are addressed, where possible, in project design and planning.
- RES recognises that the siting of the projects may result in community and landscape impacts (both positive and negative) and that impacts may be experienced differently across stakeholder groups.
- RES is committed to the development of community benefit sharing programs (e.g. neighbourhood benefit programs, the development of community grant funds and community co-investment/co-ownership programs) in line with the Clean Energy Guidelines for Benefit Sharing (2019), in the areas where their projects are located.
- Across the global portfolio, RES is committed to supporting community schemes that demonstrate lasting impact and legacy.
- For the Tallawang Solar Farm and Barneys Reef Wind Farm, RES plans to work with the local community to explore benefit sharing options and target areas for contribution and support through an integrated approach bringing together the two projects. This would support the maximising of local benefits through the potential combining of funds across the two projects, which could bring about greater positive social outcomes. This approach would be informed by community engagement undertaken for the two projects, and would focus on meeting local community needs and aspirations.
- Across the global portfolio, RES is committed to supporting community schemes that demonstrate lasting impact and legacy.

- RES is committed to local employment and procurement, where possible, and would work to ensure this commitment is reflected in the policies of the nominated Engineering, Procurement and Construction (EPC) contractor.
- Where possible, construction workers for the two projects would be accommodated in towns within 1-hour of the site. The findings of the SIA will support RES in further assessing potential accommodation options to reduce related project impacts.
- For the Tallawang Solar Farm and Barneys Reef Wind Farm, RES hopes to work with local property owners to allow for the ongoing use of the land for grazing or other existing agricultural activities. In this way, RES is interested to explore and promote new partnerships and models for complementary solar and wind energy with food production and agriculture, working with local farmers to support the co-existence of land uses.

5 Implementation Plan

An overview of planned engagement activities and associated staging across the planning and approvals phase for both the Tallawang Solar Farm and Barneys Reef Wind Farm is outlined in Table 5 and Table 6Error! Reference source not found..

5.1 Scoping Phase

Table 5 Scoping Phase (Round 1 Engagement)

Item	Detail	Responsibility		Attendees	Timing
		Umwelt	RES		
Preparation					
Community and Stakeholder Engagement Plan		Prepare	Review and approve	N/A	REV 01: 19/03/2021 REV 02: 24/03/2021
Project description		Review and integrate	Prepare	N/A	19/03/2021
Key messages and set up script		Prepare	Review and approve	N/A	Draft 19/03/2021 Final 24/03/2021
Project Information Sheet (1)	To be distributed via mail drop around 2 x Projects	Prepare, design, and distribute	Provide critical inputs, e.g., contact details to include, review and approve	N/A	Draft 22/03/2021 Final 26/03/2021 Print w/c 29/03/2021 Distribute via Aus Post April 2021 - TBC
Instrument Toolkit (Round 1)		Prepare and design	Review, approve and distribute	N/A	Draft 24/03/2021 Final 26/03/2021
Meetings schedules and set up	Including compilation of landholder (host and proximal) contact sheet	Organise	Approve	N/A	By 26/03/2021
Webpage/hotline/email address development and set up	Separate URL for Tallawang to Barneys Reef	Provide input into content development	Prepare, set up and manage	N/A	26/03/2021
Delivery					

Item	Detail	Responsibility		Attendees	Timing
		Umwelt	RES		
Project briefing: DPIE, Tallawang Solar Farm	Online (MS Teams/Zoom)	Organise and attend	Confirm timing, prepare presentation/material, conduct and attend	RES Umwelt	TBC – April or May 2021
Project briefing: DPIE, Barneys Reef Wind Farm	Online (MS Teams/Zoom)	Organise and attend	Confirm timing, prepare presentation/material, conduct and attend	RES Umwelt	TBC – April or May 2021
Website launch			Prepare, set up and manage	RES	End March 2021
Aboriginal consultation advertisement	Regulation to advertise notice for Aboriginal cultural heritage study in local newspaper	Prepare and organise with local paper	Review and approve		End March 2021
Project briefing: Mid-Western Regional Council	F2F in Mudgee, with General Manager and/or Mayor	Organise, receive meeting minutes/outcomes	Prepare presentation/material, conduct, and attend	RES	End March 2021
Project briefing: Warrumbungle Shire Council	F2F in Coonabarabran, with General Manager and/or Mayor and/or Councillors *Note this is the neighbouring council	Organise, receive meeting minutes/outcomes	Prepare presentation/material, conduct, and attend	RES	End March 2021
Host landholder SIA meetings (2 x Tallawang; 13 x Barneys Reef)	Email out questions and invite for phone meeting	Co-facilitate or receive/record outcomes	Organise and facilitate responses	RES Umwelt	April 2021
Proximal landholder meetings	F2F; requirement of visual assessment for BR to consult with residents	Identify landholders, supply contact sheet, provide	Organise, conduct and attend	RES	End March 2021

Item	Detail	Responsibility		Attendees	Timing
		Umwelt	RES		
	within a 4.5km radius of the Project footprint; can suggest neighbour group meetings, can follow up with phone meeting; acknowledge cropping season may affect people's availability	questions/discussion guide, receive outcomes			
Media statement		Provide input	Provide input, review, and approve, contact local media		TBC – April 2021
Agency Project briefings	TfNSW; LLS; SES; RFS; BCD; Heritage; mix of F2F and online	Supply agency list and contact details, provide input into presentation, attend as required, receive and review outcomes,	Prepare presentation, conduct and attend, record outcomes	RES Umwelt	April 2021
Mudgee Local Aboriginal Land Council	F2F or phone; timing to align with Aboriginal cultural heritage notification	Organise, attend, record outcomes	Conduct and attend	RES Umwelt	April 2021
Chamber of Commerce (Mudgee and Gulgong)	F2F	Organise, attend, conduct, record outcomes	Receive and review outcomes	Umwelt	April 2021
NSW Farmers Association – Mudgee Branch	F2F	Supply run sheet, organise, receive outcomes	Conduct and attend	RES	April 2021

Item	Detail	Responsibility		Attendees	Timing
		Umwelt	RES		
Community groups	F2F	Organise, facilitate, record outcomes	Attend as required	Umwelt	April 2021
Local environmental groups	F2F	Organise, facilitate, record outcomes	Attend as required	Umwelt	April 2021
Local accommodation providers	F2F or phone	Organise, conduct, attend, record outcomes	Review outcomes	Umwelt	April 2021
Community Information and Feedback Session (1)		Review outcomes and integrate into SIA and EIS	Prepare posters, storyboards and run sheet, book venue, advertise and organise, conduct, attend, record outcomes		TBC
Outcomes					
Stakeholder Database and Engagement Register	Document all Round 1 engagement activities and outcomes	Compile records and undertake outcomes analysis and summaries	Review		Ongoing - April 2021

5.2 EIS Preparation Phase

The detailed Implementation Plan for Round 2 Engagement will be developed following the completion of Round 1 and in alignment with the issuance of SEARs. The table below is for template purposes only.

Table 6 EIS Preparation Phase (Round 2 Engagement)

Item	Detail	Responsibility		Attendees	Timing
		Umwelt	RES		
Community and Stakeholder Engagement Plan					TBC
Project Information Sheet (2)					TBC
Community Information and Feedback Session (2)					TBC
Community Information and Feedback Session (3)					TBC
Project Information Sheet (3)					TBC

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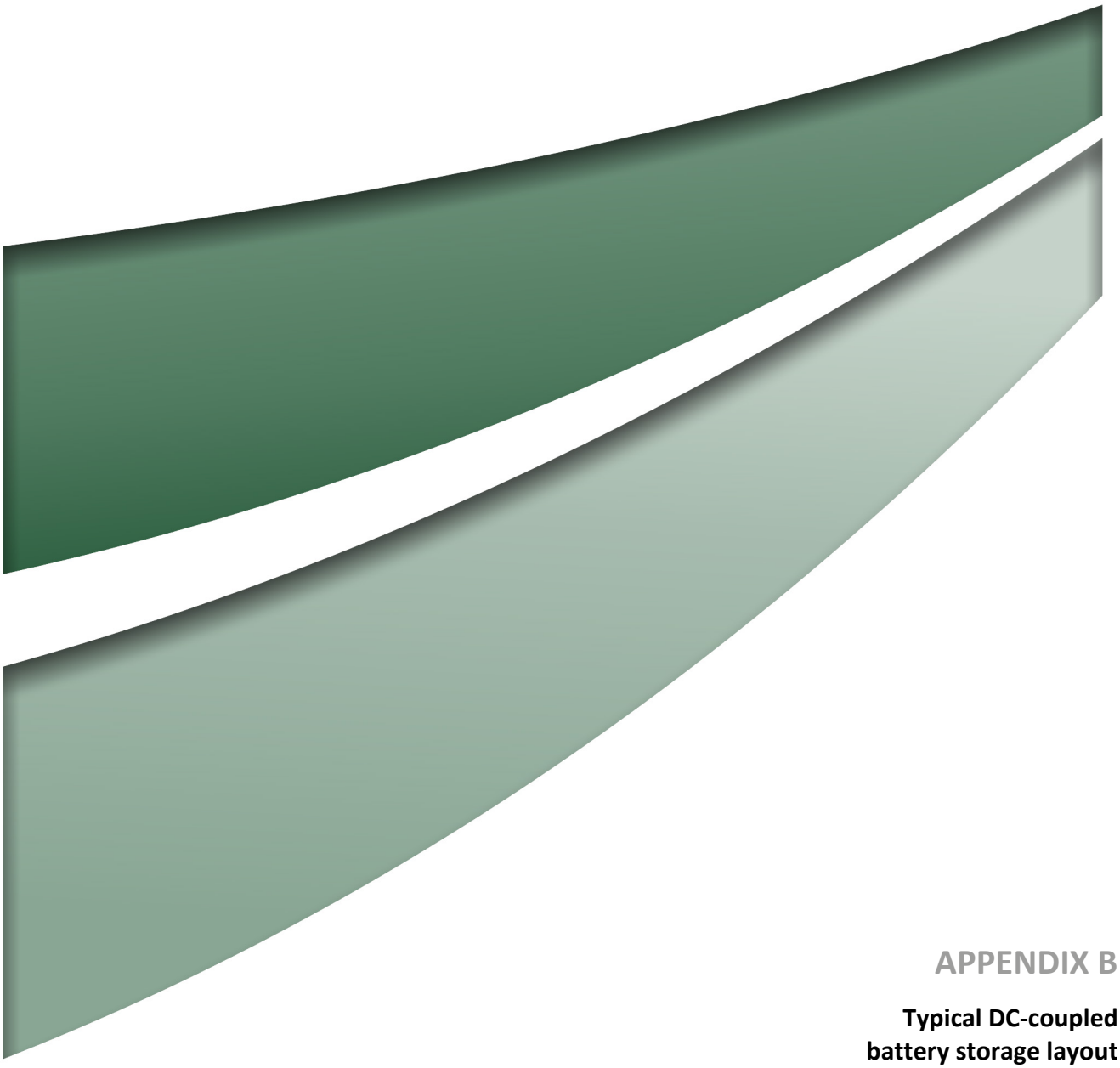
Environmental & Social Consultants

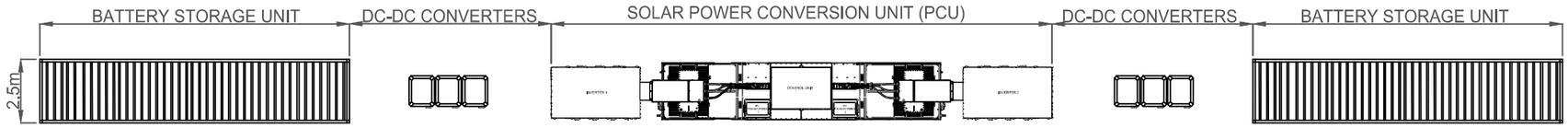
Newcastle | Perth | Canberra | Brisbane | Sydney | Orange

T| 1300 793 267 E| info@umwelt.com.au www.umwelt.com.au

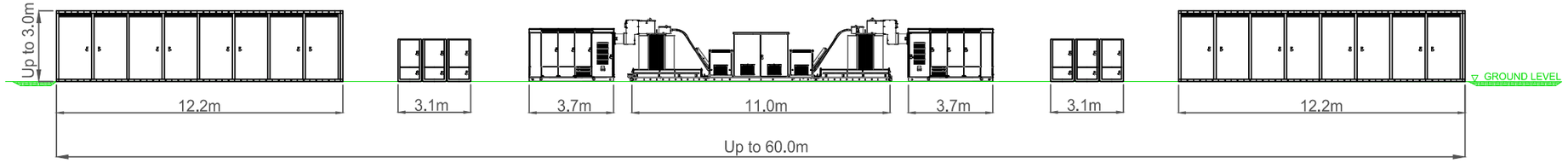


APPENDIX B

Typical DC-coupled battery storage layout



PLAN VIEW



ELEVATION

SOLAR FARM

TECHNICAL FIGURE 10

TYPICAL DC-DC BATTERY STORAGE LAYOUT

NOTES:

1. ALL DIMENSIONS ARE APPROXIMATE, SUBJECT TO DETAILED DESIGN AND WILL BE GENERALLY IN ACCORDANCE WITH THIS DRAWING;
2. DOOR POSITIONS ARE INDICATIVE AND SUBJECT TO DETAILED DESIGN;
3. MAY BE FOUNDED ON CONCRETE OR STEEL PILES, OR A CONCRETE RAFT FOUNDATION DEPENDING ON GROUND CONDITIONS;
4. FINISHES WILL NOT UNDULY CONTRAST WITH SURROUNDINGS.

INFRA DWG	N/A	APPD DATE	24-09-18
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

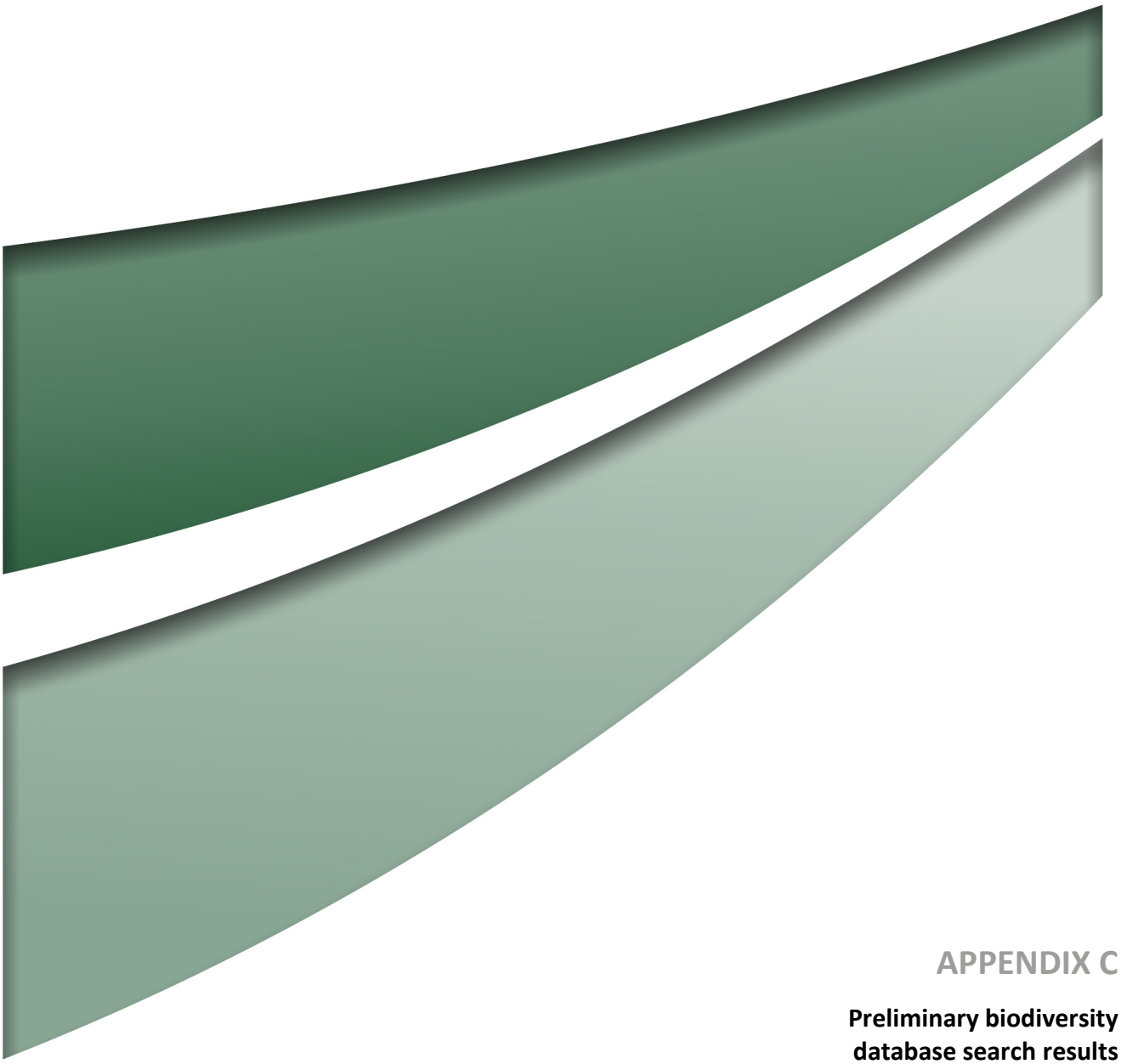
DRAWING NUMBER
03707D4006-01

SCALE - N.T.S **A3**

COORDS
N/A

PLANNING PERMIT APPLICATION

SUITE 4, LEVEL 1
760 PACIFIC HWY
CHATSWOOD, NSW 2067
TEL: +61 (0)2 8440 7400
EMAIL: info-australia@res-group.com



APPENDIX C

Preliminary biodiversity database search results

Appendix C – Spatial Search Results

Scientific Name	Common Name	NSW Status*	Commonwealth Status*
Aves			
Anthochaera phrygia	Regent Honeyeater	CE	CE
Burhinus grallarius	Bush Stone-curlew	E	
Callocephalon fimbriatum	Gang-gang Cockatoo	V	
Calyptorhynchus lathami	Glossy Black-Cockatoo	V	
Haliaeetus leucogaster	White-bellied Sea-Eagle	V	
Haliaeetus leucogaster	White-bellied Sea-Eagle	V	
Hieraaetus morphnoides	Little Eagle	V	
Hirundapus caudacutus	White-throated Needletail		V
Lathamus discolor	Swift Parrot	E	CE
Lophoictinia isura	Square-tailed Kite	V	
Ninox connivens	Barking Owl	V	
Ninox strenua	Powerful Owl	V	
Ninox strenua	Powerful Owl	V	
Numenius madagascariensis	Eastern Curlew		CE
Polytelis swainsonii	Superb Parrot	V	V
Tyto novaehollandiae	Masked Owl	v	
Mammalia			
Chalinolobus dwyeri	Large-eared Pied Bat	V	V
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	
Chalinolobus dwyeri	Large-eared Pied Bat	V	V
Petrogale penicillata	Brush-tailed Rock-wallaby	E	V
Phascolarctos cinereus	Koala	V	V
Pteropus poliocephalus	Grey-headed Flying-fox	V	V
Reptilia			
Aprasia parapulchella	Pink-tailed Legless Lizard	V	V
Delma impar	Striped Legless Lizard	V	V
Flora			
Acacia ausfeldii	Ausfeld's Wattle	V	
Acacia ausfeldii	Ausfeld's Wattle	V	
Androcalva procumbens			V
Dichanthium setosum	Bluegrass	V	V
Diuris tricolor	Pine Donkey Orchid	V	
Euphrasia arguta		CE	CE
Homoranthus darwinioides		V	V
Leucochrysum albicans subsp. Tricolor	Hoary Sunray		E
Prasophyllum petilum	Tarengo Leek Orchid	E	E
Swainsona recta	Small Purple-pea	E	E
Swainsona sericea	Silky Swainson-pea	V	
Thesium australe	Austral toadflax	V	V
Tylophora linearis		V	E
Zieria ingramii	Keith's Zieria	E	E

* V = Vulnerable, E = Endangered, CE = Critically Endangered

Australian Government

Department of Agriculture, Water and the Environment

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

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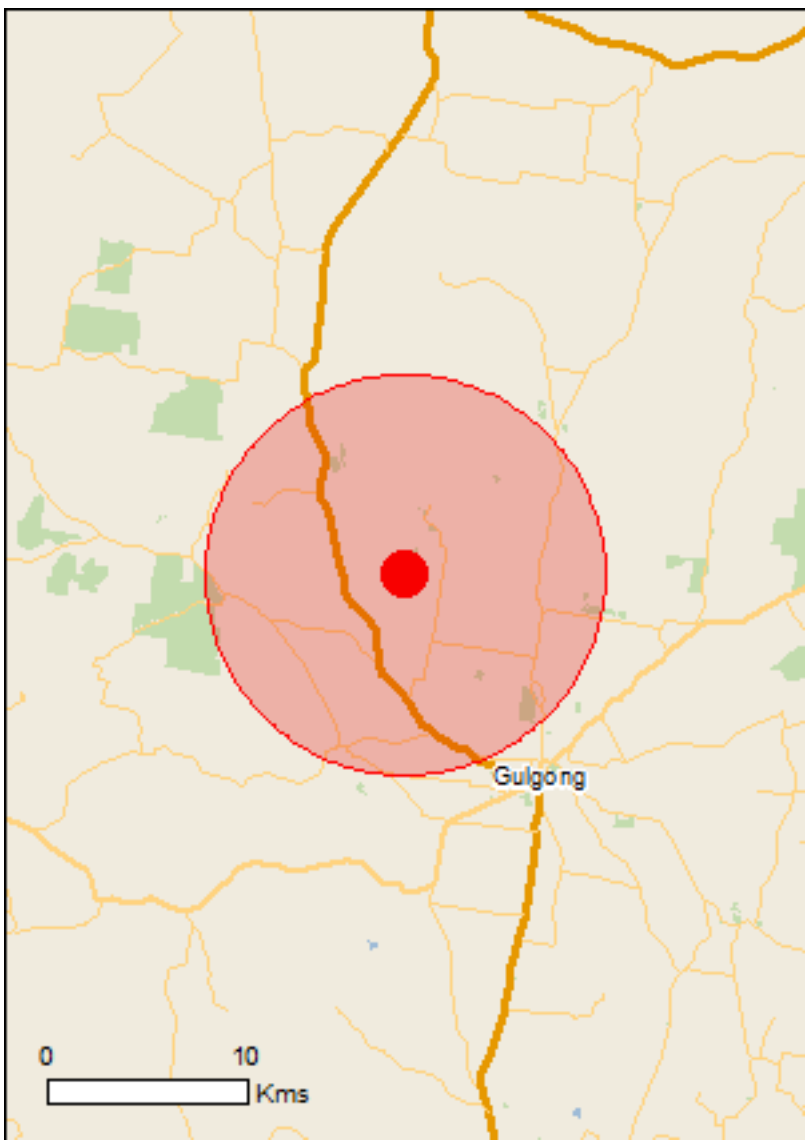
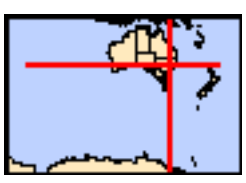


Coordinates

Buffer: 10.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	32
Listed Migratory Species:	11

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	18
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	1
Regional Forest Agreements:	None
Invasive Species:	28
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[Resource Information]
Name	Proximity
Banrock station wetland complex	800 - 900km upstream
Riverland	800 - 900km upstream
The coorong, and lakes alexandrina and albert wetland	900 - 1000km upstream
The macquarie marshes	200 - 300km upstream

Listed Threatened Ecological Communities		[Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community likely to occur within area
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered	Community may occur within area
Weeping Myall Woodlands	Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Fish		
Galaxias rostratus Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat may occur within area
Maccullochella macquariensis Trout Cod [26171]	Endangered	Species or species habitat may occur within area
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat known to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat likely to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Plants		
Androcalva procumbens [87153]	Vulnerable	Species or species habitat may occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
Homoranthus darwinioides [12974]	Vulnerable	Species or species habitat may occur within area
Leucochrysum albicans subsp. tricolor Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat likely to occur within area
Prasophyllum petilum Tarengo Leek Orchid [55144]	Endangered	Species or species habitat may occur within area
Prasophyllum sp. Wybong (C.Phelps ORG 5269) a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area
Swainsona recta Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat may occur within area
Tylophora linearis [55231]	Endangered	Species or species habitat may occur within area
Reptiles		
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat likely to occur within area
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area

Name	Threatened	Type of Presence
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land - Commonwealth Trading Bank of Australia

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans		
Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within

Name	Threatened	Type of Presence
		area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Yarrobil	NSW

Invasive Species	[Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Pycnonotus jocosus Red-whiskered Bulbul [631]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Plants		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-32.2852 149.4722

Acknowledgements

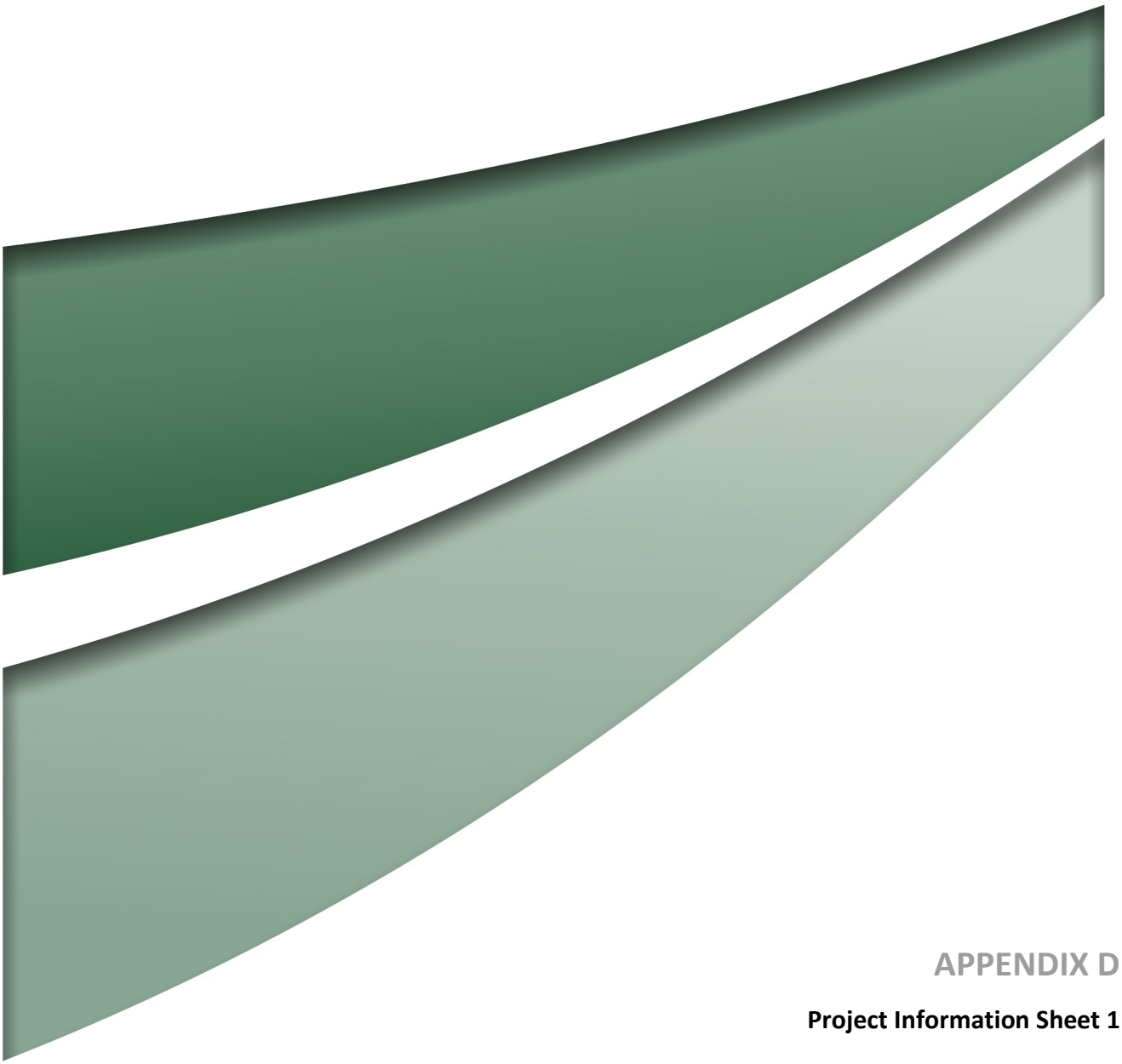
This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

Department of Agriculture Water and the Environment
GPO Box 858
Canberra City ACT 2601 Australia
+61 2 6274 1111



APPENDIX D

Project Information Sheet 1

Tallawang Solar Farm and Barneys Reef Wind Farm

Information Sheet No.1
APRIL 2021

INTRODUCTION

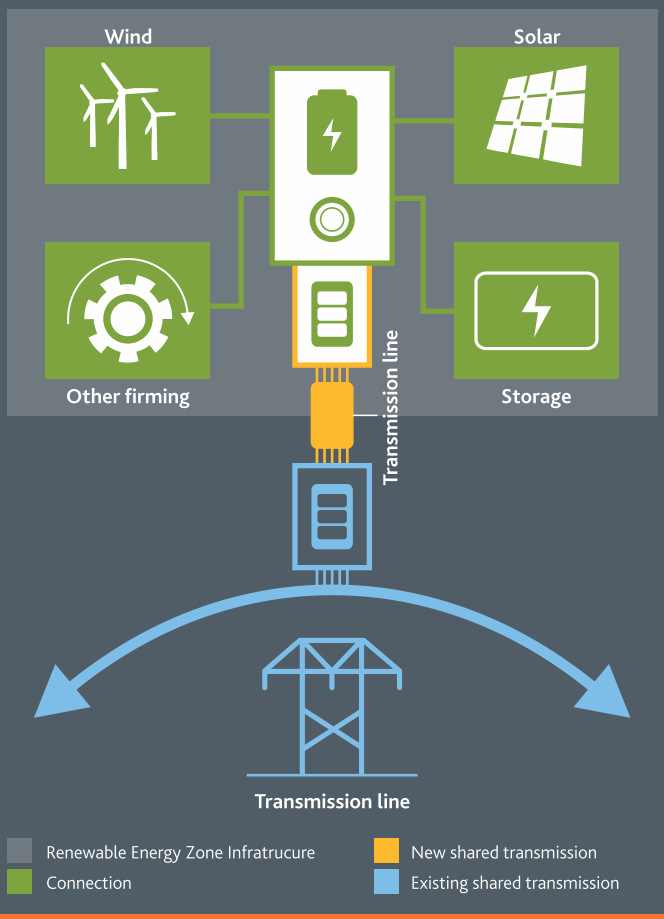
This Information Sheet introduces two renewable energy projects proposed in the Central West region of NSW by RES Australia - **Tallawang Solar Farm Project** and **Barneys Reef Wind Farm Project** (referred to as the Projects).

The Projects are located adjacent to each other, within the Mid-West Regional Council area, which is located within the Central-West Orana Renewable Energy Zone (REZ). This zone is one of a number of renewable energy zones across NSW that are anticipated to play a vital role in delivering affordable, reliable energy generation to help replace the State's existing power stations as they come to their scheduled end of life. Other zones are located in the New England, South-West, Hunter-Central Coast and Illawarra regions.

RES is currently assessing the feasibility of both **Tallawang Solar Farm Project** and **Barneys Reef Wind Farm Project**, and is undertaking some preliminary environmental studies. As part of this, RES is seeking feedback on the Projects from key stakeholders and local community members.

The Central-West Orana, New England, and South-West REZs, in particular, are anticipated to open up a significant pipeline of large-scale renewable energy projects that will support private investment and provide flow on economic benefits to communities in these regions.

Source: NSW Government; https://energy.nsw.gov.au/renewables/renewable-energy-zone



WHO IS RES?

RES Australia (RES) is the world's largest independent renewable energy company active in both onshore and offshore wind, solar, energy storage and transmission and distribution.

A family-owned business at the forefront of the industry for nearly 40 years, RES has delivered over 20GW of renewable energy projects across the globe and supports an operational asset portfolio of 7GW worldwide.

Since 2004, RES has a proud history of working with communities to develop projects in Australia, including the Taralga Wind Farm (NSW), Ararat Wind Farm (VIC), Murra Warra Wind Farm stage 1 and 2 (VIC), Emerald Solar Farm (QLD), the construction and asset management of the Lal Lal Wind Farm (VIC), and the Columboola Solar Farm (QLD). Currently the construction and asset management portfolio under management by RES in Australia is over 1.1GW.

To achieve positive local and regional community outcomes, RES is committed to building strong relationships with key stakeholders and local communities. At the early development stage, emphasis is put on encouraging local participation and community input.

power for good

TALLAWANG SOLAR FARM

The proposed **Tallawang Solar Farm** comprises a solar farm and battery storage infrastructure located in the locality of Tallawang, NSW, approximately eight kilometres northwest of Gulgong.

If developed, Tallawang Solar Farm would involve the construction, operation, and maintenance of a 500MW solar farm on approximately 920-hectares. The energy storage infrastructure would have a capacity of up to 780 Mwh.

The solar farm would be connected to the Central West REZ, and feed into the National Electricity Market. It is anticipated that the solar farm could generate enough electricity to supply approximately 250,000 homes in NSW.

To date, RES has been meeting with landholders, with an agreement currently in place with the host landholders of the site. This has facilitated the progression of a number of environmental and social impact studies to determine the suitability of the site and locality to host the Project and progress its planning.

The Project would utilise bi-facial solar modules to generate energy from both the front and rear of the panels. Panels are likely be a maximum of 5 metres high and 10 metres apart, arranged in rows. This distance between rows allows for ongoing use of the land for grazing or existing agricultural activities.

To enable the transfer of energy, other relevant infrastructure will be positioned across the site, such as inverters, transformers, battery units etc., as well as a number of temporary (during construction) and permanent operational and maintenance buildings.

FIGURE 1

Project Locality

BARNEYS REEF WIND FARM

The proposed **Barneys Reef Wind Farm** is located approximately 15 kilometres north of Gulgong, in the Mid-Western Regional Council LGA. The town of Dunedoo is located approximately 18 km to the north of the site within the neighbouring Warrumbungle Shire Council area.

Barneys Reef Wind Farm will have a capacity of approximately 340MW and at this early stage of planning would likely include around 60 wind turbines. The proposed site extends over 13 free-hold properties of which RES has recently formed agreements with the host landholders. Barneys Reef Wind Farm is also expected to generate enough electricity to supply around 265,000 NSW homes.

Infrastructure on the site, may include two substations and transmission connections, which would enable connection of the proposed turbines to the Central-West Orana REZ Transmission Corridor. It is expected this would traverse the northern end of the Project Area.

As is the case with Tallawang Solar Farm, RES is currently undertaking a number of preliminary environmental and social studies to inform the detailed project design and feasibility for the proposed wind farm. These studies would support an improved understanding of the impacts and benefits of the Project on surrounding communities and on the local environment.

WHAT ASSESSMENTS WILL BE REQUIRED?

Both projects are currently in their scoping phase, prior to lodgment of two separate scoping reports with the NSW Department of Planning, Industry and Environment (DPIE). It is anticipated that these would be lodged in the second quarter (Q2) of 2021. On reviewing the scoping documents, DPIE will provide their project specific assessment requirements (SEARs), and preparation of two detailed Environmental Impact Statements (EIS) will commence. Both projects would be assessed under the State Significant Development planning process, an outline of which is presented in **Figure 2**.

As part of this process, RES has recently appointed Umwelt Environmental and Social Consultants, to commence a number of social and environmental assessment studies to inform the scoping phase, including a Social Impact Assessment (SIA). Other studies to be undertaken through the EIS processes for the projects include:

- **Noise**
- **Visual**
- **Biodiversity**
- **Heritage**
- **Water**
- **Traffic**
- **Social and Community**
- **Soils**
- **Land Use**
- **Hazard and Risk**
- **Cumulative impacts**

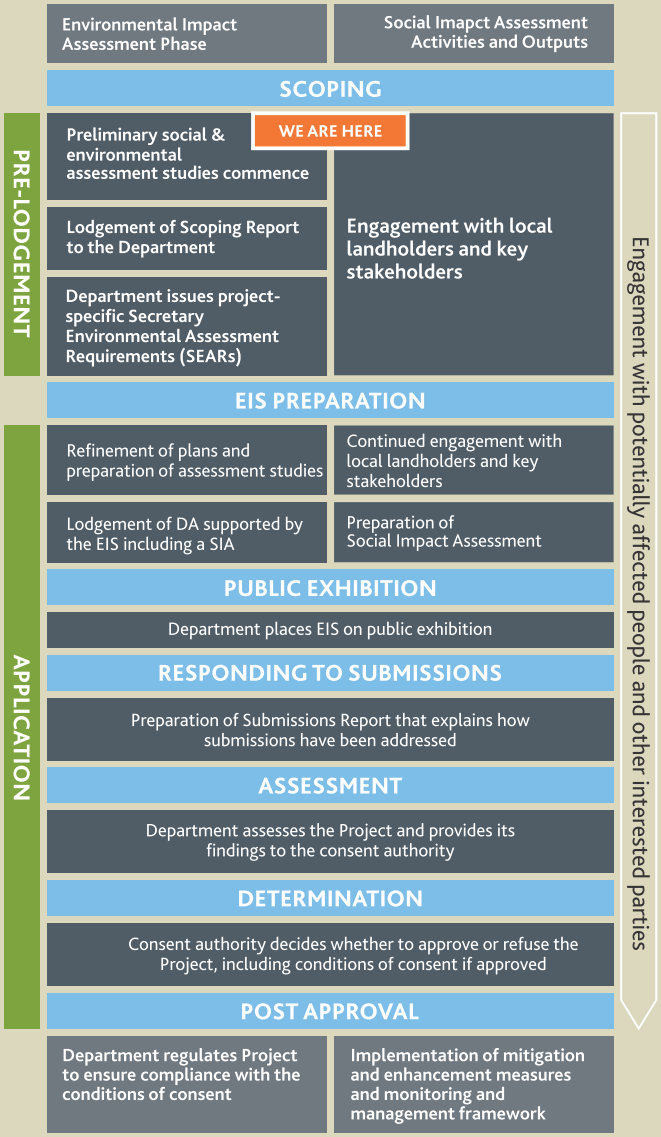


FIGURE 2: Phases of environmental impact assessment and key social impact assessment activities and outputs

The detailed design and feasibility of each Project will be informed by the outcomes of these studies, to ensure that negative impacts are identified, addressed and appropriately mitigated, and that the positive impacts and benefits of the Projects are enhanced and maximised.

It is anticipated that should the Projects move to the next phase of the planning process, the EIS and SIA for Tallawang Solar Farm Project would be lodged in the third quarter (Q3) of 2021. The EIS and SIA for Barneys Reef Wind Farm Project is intended to be lodged in the fourth quarter (Q4) of 2021.

The SIA for both Tallawang Solar Farm and Barneys Reef Wind Farm will include a comprehensive community engagement program, prepared in accordance with the NSW DPIE's new draft SIA guideline (2020).
Given their proximity to each other and the overlapping stakeholders, the engagement program will be conducted concurrently for both Projects. This program will provide opportunities for those with an interest in the project to present their views and will assist RES in obtaining an understanding of local community values, needs, aspirations and impacts associated with the Projects.

HOW CAN I BE INVOLVED?

RES, together with members of the Umwelt team, will be contacting relevant local and state government agencies, local landholders, local businesses, service providers, and community group representatives as part of the scoping phase, to better understand community views and perspectives. Outcomes of this scoping phase engagement will be summarised and shared with the community in a second Project Information Sheet and will be available on the website. Once complete, community members will have further opportunity to view the outcomes of the assessment studies, and have input to planning and development as the Projects progress. We value your input, so if you would like to receive further information on both or either of the projects and/or would like to make a time to meet with members of the respective project teams, please contact us on the details below.

We look forward to your participation and involvement.

FURTHER INFORMATION

Free phone number: **1800 118 737**

Barneys Reef Wind Farm Project:
www.barneysreef-renewableenergy.com

Tallwang Solar Farm Project:
www.tallawang-renewableenergy.com

If you would like to have your say, to get involved in community engagement activities, or just want to know more about the Projects please contact RES using the contact details below.

Chris Gosling
Senior Project Development Manager
RES Australia Pty Limited

Email: info@barneysreef-renewableenergy.com
info@tallawang-renewableenergy.com

umwelt
Environmental & Social Consultants

Newcastle | Perth | Canberra | Brisbane | Sydney | Orange

T| 1300 793 267 E| info@umwelt.com.au www.umwelt.com.au