
Appendix K

Social impact assessment

Birriwa Solar Modification

Social Impact Assessment

Prepared for ACEN Australia Pty Ltd

June 2025

Birriwa Solar Modification

Social Impact Assessment

ACEN Australia Pty Ltd

E240117 RP#12

June 2025

Version	Date	Prepared by	Reviewed by	Comments
V1	30 May 2025	B. Dent C. Wilkins	S. McCrea R. Dodd N. Armit	Draft for client review
V2	4 June 2025	B. Dent C. Wilkins	R. Dodd	Final

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1 Introduction

1.1 Background

ACEN Australia Pty Ltd (ACEN) has approval to develop the Birriwa Solar and Battery Project, a large scale solar photovoltaic (PV) electricity generation facility along with battery storage and associated infrastructure, including the construction of a temporary accommodation facility (the project). The solar component of the project will have an indicative capacity of around 600 megawatts (MW) and will include a centralised battery energy storage system (BESS) of up to 600 MW for a two-hour duration (1,200 MWh). The project (SSD-29508870) was approved on 16 August 2024 by the NSW Independent Planning Commission, with development consent conditions.

The project site is approximately 15 kilometres (km) south-east of Dunedoo, in the Central-West Orana (CWO) region of New South Wales (NSW), in the localities of Birriwa and Merotherie (refer to Figure 1.1). It is situated within the Mid-Western Regional Local Government Area (LGA). Part of the approved transport access route to the project site via the Castlereagh Highway is situated within the Warrumbungle Shire LGA. The project is within the Central West Orana (CWO) Renewable Energy Zone (REZ).

ACEN is seeking approval to modify development consent SSD-29508870 to include additional lots for solar and battery associated infrastructure, an alternative access route and upgrade to part of the existing Birriwa Bus Route South, an increase in capacity of the approved temporary accommodation facility, and an increase in the storage capacity and duration of the BESS.

A modification report has been prepared to support the application to modify SSD-29508870, which incorporates this social impact assessment (SIA).

1.2 Approved project

The approved project comprises the following key components:

- installation of approximately 1 million solar PV panels and associated mounting infrastructure
- a BESS with a capacity of up to 600 MW and a storage duration of up to 2 hours (1,200 MWh)
- an on-site substation with a connection voltage of up to 500 kilovolts (kV)
- electrical collection and conversion systems, including inverter and transformer units, switchyard, control room and staff car park
- underground and aboveground cables
- an operational infrastructure area, including demountable and permanent offices, amenities, and equipment sheds
- internal access roads
- a temporary construction compound (during construction and decommissioning phases)
- an access route upgrade from Castlereagh Highway to the project site via Barneys Reef Road and Birriwa Bus Route South
- a temporary accommodation facility to provide accommodation for up to 500 construction workers during the construction phase of the project

- an emergency access track providing alternative access to the accommodation facility, suitable for emergency vehicles.

Figure 1.2 presents the approved project facilities and infrastructure while Figure 1.3 illustrates the proposed modifications to the project.

1.3 Modification overview

ACEN is seeking to modify SSD-29508870 under to section 4.55(2) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to:

- Increase the project area and development footprint to include three additional lots (Lot 11/DP 750755, Lot 40/DP 750755, Lot 60/DP 750755) and the remaining part of Lot 34/DP 750755, allowing for additional land to be used for solar generation, BESS, and associated ancillary infrastructure, as needed. Modifying the project area and development footprint across additional neighbouring lots will enable flexibility in design and construction, optimisation of the solar array layout, and will allow sufficient space for maintenance.
- Increase the storage capacity and duration of the BESS from up to 600 MW for a 2-hour duration up to 900 MW for a 4-hour duration. The additional capacity will allow the project to increase its energy storage potential, providing additional firming support and greater network system strength.
- Increase the project area and development footprint to allow for an upgrade to part of the existing Birriwa Bus Route South Road from the Golden Highway via Merotherie Road, for use as an alternative access route. It also includes a public road crossing along Birriwa Bus Route South to allow construction and operation traffic to access different areas of the project with limited impacts on Birriwa Bus Route South. This upgrade will enable access to the project for the purpose of constructing and operating the approved temporary accommodation facility, construction, operation and maintenance of the BESS. Oversize over-mass vehicles will continue to access the project area, via the approved primary access point (i.e. Castlereagh Highway-Barneys Reef Road-Birriwa Bus Route South).
- Increase the approved project's accommodation facility capacity from 500 workers to 650 workers, within the approved accommodation footprint (up to an additional 150 workers will reside at the accommodation facility in peak construction periods).
- Amend the schedule of land to include three additional neighbouring lots.
- Increase the total number of daily vehicle movements to and from the site during pre-construction and construction, from 120 to 156 daily heavy vehicle trips, split between the approved access via Barneys Reef Road and the proposed alternative access via Merotherie Road. Correction of wording errors in the consent conditions from "vehicle movements" to "vehicle trips".

1.4 Terminology

The following terms are used throughout this modification report:

- **The project:** The project as approved by development consent SSD-29508870, comprising the solar and battery project as well as public road upgrades, as assessed in the *Birriwa Solar and Battery Project Environmental Impact Statement* (EIS) (EMM, 2022b) and the accommodation facility assessed in the *Amendment Report* (EMM, 2023).
- **The project area:** The area to which SSD-29508870 applies (approximately 1,535 hectares (ha)). Note, this area is not the development footprint and hence is not the maximum extent of ground disturbing work.

- **The modification area:** The three additional lots to be added to the schedule of lands (Lot 11/DP 750755, Lot 40/DP 750755, Lot 60/DP 750755) and the remaining part of Lot 34/DP 750755, comprising additional areas for infrastructure associated with the solar generation and general operation of the project (approximately 257 ha), and the area of potential impact associated with the upgrade of Birriwa Bus Route South Road as an alternative access route to the project area from the Golden Highway via Merotherie Road.
- **The modification development footprint:** This is the impact footprint (approximately 216 ha) associated with the proposed modification, within the modification area. It is the area to be developed within land where ACEN holds landholder agreements. All operational components of the modification will be within the modification development footprint. The modification development footprint is the outcome of the iterative process which led to excluding certain areas of environmental or social constraint.
- **Project development footprint:** The maximum extent of ground disturbing work (impact footprint) associated with construction and operation of the project, comprising approximately 1,413 ha of land, including the development footprint associated with the approved project (approximately 1,197 ha), and the modification development footprint (approximately 216 ha).
- **Associated residence:** A dwelling whose owners have entered into a land agreement with ACEN for the project. Residences identified with an 'A' are associated residences. Note, there are no additional associated residences as a result of the proposed modification.
- **Non-associated residence:** A dwelling whose owners do not have an agreement with ACEN for the project. Residences identified with an 'R' are non-associated.

1.5 Purpose of report and assessment approach

EMM Consulting Pty Ltd (EMM) has prepared this Social Impact Assessment (SIA) of the proposed modification on behalf of ACEN. This SIA identifies and assesses impacts and benefits to address potential changes to social conditions as a result of the proposed modification, when compared with social impacts and benefits identified in the *Birriwa Solar and Battery Project Environmental Impact Statement (EIS)* (EMM, 2022b) and the accommodation facility as assessed in the *Amendment Report* (EMM, 2023).

There are no specific Secretary's Environmental Assessment Requirements (SEARs) attached to the modification; however, the SEARs for the EIS have been considered, and are provided in Table 1.1. Relevant government assessment requirements, guidelines, and policies, include:

- the *Social Impact Assessment Guideline for State Significant Projects (SIA Guideline 2023)* (DPE, 2023a)
- the *Technical Supplement: Social Impact Assessment Guideline for State significant Projects (SIA Technical Supplement 2023)* (DPE, 2023b)
- the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPE, 2022a).

Table 1.1 SEARs requirements – Social

Reference	Requirements	Section addressed
The EIS must include an assessment of the social and economic impacts in accordance with <i>Social Impact Assessment Guideline</i> (DPIE, July 2021) and benefits of the project for the region and the State as a whole, including:		
1.	consideration of any increase in demand for community infrastructure services	Section 7
2.	assessment of impact on agricultural production on the site and region	Section 7

1.6 Authorship and SIA declarations

The authorship and SIA declarations for this report are provided in the following sections.

i Authorship

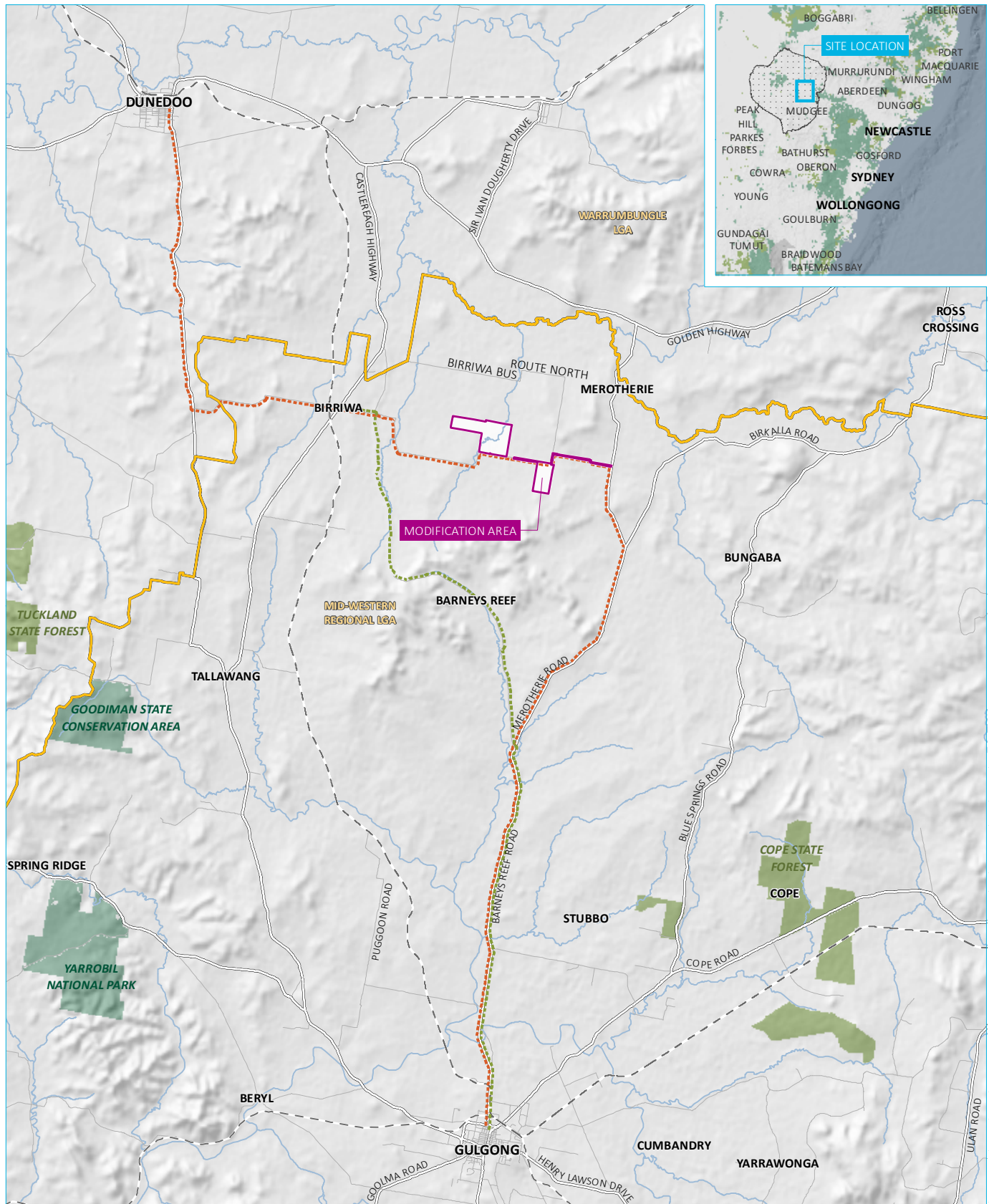
This report has been prepared by a suitably qualified and experienced lead author, Chris Mahoney and co-author Breannan Dent, consistent with SIA Guideline 2023 requirements. All contributors hold appropriate qualifications and have the relevant experience to carry out the SIA for this project. The curriculum vitae for each author is provided in Attachment A.

ii SIA declarations

The authors declare that this SIA report:

- was completed in June 2025
- has been prepared in accordance with the SIA Guideline 2023
- contains all reasonably available project information relevant to the SIA
- as far as EMM is aware, contains information that is neither false nor misleading.

Assumptions and limitations of this report are outlined in Section 3.3.



Source: EMM (2025); DCSSS (2023, 2024); GA (2011); ASGC (2006); ACEN (2025)

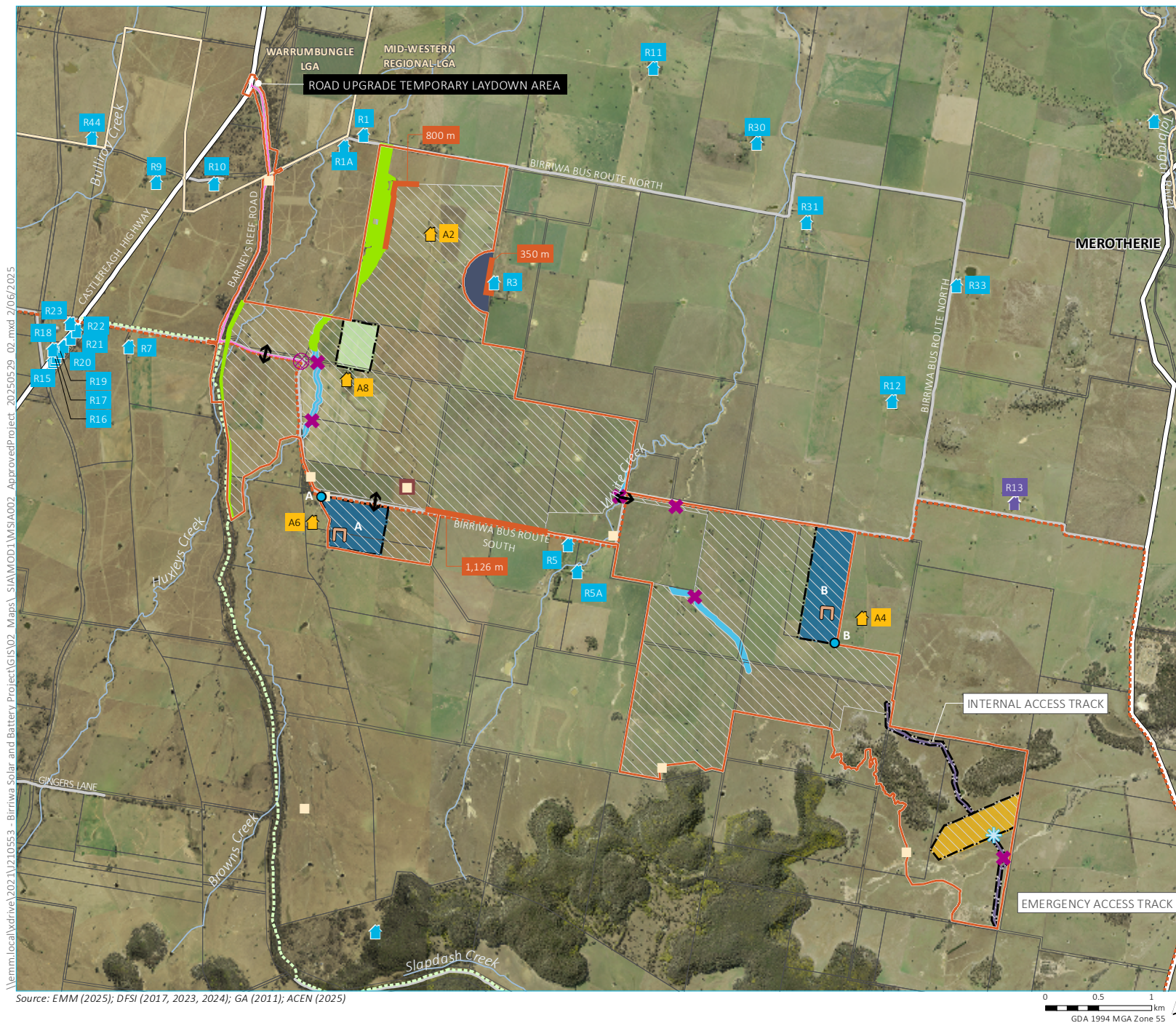
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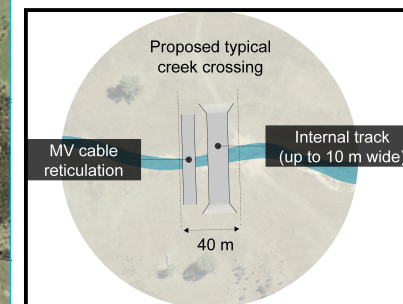
- Modification area
- Existing environment
- Rail line
- Major road
- Minor road
- Watercourse
- Local government area
- Central West Orana Renewable Energy Zone (see inset)
- NPWS reserve
- State forest
- Central West Cycle (CWC) Trail
- CWC main route - Gulgong to Dunedoo
- CWC alternate route - Slap Dash Creek side trail

Regional context

Birriwa Solar Farm Modification
Social Impact Assessment
Figure 1.1

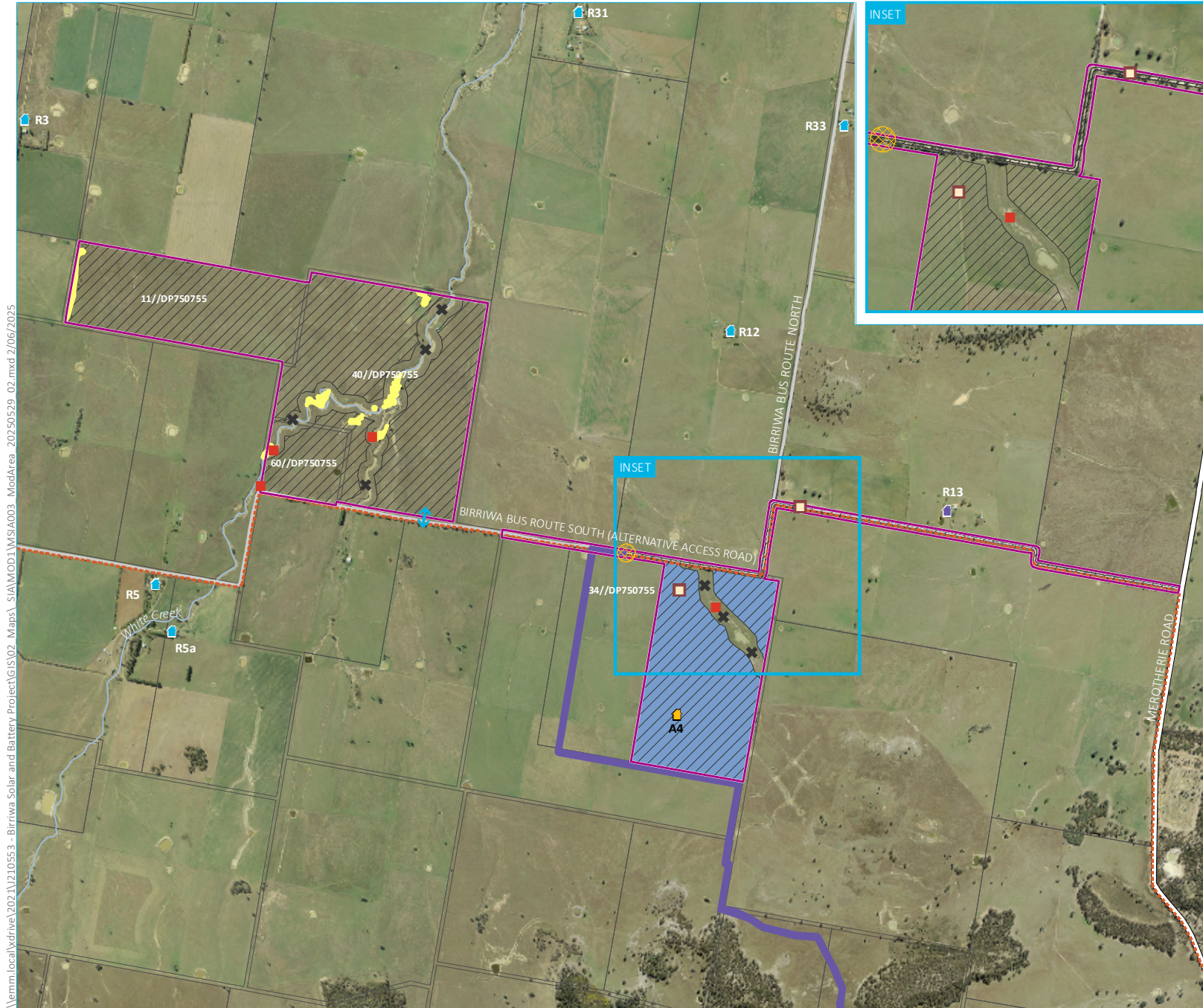


- KEY**
- Project layout**
- Project area
 - Development footprint
 - Road upgrade corridor
 - Restricted development area
 - Vegetation to be retained
 - Potential public road crossing location
 - Potential creek crossing point (refer to inset below for indicative design)
 - Connection point (option A or B)
 - Indicative noise wall location
 - Solar panel setback
 - Landscape screen planting
 - Project access point
 - Project emergency access point
 - Proposed operational infrastructure area including substation, operational facility and BESS (option A or B)
 - Accommodation facility
 - Temporary construction compound
- Existing environment**
- Dwelling not associated with the project
 - Dwelling associated with the project
 - Dwelling not associated with the project (EnergyCo building)
 - Aboriginal heritage site (to be salvaged)
 - Aboriginal heritage site (to be avoided)
 - Major road
 - Minor road
 - Named watercourse
 - Cadastral boundary
 - Local government area boundary
- Central West Cycle (CWC) Trail**
- CWC main route - Gulgong to Dunedoo
 - CWC alternate route - Slapdash Creek side trail



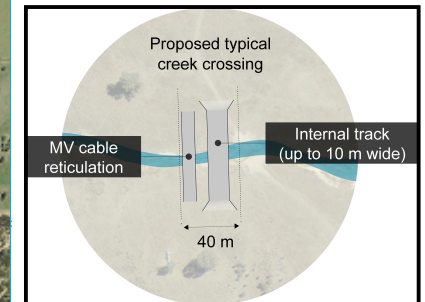
Approved project

Birriwa Solar Farm Modification
Social Impact Assessment
Figure 1.2



KEY

- Modification area
 - Modification development footprint
 - Vegetation to be retained
 - Secondary access point
 - Internal access track
 - Proposed extension for operational infrastructure area including substation, operational facility and BESS
 - Aboriginal heritage site (to be avoided)
 - Aboriginal heritage site (to be salvaged/managed)
 - ↕ Potential public road crossing location
 - ✕ Potential creek crossing point (refer to inset below)
- Existing environment
- 🏠 Dwelling not associated with the project
 - 🏠 Dwelling associated with the project
 - 🏠 Dwelling not associated with the project (EnergyCo building)
 - Major road
 - Minor road
 - Named watercourse
 - Central West Cycle (CWC) Trail main route - Gulgong to Dunedoo
 - Cadastral boundary



Modification area

Birriwa Solar Farm Modification
Social Impact Assessment
Figure 1.3

2 Description of the modifications

2.1 Overview of the modification

A comparison between the approved project and the proposed modification is provided in Table 2.1 below.

Table 2.1 Comparison of approved project and proposed modification

Element	Approved project	Proposed modification
Project area	The project area associated with the approved project is 1,535 ha as shown in Appendix B of the Amendment Report. Note, the approved project area not the development footprint and hence is not the maximum extent of ground disturbing work.	The proposed modification area is approximately 257 ha. The total project area inclusive of the modification would therefore be 1,792 ha.
Project development footprint (impact footprint)	The total project development footprint (impact footprint) of the approved project is 1,197 ha as shown in Appendix B of the Amendment Report.	The modification development footprint associated with the modification area is approximately 216 ha. The total project development area would therefore be 1,413 ha.
Targeted capacity (solar)	600 MW (AC)	No change.
Targeted capacity (BESS)	600 MW for 2 hours	Increase in BESS capacity to approximately 900 MW for a four-hour duration.
PV modules	It is anticipated that there will be approximately 1.2 to 1.4 million photovoltaic (PV) modules (solar panels).	No change.
Power conversion units (PCU)	It is anticipated that approximately 80 to 160 power conversion units will be required.	No change.
BESS design	The BESS will be adjacent to the substation within one of two proposed operational infrastructure areas, as shown in Figure 1.3 (area A or area B), and will be housed within either outdoor standalone racks, shipping containers or dedicated use buildings.	The BESS options will be as follows: <ul style="list-style-type: none"> Option 1: 900 MW (4-hour duration) at Lot 34/DP750755 (inclusive of area B) Option 2: 600 MW (4-hour duration) at area A, and 300 MW (four-hour duration) at Lot 34/DP750755 (inclusive of area B). The operational infrastructure areas are shown in Figure 1.3.
Substation	Two substation location were assessed. The 600 MW transformer yard is proposed to be up to approximately 200 m by 100 m; and the switch yard is proposed to be up to approximately 150 m by 100 m. No component will be higher than the transmission tower, which is expected to be approximately 30 m high.	No change.
Grid connection	The project will connect to the proposed CWO REZ Merotherie Energy Hub being developed by the Energy Corporation of NSW (EnergyCo) and currently being constructed by the Network Operator.	No change.
Construction duration	The anticipated period of construction for the project is approximately 28 months.	No change.
Construction workforce	The project will require a peak construction workforce of up to 500 people (assuming that the peak construction activities of the solar and BESS infrastructure will not occur at the same time).	It is proposed to increase the peak workforce from 500 to 650 (i.e. an increase of 150 workers).

Element	Approved project	Proposed modification
Construction traffic	A maximum of 120 vehicle 'movements' per day.	There is an error in the wording of the consent conditions - "movements" should be changed to "trips". An increase in the maximum daily heavy vehicle trips from 120 to 156.
Construction workforce accommodation	The non-local construction workforce will be accommodated in a temporary accommodation facility that will accommodate up to approximately 500 construction workers.	It is proposed to increase the accommodation facility capacity from 500 workers to 650 workers (up to an additional 150 workers will reside at the accommodation facility in peak construction periods). No change to the accommodation development footprint.
Construction staging	<p>The construction of the project will generally include the following overlapping stages (some of which may be undertaken in parallel):</p> <ol style="list-style-type: none"> 1. Establishment of internal access tracks for the project. 2. Public road upgrades including public road crossings for the project. 3. Site establishment including security fencing, and bushfire asset protection zones for the project. 4. Minor earthworks including levelling for the prefabricated demountable units for the accommodation facility. 5. Construction of the accommodation facility including delivery and construction of prefabricated demountable units, and utility infrastructure for a capacity of approximately 500 people. 6. Construction of the project, including construction of temporary ancillary facilities, the PV modules, BESS and substation installation. <p>Commissioning and testing of the project.</p>	Minor amendments to the project staging with the public road upgrade of Birriwa Bus Route South and public road crossings occurring first, followed by the establishment of the internal access track for the project.
Site access	<p>The primary vehicle access route will be via the Castlereagh Highway, Barneys Reef Road and Birriwa Bus Route South. The primary project access point on Birriwa Bus Route South will provide access to the development footprint of the project.</p> <p>An emergency access track will be constructed south of the accommodation facility infrastructure area, suitable for emergency vehicles.</p>	An alternative access route along Birriwa Bus Route South via Merotherie Road, providing access for the construction and operation of the accommodation facility, construction, operation and maintenance of the BESS, and access for operation and maintenance by the Network Operator to EnergyCo's CSO REZ infrastructure located adjacent to and within the project area.
Operational lifespan	<p>The operational lifespan of the project will be in the order of 30 years, unless the solar farm is re-powered at the end of the PV modules' technical life.</p> <p>The BESS's operating life is likely to be 20 years.</p> <p>The accommodation facility will be operational for the duration of the solar and battery project construction phase, which is anticipated to be approximately 28 months.</p>	No change.
Operational workforce	The project will contribute to the employment of up to 20 employees during operation.	No change.
Operational traffic	Regular light vehicle access will be required throughout operations; however, is not anticipated to exceed approximately 20 light vehicles per day. Heavy vehicles may be required occasionally for replacing larger components of project infrastructure including inverters, transformers or components of the BESS.	No change.

2.2 Changes to the project area and development footprint

The approved project area and development footprint will be extended to accommodate the modification area and modification development footprint (refer to Figure 1.3). The majority of the modification area is freehold land owned by private land holders. Birriwa Bus Route South Road via Merotherie Road is managed by Mid-Western Regional Council. The additional lot and DPs associated with the project modification and their land ownership status are provided in Table 2.2. As also shown on Figure 1.3, the project area is proposed to be extended across the remaining portion of Lot 34/DP750755, which is already listed in the schedule of lands for the approved project.

Table 2.2 Additions to the schedule of land

Lot / DP	Land owner
11 / DP750755	Private
40 / DP750755	Private
60 / DP750755	Private
34/ DP450755	Private (existing landowner of the approved project)
Birriwa Bus Route South (via Merotherie Road)	Mid-Western Regional Council

The land within the modification area and modification development footprint will form part of the project area and development footprint and will allow for additional space to accommodate the proposed solar and battery project, optimising construction and operational activities.

The proposed modification will increase the extent of:

- the project area by approximately 257 ha to 1,792 ha (an increase of approximately 17%)
- the development footprint by approximately 216 ha to 1,413 ha (an increase of approximately 18%).

2.3 Alternative access road

As of May 2025, the Network Operator is upgrading parts of Merotherie Road between the Golden Highway and the proposed Merotherie Hub as part of the approved CWO REZ Transmission Project (SSI-48323210). Key intersections along the Golden Highway, including with Merotherie Road, are also currently being upgraded as part of the Port2REZ project. Completion of the upgrades are expected in late 2025/early 2026. These upgrades present an opportunity for the project to use the future upgraded road as an alternative access route to the project site. As such, ACEN propose to develop an alternative access to the project area from the Golden Highway via Merotherie Road and Birriwa Bus Route South.

The approved project's primary vehicle access point will remain the same, as described in section 6.2.3 of the Amendment Report (i.e. via Barneys Reef Road onto Birriwa Bus Route South). The alternative access on Birriwa Bus Route South via Merotherie Road will be used for:

- construction and operation of the accommodation facility
- construction, operation and maintenance of the approved BESS
- access for operation and maintenance by the Network Operator to EnergyCo's CWO REZ infrastructure located adjacent to and within the project area.

To enable the use of this alternative access via Merotherie Road, an upgrade to part of the existing Birriwa Bus Route South Road will be required to facilitate heavy and light vehicle access during construction and operation of the accommodation facility, construction and operation of the BESS project, as well as access for operation and maintenance of EnergyCo's infrastructure. The proposed alternative access is shown in Figure 1.3.

2.4 Increase in the capacity of the temporary accommodation facility

The accommodation facility as described in the Amendment Report was to cater for a workforce of 500 with additional capacity to expand to 1,000 if required to support other ACEN's projects in the region. ACEN proposes to increase the approved project's temporary accommodation facility capacity from 500 workers to 650 workers, within the approved accommodation footprint (up to an additional 150 workers will reside at the accommodation facility in peak construction periods).

3 Methodology

3.1 Introduction

This section presents the methodology which guided completion of the SIA. The methodology was tailored to update the SIA prepared for the EIS (EMM, 2022a) and Addendum SIA (2023a) to consider the modification to the project in accordance with the SIA Guideline 2023 (DPE, 2023a).

3.2 Methodological phases

The phases of the SIA methodology are described below.

i Phase 1

a EIS and Addendum SIA review

An initial undertaking was the review of the SIA (EMM 2022) and Addendum SIA (EMM, 2023). The review of the EIS SIA and Addendum SIA considered:

- potentially affected stakeholders and the feedback generated through engagement processes
- the SIA study area
- identified negative and positive social impacts of the project
- the level of assessment required to address potential social impacts associated with the modification.

While this modification is addressed in terms of its potential combined effects on the community when considered alongside the approved project, the above considerations provide an understanding of the cumulative context, social locality and existing concerns and opportunities.

ii Phase 2

a Stage 1 – Social baseline study

The Addendum SIA baseline was reviewed and found to be representative of the existing social environment. Key sources of information included data from the Australian Bureau of Statistics (ABS), State government agencies, and local government; published literature and social research; government policies and plans; and documents relating to similar projects. A wide range of social indicators were reviewed and assessed for relevance. Data not relevant to assessing the modification has either been summarised or addressed through references to the previous SIA.

The social baseline study provides a community profile, including a socio-economic profile and analysis of demographic data, social infrastructure and capacity and housing and accommodation indicators within the SIA study area. The social baseline defines characteristics of the existing social environment against which potential social impacts are identified and assessed. The social baseline study is presented in Section 5 and Attachment C.

b Stage 2 – Engagement informing the SIA

A key source of information drawn upon was feedback generated through engagement with potentially affected stakeholders and communities through the EIS, SIA and Addendum SIA. The modification SIA has undertaken further engagement to understand the effects of the proposed modification. The specific activities and outcomes of the SIA engagement are presented Section 6.

Information obtained through project engagement has been used to:

- validate baseline data and assumptions
- identify/test impacts that may be experienced by nearby neighbours and the broader community
- confirm identified impacts and determine potential management strategies
- provide stakeholders an opportunity to express any concerns.

c Stage 3 – Data analysis and review

Qualitative and quantitative data collected during project engagement and previous SIAs prepared for the project were analysed to identify community values, strengths and vulnerabilities. Data analysis provided a basis to identify and develop social impact themes and confirm potential social impacts.

d Stage 4 – Social impact identification

Social impacts and benefits relevant to the modification were identified by suitably qualified social scientists (see Attachment A) through analysis of the nature of project activities, baseline characteristics of potentially affected communities and feedback generated through engagement processes.

The SIA Guideline 2023 (DPE, 2023a) notes that social impacts may be tangible and intangible or may manifest as rational or justified fears or aspirations. As such, valid social impacts are both perceived and actual. Social impacts may be experienced differently by individuals within a community or by different communities and at different times/stages of the project.

Identification and assessment of impacts was undertaken with consideration of the impact categories outlined in the SIA Guideline 2023 (DPE, 2023a), which refers to potential changes to people's:

- **way of life:** how people live, work, play and interact
- **community:** its composition, cohesion, character, how it operates and sense of place
- **accessibility:** how infrastructure provided by public, private or not for profit organisations, including services and facilities is accessed and used
- **culture:** shared beliefs, customs, values and stories, and connection to Country, land, places, waterways and buildings, both Aboriginal and non-Aboriginal
- **health and wellbeing:** physical and mental health
- **surroundings:** access to and use of ecosystem, public safety and security, access to and use of natural and built environment, aesthetic value and/or amenity
- **livelihoods:** how people sustain themselves through employment or business, their capacity to do so and whether disadvantage is experienced
- **decision-making systems:** extent community can have a say in decisions that affect their lives, access to complaint, remedy, and grievance mechanisms.

Identification of the project's potential social impacts and benefits was completed through several complementary approaches, helping to triangulate the findings and confirm accuracy. These approaches included consideration of:

- environmental impacts – review of similar projects in the area, as well as available academic and grey literature to identify potential impacts
- local plans and policies – findings from the review aided to contextualise and understand the local priorities as well as to identify local values
- the existing social environment – demographic and social analysis in the form of a social baseline study
- feedback generated through stakeholder engagement including findings from SIA engagement along with ongoing broader engagement on the project
- findings from other technical disciplines that contributed to the modification report (EMM 2025) were reviewed and potential social impacts defined. These included:
 - Traffic and transport
 - Soils, erosion and agriculture
 - Landscape and visual
 - Bushfire
 - Noise and vibration
 - Biodiversity
- consideration of cumulative impacts – review of documentation from other existing and planned projects in the study area.

A full description of each social impact is provided in Section 7 of this report.

e [Stage 5 – Social risk and assessment](#)

This stage involved the systematic identification and assessment of each social impact to predict the nature and scale of impacts associated with construction and operation of the modified project. The adopted risk-based approach assesses the consequence and likelihood of potential positive and negative social impacts with and without mitigation. The social risk assessment matrix, including the assessment framework, is provided in the SIA Guideline Technical Supplement (DPE, 2023b) and presented in Figure 3.1.

Magnitude level					
	1	2	3	4	5
Likelihood level	Minimal	Minor	Moderate	Major	Transformational
A Almost certain	Low	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

Source: SIA Guideline Technical Supplement, Social impact significance matrix

Figure 3.1 Social impact significance matrix

f Stage 6 – Social impact mitigation and management

The mitigation and management framework considers all potential social impacts and benefits to allow for the identification of:

- required impact mitigation measures
- enhancement measures to maximise potential benefits
- partnership opportunities to manage broader, cumulative effects.

Findings from Stages 1 to 5 were used to distil and analyse recommendations for the SIA report. This stage involved a multidisciplinary approach led by EMM's social scientists supported by environmental advisers.

g Stage 7 – SIA reporting

Development of this SIA technical report and internal peer review were conducted by EMM's social and environmental scientists.

3.3 Research limitations

3.3.1 Limitations of secondary data sources

This SIA has been based on the best available information relevant to the modification.

While project components are generally fixed, some aspects of the project (including the siting of project elements within the development footprint and construction methodology) are subject to change during the detailed design process. The objective is to ensure that the detailed design can meet construction requirements while continuing to minimise social and environmental impacts and where feasible deliver community benefits.

The SIA relies on several assumptions and limitations including:

- the project workforce is expected to increase by approximately 150 workers, from 500 to 650 workers, as a result of the modification, and that these additional workers will reside at the temporary accommodation facility during construction
- social infrastructure reviewed in the social baseline predominantly considers government-provided facilities or services. In some instances, it is possible that local communities access services through private providers for which data is not available
- data presented from SIA engagement for the modification is based on the interviewee's knowledge and experience and on their willingness to participate and share data openly. The data collected through the SIA engagement process may not be representative of the perspectives of all community members.

4 SIA context and scope

As outlined in the SIA Guideline, scoping is the first phase of SIA and involves gaining an appreciation of the social context and the nature of the project in order to complete initial identification of potential impacts and benefits to be taken forward for further assessment.

This section outlines the SIA study areas, provides a summary of key features of the area within which the project and the workforce accommodation facility will be developed, the policy and planning context and the outcomes of the review of the previously identified social impacts and benefits.

4.1 Modification area

The modification area is located on land adjacent to the project area within the Mid-Western Regional LGA. The modification area is freehold land owned by three new landholders (Lots 11, 40 and 60; however, it is same owner for the three lots). Lot 34 is an existing landowner (see Figure 1.3). Three lots are located to the north of the central portion of the project area encompassing approximately 172 ha, and part of one lot is located in the eastern portion of the project area encompassing approximately 66 ha. The modification area is zoned RU1 Primary Production under the *Mid-Western Regional Local Environmental Plan 2012* (Mid-Western Regional LEP).

The modification area associated with the new access road runs from Merotherie Road along Birriwa Bus Route South, a local road.

The modification area is characterised by flat to gently undulating topography and is predominantly cleared land which supports agricultural uses.

4.2 SIA study area

The SIA study area (referred to as ‘social locality’ in the SIA Guideline) is defined with reference to stakeholders who could potentially be directly or indirectly affected by the project. This includes landholders, nearby neighbours, community members, businesses, service providers and indigenous groups who may have an interest in the project or could be directly or indirectly impacted. The SIA study area identifies the social and geographical areas for the SIA, and takes into account:

- the nature and scale of the proposed project, including associated infrastructure
- the scope of the potential social impacts throughout the project lifecycle
- the location and characteristics of potentially affected communities
- land use patterns, infrastructure, and urban/rural centres.

The study area adopted for this SIA is the same as that identified in the SIA Addendum, prepared to support the Amendment Report (EMM 2023) for the project (EMM, 2022), and encompasses the local communities and key townships likely to experience direct social impacts from the project such as changed land use, amenity and traffic impacts. The SIA study area includes a local area, key townships and a regional study area as outlined in Table 4.1 and illustrated in Figure 4.1.

The regional study area includes the geographic areas likely to experience more indirect social impacts of the project. Indirect impacts are associated with use of infrastructure, employment, supply chains, roads, transportation of goods, materials and equipment and cumulative impacts arising from other projects in the area.

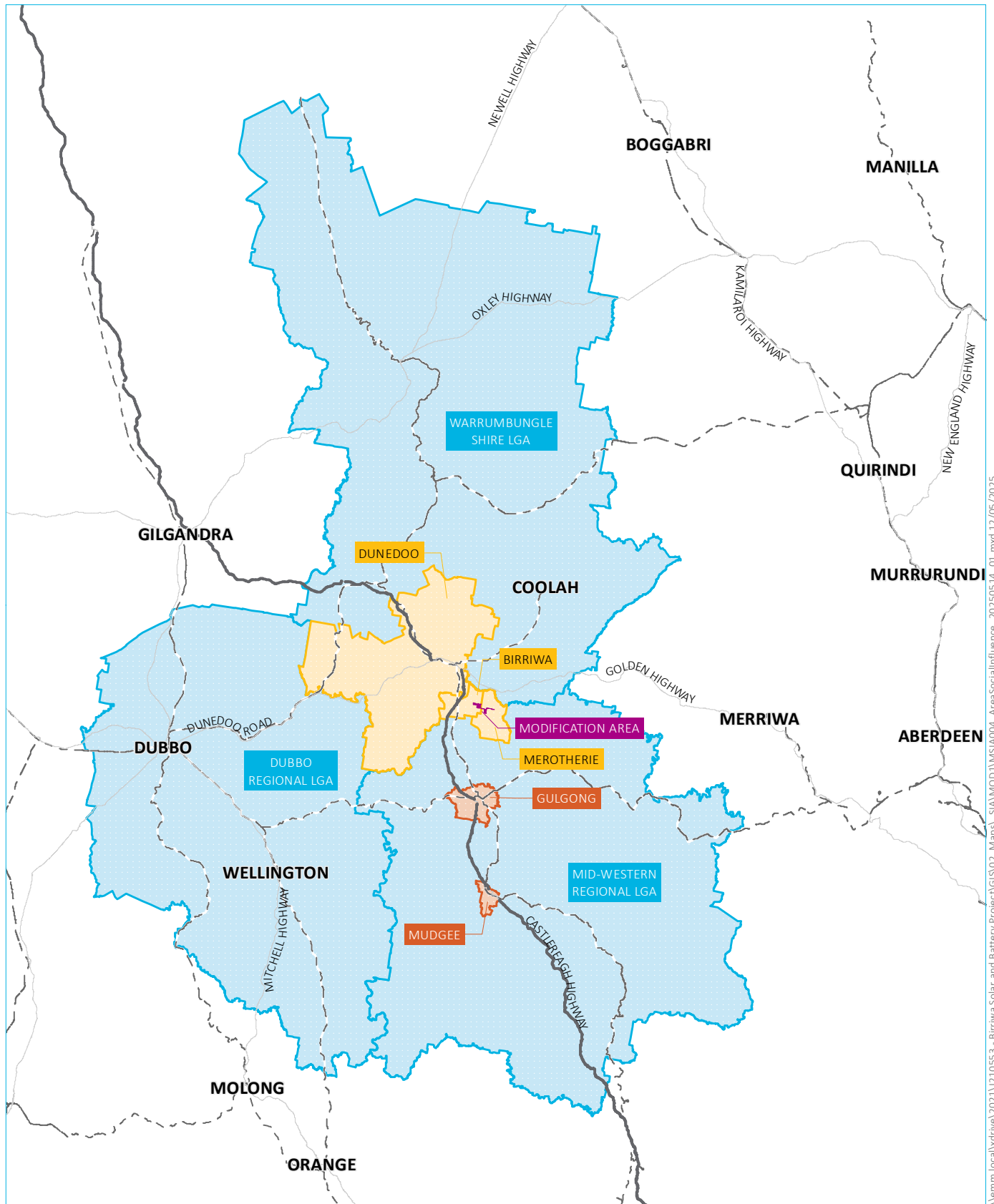
The statistical categories used in the report, as defined by the ABS Australian Statistical Geography Standard (ASGS), include:

- Suburbs and Localities (SAL): an approximation of the officially recognised boundaries of suburbs and localities as defined by the State and Territory governments of Australia
- State Suburb Classification (SSC): for the 2021 ABS Census, SAL classifications replaced the SSC classification however they remain consistent. This report refers to SALs when discussing the 2021 ABS Census data and, where relevant, refers to SSCs when citing ABS Census data from previous years
- Local Government Area (LGA): representation of gazetted local government boundaries as defined by each state and territory
- State and Territory (STE): the state and territory boundaries within Australia.

Table 4.1 **SIA study area**

Study area	Geographic area	2016 ABS data category	2021 ABS data category	Referred to in report as:
Local area	Birriwa	Birriwa SSC	Birriwa SAL	Local area
	Merotherie	Merotherie SSC	Merotherie SAL	
	Dunedoo	Dunedoo SSC	Dunedoo SAL	
Key townships	Gulgong	Gulgong SSC	Gulgong SAL	Key townships
	Mudgee	Mudgee SSC	Mudgee SAL	
Regional area	Mid-Western Regional LGA	Mid-Western Regional LGA	Mid-Western Regional LGA	Regional area
	Warrumbungle LGA	Warrumbungle LGA	Warrumbungle LGA	
Area of reference	Mid-Western Regional LGA	Mid-Western Regional LGA	Mid-Western Regional LGA	Area of reference
	Warrumbungle LGA	Warrumbungle LGA	Warrumbungle LGA	
	Dubbo Regional LGA (formerly known as Western Plains Regional LGA)	Western Plains Regional LGA	Dubbo Regional LGA	
State of New South Wales	New South Wales	New Sout Wales STE	New South Wales S/T	NSW

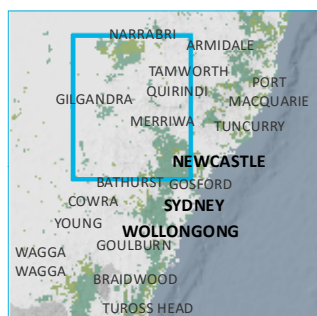
Note: Any reference to these defined geographic areas in this report is a reference to the corresponding ABS data category.



Source: EMM (2025); ACEN (2022); ABS (2017); DCSSS (2023, 2024)



SIA study area



- KEY**
- Modification area
 - Regional area
 - Existing environment
 - Rail line
 - Major road
 - Local area
 - Key townships
- INSET KEY**
- NPWS reserve
 - State forest

Birriwa Solar Farm Modification
Social Impact Assessment
Figure 4.1

4.3 Scope of impacts and benefits affected by the proposed modification

The impacts and benefits identified in the EIS SIA and Addendum SIA were reviewed against the proposed modification. The modification will not result in any change to the majority of the impacts and benefits assessed in the EIS SIA and Addendum SIA and therefore do not require further investigation as outlined in Table 4.2.

Table 4.2 Matters identified in the EIS and Addendum SIA's which require no further assessment

Impact	Reason no further assessment is required
Impact on tourism sector	The proposed modification will not change the predicted impacts on the tourism sector, which is adequately addressed in the EIS SIA and Addendum SIA. The residual risk of related impacts on tourism remains negligible due to the additional construction workers being housed in the expanded temporary accommodation facility.
Impacts related to affordability and availability of rental housing.	Was addressed in the Addendum SIA as a potential impact of the project. The proposed modification increasing the peak construction workforce from 500 to 650 workers will not increase demand for local rental housing. All non-local workers will reside at the expanded temporary accommodation facility and additional local workers will reside in existing accommodation. The amendment directly reduces the potential for cumulative impacts on access to rental housing by providing additional workforce accommodation.
Accessibility impacts due to capacity of short-term accommodation.	Was addressed in the Addendum SIA in terms of the project contribution to restricted access to short-term accommodation' and potential cumulative impacts. The modification directly reduces the potential for cumulative impacts on access to short-term accommodation by providing additional workforce accommodation.
Community investment and involvement (benefit)	Adequately addressed in the EIS SIA. The modification is not proposed to alter the scope of planned community investment and involvement.
Way of life impacts to intergenerational equity (benefit)	Adequately addressed in the EIS SIA. The modification is not proposed to alter impacts to intergenerational equity as these principally relate to benefits associated with solar energy generation.
Changes to the visual landscape experienced by near neighbours and other stakeholders	Addressed in the Addendum SIA. Topography, existing vegetation and landscape screening of the modification area will limit visual impacts for neighbours and motorists along parts of Birriwa Bus Route South, Birriwa Bus Route North, and Merotherie Road.
Health impacts arising due to proximity to project infrastructure	Adequately addressed in the EIS SIA. The modification is not proposed to alter health impacts arising due to proximity to project infrastructure, as these were assessed in relation to electric and magnetic fields (EMF).
Changes in community cohesion due to the inequitable distribution of project benefits.	Adequately addressed in the EIS SIA. The modification is not proposed to alter distribution of project benefits.
Community benefit related to growth and economic development (benefit)	Adequately addressed in the Addendum SIA. The modification is not likely to alter the growth or economic development of the region.
Livelihood impacts due to changes in rural property values	Adequately addressed in the Addendum SIA. The modification is not anticipated to affect property prices.
Improved worker health and wellbeing (benefit)	Adequately addressed in the Addendum SIA. The modification is not proposed to alter benefits for the project workforce.
Health impacts arising from sleep disturbance due to operational noise	Addressed in the Addendum SIA. Proposed modifications are unlikely to affect operational noise.
Health and wellbeing due to fire risk to public safety	Adequately addressed in the Addendum SIA. The Modification Bushfire Assessment (Coolburn 2025) identified "there would be no apparent increase in the level of risk associated with this proposed modification."

Impact	Reason no further assessment is required
Surroundings impacts experienced by other stakeholders due to changes in the visual landscape	Adequately addressed in the Addendum SIA. Proposed modifications are unlikely to affect views and vistas from public viewpoints.

The identified impacts requiring further assessment as a result of the amendment are outlined in Table 4.3.

Table 4.3 Matters identified in the EIS and Addendum SIA's which require further assessment

Impact	Reason further assessment is required	Response
Accessibility related to community infrastructure and services	The modification is proposed to alter the project workforce and has potential to change related demand for community infrastructure and services.	Chapter 7 A03 Accessibility of community infrastructure and services
Livelihood impacts to the agricultural sector	The amendment will result in a slight increase to the project disturbance footprint and may also decrease the previously anticipated effects of vehicle travel, following construction of road improvements.	Chapter 7 L04 Impacts to nearby agricultural producers
Livelihood benefits related to rural income diversification through landholder agreements and Neighbour Benefit Sharing Program (NBSP) payments (benefit)	This was addressed in the EIS SIA. The modification will introduce one new landholder, which will affect the planned scope of landholder agreements and NBSP payments.	New benefit
Livelihood impact due to limited workforce supply and job competition (construction)	The modification would increase demand for an additional 150 construction workers, including an assumed 15 local workers.	Chapter 7 L03 Limited workforce supply and job competition
Way of life impacts (changes in social amenity) resulting from construction activities	The modification increases the development footprint which may increase dust, noise and vibration, and lighting impacts experienced by nearby neighbours.	Chapter 7 S01 Changes in amenity due to generation of dust, noise and vibration and lighting
Surroundings impacts due to changes in ecological values and the quality of natural assets	The modification will result in an increase in the development footprint requiring additional clearing and associated impacts to native vegetation and fauna. An additional 69.05 ha of native vegetation would be cleared as a result of the modification.	Chapter 7 S03 Impact to surroundings from changes in ecological values and natural assets
Public safety related to increased traffic movements on the local road network	There will be possible impacts associated with interactions of predominately heavy vehicle traffic along Birriwa Bus Route South and Cycle Ways and travel of 150 additional workers to/from the accommodation facility.	Chapter 7 HW01 Safety risks for transport network users
Health and wellbeing impacts related to safe use of the Central West Cycle Trail (CWCT)	This impact has been reassessed to address the effect of an increase in construction traffic along BBRS and interactions of this traffic with the CWCT.	Chapter 7 HW01 Safety risks for transport network users
Risks associated with an increase in population in an isolated location, close to rural properties	Increasing on-site workers within this remote location may increase the perception of overall risk and provides additional mitigation opportunities.	Chapter 7 HW03: Risks associated with an increase in population in an isolated location, close to rural properties
Health and wellbeing impacts due to project related stress and anxiety (associated and non-associated landholders and broader communities of the local area).	Addressed in the Addendum SIA. There is potential for project related stress and anxiety levels of key stakeholders to change due to ongoing engagement since the Amendment report for the project.	HW05 Health and wellbeing impact due to project stress and anxiety

Impact	Reason further assessment is required	Response
Lack of trust in decision making systems	Addressed in the Addendum SIA. The modification may alter community sentiment associated with a lack of trust in decision-making systems.	D01 Lack of trust in decision making systems
Livelihood benefit related to use of local goods and services (benefit)	The modification is proposed to alter the project workforce, and related demand for community goods and services.	L01 Livelihood benefit related to use of local goods and services
Livelihood benefit related to access to employment and training opportunities (youth) (benefit)	The modification may alter access to employment or training opportunities.	L02 Livelihood benefit for enhanced employment opportunities for underrepresented groups
Livelihood benefit related to access to employment and training opportunities (Aboriginal and Torres Strait Islander People) (benefit)	The modification may alter access to employment or training opportunities.	L02 Livelihood benefit for enhanced employment opportunities for underrepresented groups
Cultural impacts related to Aboriginal and Torres Strait Islander values	Six Aboriginal sites are in the modification area. Five will be avoided and one previously recorded site may be impacted. Recorded sites were assessed as being of low cultural significance. Artefacts are likely within landforms heavily disturbed by agricultural activities.	C01 Change to land use results in a sense of loss of cultural heritage for Aboriginal and Torres Strait Islander people
Community impacts related to reduced social cohesion due to an influx of temporary workers.	The modification would alter the size of the project construction workforce and potential social change related to social cohesion.	Chapter 7 Addressed in HW03: Risks associated with an increase in population in an isolated location, close to rural properties

4.4 Policy and planning context

This section provides a summary of the relevant policy, plans and strategies that inform an appreciation of potential social impacts and benefits associated with the modification. A more detailed discussion of the policy and planning context is provided as Attachment B. The project's overall consistency with relevant policies and plans is also addressed in Chapter 2 of the Modification Report.

Since the SIA Addendum, the following regional strategies and plans have been updated:

- First Nations Guidelines: Central-West Orana – 2023 Update (Office of Energy and Climate Change, 2023)
- Central Orana Regional Economic Development Strategy 2018-2022 – 2023 Update (NSW Government, 2023)
- Castlereagh Regional Economic Development Strategy 2018-2022 – 2023 Update (NSW Government, 2023).

5 Social baseline summary

5.1 Introduction

This section provides a summary of baseline social conditions across the SIA study areas. It outlines existing social characteristics with reference to relevant social indicators.

A key source of baseline information is data collected through ABS Censuses (ABS 2021, 2016 and 2011).

ABS statistical geographies for respective SIA study areas are summarised below:

- Local study area: Birriwa, Merotherie, and Dunedoo – ABS ‘SAL’ data category.
- Key townships: Gulgong and Mudgee – ABS ‘SAL’ data category.
- Regional study area: Mid-Western Regional LGA and Warrumbungle LGA – ABS ‘LGA’ data category.
- Area of reference: the regional study area along with Dubbo Regional LGA – ABS ‘LGA’ data category.
- State: NSW-ABS ‘STE’ data category.

The SIA study areas are represented in Section 4.1 of this report.

This chapter is a summary of the social baseline, which is provided in Attachment C. The baseline maintains similar findings to those indicated in the Addendum SIA baseline, as it relies predominantly upon the same ABS data sources, many of which have not been updated since the previous baseline was prepared.

5.2 Baseline summary

5.2.1 Regional area context

The project is on Wiradjuri Country in the localities of Birriwa and Merotherie, approximately 15 km south-east of the township of Dunedoo, in the Central West of NSW. The project is within the CWO REZ, and is in the Mid-Western Regional LGA, with part of the project’s primary vehicle access route from the Castlereagh Highway within the Warrumbungle Shire LGA.

Key townships close to the project area, within the regional area, include Gulgong (20 km south) (population 2,680, ABS 2021), Coolah (40 km north) (population 1,262, ABS 2021), Mudgee (60 km south) (population 11,457, ABS 2021) and Dubbo (80 km west) (population 43,516, ABS 2021).

Major industry sectors with respect to employment share in the local area include mining, retail trade and health care and social assistance. The agricultural and mining industry sectors are the dominant employment sectors in the regional area. Tourism is also an important and growing industry sector in the Mid-Western Regional LGA.

The project is within the CWO REZ and there are a number of other renewable energy development proposed in the vicinity of the project including Narragamba Solar Farm (in planning), Avonside Solar Farm (in planning), Orana Wind Farm (in planning), Dunedoo Solar Farm (approved Sept 2021), Sandy Creek Solar Farm (under assessment), Cobbora Solar Farm (in planning), Dapper Solar Farm (in planning), Spicers Creek Wind Farm (approved Oct 2024), Valley of the Winds Wind Farm (under assessment), Mayfair Solar Farm (in planning), Bellambi Heights BESS (approved May 2024), Mavis Solar Farm (in planning), Tallawang Solar Farm (under assessment), Stubbo Solar Battery and Project (in construction), and CWO REZ Transmission (approved).

5.2.2 Local area and key townships context

The land in the development footprint is zoned as RU1 Primary production under the Mid-Western Regional Local Environment Plan (LEP) and is predominantly used for agricultural purposes.

Land surrounding the project area is characterised by flat to gently undulating cleared land with scattered rural residences and agricultural buildings and infrastructure (e.g. silos and livestock yards). Areas of native vegetation occur within and surrounding the project area in the form of scattered paddock trees, vegetation along local roads, creek lines and windbreaks. The properties within the development footprint are currently primarily used for sheep and cattle grazing as well as low intensity dry land cropping.

There are four associated residences within or in close proximity to the modification area, seven non-associated residences within 2.5 km of the modification area, and another nine non-associated residences between 2.5 km and 4 km from the modification area (Figure 1.2). In relation to the modification, the closest residences are R12 and R31, to the north/north-east of the modification area.

The study area is within the locality of Birriwa, which has a population of 45 (ABS 2021) and includes a small cluster of residences and rural infrastructure on the Castlereagh Highway, approximately 1.4 km west of the study area. Birriwa is adjacent to Dunedoo, the town centre of which is approximately 15 km south-west (population 1,097, ABS 2021). The eastern section of the modified project area also extends into the locality of Merotherie, (population of 24, ABS 2021).

The local area is noted as having low levels of population mobility and high rates of volunteering, indicating this community is likely to have a strong social fabric. The local area is relatively well serviced with social infrastructure and services particularly for vulnerable members of the community. More options for services are available in the larger regional centres. This is also the case for educational services and institutions available in the key townships and regional study area. The regional area also has comparatively low rates of homelessness.

Birriwa has a relatively high proportion of young people (26.8%) compared to the rest of the local area and NSW more broadly (18.2%).

There is a high proportion of people occupied as technicians and trades workers and construction businesses, particularly in the key townships. However, the key townships demonstrate relatively low levels of socioeconomic advantage with comparatively low incomes.

There are elevated rates of crime in the Dubbo LGA and Warrumbungle LGA compared to the NSW average.

The local area had the lowest proportion of family households compared to the regional area and key townships. This may be attributed to the number of retired and single people in the local area. There is also limited access to retirement home opportunities and care services within the regional area, which may mean older, lone individuals in the area are more vulnerable than other residents with regards to accessing necessary goods and services.

Potential direct, indirect, and cumulative impacts associated with the modification could occur across the local area and key townships, particularly with regards to:

- transport changes affecting road safety or access
- project effects on community values, or health and wellbeing.

6 Community and stakeholder engagement

6.1 Introduction

Community and stakeholder engagement is a core element of SIA. This SIA draws on feedback generated through the engagement undertaken for the project, including:

- previous independent social engagement conducted during preparation of the EIS SIA (EMM, 2022) and Addendum SIA (EMM, 2023)
- ACEN engagement for the modification
- targeted independent engagement for this SIA.

6.2 Previous engagement – Amendment Report

SIA engagement was conducted in July 2023 as part of the preparation of the amendment report (relating to the addition of a temporary workers accommodation facility to the project) and involved interviews with key stakeholders and attendance at a community information session. Engagement activities and participants included:

- interviews with five adjacent and nearby landholders, five local stakeholders, four service providers, including JobLink Plus Mudgee, Gulgong Multipurpose Service, Mudgee Tourism and Policing services for Mudgee, Gulgong and Birriwa, as well as the Gulgong Chamber of Commerce
- a further eight residents of the local community, including a member of the Dunedoo Men's Shed, also provided feedback on the project via a project community information session

Feedback derived through engagement activities revealed a range of opinions on the amendment. Most stakeholders engaged were supportive of the addition of an accommodation facility to the project, as it would resolve key concerns relating to traffic and pressures on local housing and short-term accommodation. Some stakeholders reported that the remote location of the proposed accommodation facility would need to be adequately serviced, and they would be more supportive if the facility was located closer to Dunedoo.

Through the analysis of community observations and perceptions, social baseline characteristics and engagement feedback, the following key themes were defined:

- Accessibility – the nature of the local housing market and service provision in the local and regional area and how this intersects with the project.
- Livelihoods – the positive contribution the project would make to the local and regional economy and how this can be maximised.
- Surroundings – potential amenity, traffic and public safety impacts experienced by the local community, potential effects on the natural environment including water quality and water security impacts, fire safety risk.
- Culture – potential impacts to Aboriginal connections to Country, land and waterways.
- Health and wellbeing – concerns relating to health and policing services in the area which are at capacity servicing the existing population.

- Decision-making systems – the local community suggested they feel a general lack of trust in approval processes for renewable projects, as the assessment process for State significant development projects reduces opportunities for local participation and local interests are not felt to be prioritised.

Key quotations have been utilised, where relevant, in assessment of the impacts and benefits of the project in Section 6 but can otherwise be found in the Addendum SIA (EMM 2023).

6.3 Modification engagement

Stakeholder engagement for the project has been comprehensive to date and reflects the importance ACEN places on this aspect of its business. Since the lodgement of the EIS and the Amendment Report, ACEN continues to engage with stakeholders including local authorities, government agencies, the local community and neighbouring landholders. ACEN has hosted two community drop-in sessions in their Gulgong office as well as project updates in the Dunedoo District Diary, and emailed subscribers of the project, numbering 167 stakeholders.

6.4 Modification SIA engagement

Engagement for the modification relating to the SIA included telephone interviews with Mid-Western Regional Council, Gulgong Chamber of Commerce, Central West Cycle Trail (CWCT), Hogden Bus Service, and five landholders and nearby neighbours.

6.5 Summary of key findings

Key themes, issues and findings emerging from engagement for the SIA in relation to the modification are summarised in Table 6.1.

Table 6.1 Summary of engagement feedback/ key findings for the modification

Themes and issues
Safety, health and wellbeing <ul style="list-style-type: none"> • With a licensed premises at the camp, management of alcohol consumption and potential incidents will be required. • Council satisfied that issues raised during submissions and consultation have been addressed. • An additional 150 workers are not of concern (bus service). • With 650 workers residing at the project accommodation camp within a couple of kilometres there are some personal safety concerns. • An adjacent landholder has a large amount of valuable machinery such as headers, tractors, air seeders, etc. but the shed is not lockable, like any other farm security is the biggest concern. • Question the adequacy of security to be provided by the project, as details still to be finalised.
Business and livelihoods <ul style="list-style-type: none"> • Renewables projects reduce the tourism capacity of the towns with so many workers. • Lack of recreational opportunities for workers during time off. Opportunities for local tourism businesses to capture that market. • <i>There won't be a need for a bus on the Birriwa Bus Route South as families are moving away. This will halve demand for my bus service, potentially squash it altogether. There will be need for me to find another job as my bus service won't be viable.</i> • The Central West Cycle Trail (CWCT) has approximately 3,000 users/year generating an estimated \$600,000 annually for Dunedoo, Mendooran, Cobar and other small towns in the region. A local business also offers guided cycle tours and support for independent cyclists, and for the past five years, a local landholder has supplemented farm income by providing meals and accommodation for cyclists.

Themes and issues

Housing and accommodation

- While the capacity of the accommodation facility has increased, it is understood that it is not mandatory for construction workers to stay at the temporary accommodation facility. It is estimated that there would be 15 managers and 40 to 80 specialised contractors onsite during construction and these workers are not likely to stay at the accommodation facility. Workers may still use private rental accommodation using a *hot bed* arrangement or short-term accommodation which takes capacity from people who might be moving to the area, visitors and tourists. Motels would be booked out and this reduces tourism capacity.
- A requirement of council endorsement of the project is mandatory housing of all construction workers at the accommodation temporary workers accommodation facility. Capacity and method of enforcement is unclear.

Access to services and social infrastructure

- Most businesses don't operate with a full team and are limiting their services to the local community as a result.
- There is no General Practitioner (GP) in Gulgong, so workers would need to go to Mudgee or possibly Dunedoo.
- The 150 additional workers will not change the impact on local service capacity.

Project employment, procurement, and training

- There is evidence that authorities are not interested in providing training or developing capacity of trades associated with construction of wind or solar projects. There is no legacy.

Road safety and access

- Machinery is transported on local roads, kids on horses going for a ride, and farm workers moving stock on horses, on local roads.
- Local community will benefit from the Merotherie Road/Birriwa Bus Route South intersection upgrade but 'this is not the main game'.
- Safety concerns relating to cyclists using Merotherie Road despite the proposed addition of a separate lane for cyclists. It was expressed that this section of CWCT will become unpleasant and goes against the intent of the trail, which is an adventure trail in a quiet, remote area. The suggested alternative would be to use Barney's Reef Road – Slap Dash Creek continuation which would require clearing of foliage and upgrade of creek crossings to allow bike access and keep the appeal of the trail.
- There were queries in relation to how the Driver Code of Conduct would be enforced.
- More traffic on the road, and bigger trucks.
- Increased traffic may impact us moving stock and oversized machinery around.
- Merotherie Road from Birriwa Bus Route South to Gulgong should not be a transport route for the project. This is a dirt road and it is not being upgraded.
- It was expressed that there will be no project traffic on Birriwa Bus Route North as the road will not be used by the project as a transport route.
- The alternative access route along Birriwa Bus Route South via Merotherie Road is only a portion of the bus route, the road that the local school bus service uses.
- Proposed road upgrades will *probably not benefit* local residents. There is a low level of local traffic currently and the road is sufficient for local traffic. Capacity and willingness to maintain these roads, once upgraded, was questioned. Upgrades are to allow for project road use.
- Road upgrades encourage more traffic to use the road. People drive carefully and safely if the road is a dirt road or of poor quality.

Land use

- Accommodation facility is adjacent to EnergyCo's 1,200 worker camp for CWO transmission line project.
- Need to minimise damage to roads and trees. The 300-year-old gum trees that accommodate a range of wildlife such as birdlife, goannas, wombats and echidnas, will be cut down for the road upgrades. It was suggested that a road could be built on the other side of the fence (within the already cleared project area).

Themes and issues

Value for local amenity and character

- Residents like contributing to the future of Gulgong town. People are proud and really love their town. The main street has not changed in 15 years. There are many historical buildings and sandstone pavements which maintains the historical value. People are proud of their history and this is their best asset.
- Cyclists who come to ride the CWCT have an appreciation of living in the country.
- We will see the panels and infrastructure. *We don't want to look at it.*

Engagement and decision making

- Council has been forceful in imposing requirements for proponents, which is seen as beneficial.
- Sponsorship for local events such as the Henry Lawson Festival (\$2,000 to \$4,000) is appreciated but we don't see the long-term benefit or legacy.
- The project has engaged so much with the community, in part due to its existing presence.
- Several stakeholders expressed frustration that feedback has not been actioned and also the lack of coordination between proponents.

Social cohesion

- With an additional 150 workers, the standalone impact is seen as low.
- Several local residents leaving the area due to losing rental housing or trying to leave the area but unable to due to inability to sell their property, being adjacent to project infrastructure.

7 Assessment of social impacts

This section discusses potential social impacts and benefits generated by the modified project utilising the methodology outlined in section 2.3 of the SIA Guideline Technical Supplement (DPE, 2023b) detailed in Section 3.2 of this report.

Findings from technical reports and stakeholder perceptions outlined previously have been used to capture expert and local knowledge in the identification and assessment of social impacts, and to develop appropriate impact mitigation, and enhancement strategies.

Assessment of social impacts considers a range of factors and potentially competing interests. The impact assessment is reflective of this and has included potential impacts and benefits on local communities, the broader region and for vulnerable sectors of affected communities.

Social impacts have been assessed with no mitigation being implemented using the precautionary approach, the residual impact is then assessed on the basis that proposed mitigation or enhancement measures are effectively executed. The assessment uses the terms unmitigated and mitigated when referring to negative impacts and un-enhanced or enhanced when referring to positive impacts (benefits).

Application of the likelihood and magnitude framework as outlined in Section 3.2 of this report informs assessment of the level of significance of a social impact as being low, moderate, high, or very high. Both impacts and benefits have been assessed.

It should be noted that the baseline and community sentiment has changed somewhat since the SIA Addendum was conducted, specifically due to the commencement of a number of approved renewable developments in the project area. This was reflected in the 2025 consultations undertaken for this SIA and discussed in Chapter 6.

Despite this, given the scale of the modification, in isolation it is not considered to pose any additional impacts over the approved project. Therefore no additional measures have been proposed as a result of the modification.

The potential social impacts and benefits are assessed in Table 7.1.

Table 7.1 **Impact assessment**

Social impact category and Addendum SIA reference	Impact assessment	Significance (as assessed in Addendum SIA)	Modification significance (unmitigated /unenanced)	Mitigation measures	Significance (mitigated / enhanced)
Project planning					
Lack of trust in decision-making systems					
The modification may negatively affect existing community sentiment associated with a lack of trust in decision-making systems					
Affected parties: Residents of the local area					
Extent: Local area					
Decision-making systems D01	Local stakeholders engaged expressed an inability to distinguish between projects in the local area. EnergyCo's CWO transmission line project is situated adjacent to the project site and has commenced construction, bringing this project front of mind for all landholders and nearby neighbours engaged for the modification. Consultation was perceived to be a 'waste of time' as feedback was not being considered and changes were not made to the project, or have not been communicated to stakeholders.	Unmitigated: Medium Mitigated: Medium	Medium	Ongoing engagement with key local stakeholders to provide updates on proposed mitigations and design considerations. In addition to mitigations proposed in Section 7, the NSW government and particularly Energy Co and the Network Operator have a role in ensuring that approval processes sufficiently consider impacts on communities, per relevant regional plans and strategies.	Medium
Pre-approvals and construction					
Health and wellbeing impact due to project related stress and anxiety					
The modification may negatively affect existing community sentiment associated with stress and anxiety related to the project					
Affected parties: Associated and non-associated landholders and broader communities of the local area					
Extent: Local area					
Health and Wellbeing HW05	During 2025 engagement, frustration was expressed by several stakeholders relating to mitigations proposed for an alternate CWCT route and a perceived lack of progress on consideration of these mitigations. Stress relating to a perceived lack of updates regarding project changes was noted by several local stakeholders. A lack of coordination between proponents was noted as a source of frustration.	Unmitigated: Medium Mitigated: Medium	Medium	ACEN has engaged and will continue to engage in frequent and tailored communication with associated and non-associated landholders. This will ensure individuals are kept informed of the project and provided with an opportunity to ask questions or raise issues and concerns.	Medium

Social impact category and Addendum SIA reference	Impact assessment	Significance (as assessed in Addendum SIA)	Modification significance (unmitigated /unenhanced)	Mitigation measures	Significance (mitigated / enhanced)
Construction					
Accessibility of community infrastructure and services					
Affected parties: Landholders, residents of the local area, workforce					
Extent: Local area					
Accessibility A03	<p>With the proposed modification it is anticipated there will be up to 650 non-local project workers accommodated on site during the construction phase of the project.</p> <p>During 2025 engagement, it was noted that there are no GP services in Gulgong. However, stakeholders noted that the addition of 150 workers would not change the demand for health services as medical services will be provided onsite. Change in the demand for emergency services by the project is considered negligible.</p>	<p>Unmitigated: Medium</p> <p>Mitigated: Low</p>	Medium	Provision of onsite medical services, and recruiting staff from urban areas, as well as communicating with key stakeholders, and advocating for a strategic approach to management of cumulative demand.	Low
Livelihood benefit for enhanced employment opportunities for underrepresented groups					
Affected parties: Underrepresented groups, including youth, people over 65, people with a disability, Aboriginal and Torres strait Islander People					
Extent: Local and regional area					
Livelihoods L02	There are 2,736 residents recorded in the regional area identifying as Aboriginal and/or Torres Strait Islander, The modification proposes an additional 30% construction workers, or 150 workers. As such, there is potential for increased livelihood benefit relating to employment opportunities for underrepresented groups.	<p>Unenhanced: Medium</p> <p>Enhanced: High</p>	Medium	<p>Enhancements would align with the amended project, and include:</p> <ul style="list-style-type: none"> prioritising hiring or upskilling of workers residing within the local area developing a Local Participation Plan and an Aboriginal Participation Plan (APP) that commits to employment. 	High

Social impact category and Addendum SIA reference	Impact assessment	Significance (as assessed in Addendum SIA)	Modification significance (unmitigated /unenanced)	Mitigation measures	Significance (mitigated / enhanced)
Livelihood impacts relating to limited workforce supply and job competition					
Affected parties: Local businesses servicing the project and local residents who use those local services required of the project					
Extent: Local area and regional area					
Livelihoods L03	The modification seeks an additional 150 workers for construction phase, with an assumed 10% local worker cohort (15 workers). The increase is noted as small in the local and regional context. However, engagement in 2025 noted ongoing shortages of tradespeople and service industry workers.	Unmitigated: Medium Mitigated: Medium	Medium	As noted in the Amendment SIA, mitigations include: <ul style="list-style-type: none"> ACEN will ensure that project workforce and subcontracting needs are clearly communicated to subcontractors, so that impacts to their existing business can be avoided through mitigations such as communicating delays to customers or hiring of additional employees. ACEN remain committed to: <ul style="list-style-type: none"> prioritising hiring or upskilling of workers residing within the local area developing a Local Participation Plan and an APP that commits to employment and investment in job readiness by ACEN and its contracting partners. The APP will be supported by the Construction Phase SEP. 	Medium

Social impact category and Addendum SIA reference	Impact assessment	Significance (as assessed in Addendum SIA)	Modification significance (unmitigated /unenanced)	Mitigation measures	Significance (mitigated / enhanced)
Changes in amenity due to generation of dust, noise and vibration and lighting					
Affected parties: Near neighbours, particularly those with residences closest to the local road network and modified project area					
Extent: Immediate surrounds of study area					
Surroundings S01	<p>Noise: Noise and vibration impacts from construction and operation of the proposed modification are predicted to satisfy all relevant noise and vibration criteria for operation. Impacts from construction noise and vibration are consistent with the previous assessment completed as part of the Noise and Vibration Impact Assessment (NVIA).</p> <p>Visual: The visual impact rating for all receptors closest to the area of proposed new panels is very low.</p> <p>Dust: Community feedback noted ongoing concerns relating to dust impacts in the local area.</p>	<p>Unmitigated: Medium</p> <p>Mitigated: Medium</p>	Unmitigated: Medium	<p>As previously committed to, ACEN will implement a Complaints and Grievances Procedure. The procedure will provide an opportunity for stakeholders to raise complaints, grievances, and provide feedback. The procedure will facilitate the timely response and enable the monitoring and reporting of grievances and ACEN response.</p> <p>In relation to glint and glare impacts, glare impacts can be eliminated by a combination of considered site design at detail design stage and use of backtracking tailored for specific areas of panels and / or at specific times to avoid impacts on identified receivers.</p> <p>To address community feedback, further mitigation measures will be implemented including a cap on traffic movements. Traffic will be split between the two access points including Birriwa Bus Route South Road and Barneys Reef Road. Access to Birriwa Bus Routh South Road via Merotherie Road will enable access to the project for the purpose of constructing and operating the approved temporary accommodation facility, as well as the BESS.</p> <p>Dust suppression controls will be implemented as per mitigation measures identified in Appendix C of the Modification Report, mitigation measure BIO12, AQ1, and AQ6.</p>	Mitigated: Medium

Social impact category and Addendum SIA reference	Impact assessment	Significance (as assessed in Addendum SIA)	Modification significance (unmitigated /unenanced)	Mitigation measures	Significance (mitigated / enhanced)
Safety risks for transport network users					
There will be possible impacts associated with travel of 150 additional workers to the accommodation facility, during road improvements on Birriwa Bus Route South, and potential effects on the CWCT					
Affected parties: Landholders, residents of the local area, workforce, road users					
Extent: Regional area					
Health and wellbeing HW01	<p>The modification seeks an increase in the number of project related vehicles by up to 30% (i.e. a total of 156 daily heavy vehicle trips, or 312 heavy vehicle movements), split between the approved access via Barneys Reef Road and the proposed alternative access via Merotherie Road.</p> <p>Incorporation of Birriwa Bus Route South from the Golden Highway via Merotherie Road as an alternative access route for the project will distribute the area of disturbance associated with project traffic more widely in the local area, and increase the area impacted by road improvement works.</p> <p>While road upgrades are undertaken, there is a potential for construction to create changed road conditions and increased risk for road users.</p> <p>Additional travel due to the additional 150 workers at the temporary accommodation facility will also increase usage of the road.</p> <p>Engagement for the project in 2023 revealed that existing conditions along this road are poor, and a key concern for local residents related to road safety due to increased vehicle movements within the local road network during construction.</p> <p>Project engagement in 2025 found that the alternative access route for the project will not significantly affect the local school bus service as it is only a portion of the bus route. However, increased traffic was noted as a safety concern relating to the movement of stock and oversized machinery within the local area.</p> <p>Other feedback noted that Birriwa Bus Route South is currently used by local landholders and the CWCT also intersects with</p>	<p>Unmitigated: High</p> <p>Mitigated: Medium</p>	<p>Unmitigated: High</p>	<p>A detailed traffic management plan (TMP) will be developed and implemented for all phases of the project and will involve engagement with school bus operators, CWCT, MWRC, WSC and TfNSW. The CTMP will include a Driver Code of Conduct. For the modification, road upgrades will be undertaken across the immediate transport route including:</p> <ul style="list-style-type: none"> • Golden Highway/Merotherie Road intersection • Merotherie Road/Birriwa Bus Route South intersection • Merotherie Road • Birriwa Bus Route South. <p>ACEN are committed to implementing traffic mitigation measures to minimise impacts on any part of the cycle trail that may be affected by project traffic. This could include:</p> <ul style="list-style-type: none"> • in consultation with the CWC Trail Inc, a signage plan will be prepared, highlighting the CWCT within and in the vicinity of the project • within the site induction and driver's code of conduct, the CWCT will be highlighted to increase awareness of cyclists' presence in the area • in site-specific circumstances, e.g. peak construction activities, a traffic controller may be required to manage the vehicular traffic and cyclists which is subject to site supervisor's safety assessment and discretion • a dedicated phone number will be provided for CWCT users to call confirm safe passage before using the trail during peak construction periods. This phone number 	<p>Mitigated: Medium</p>

Social impact category and Addendum SIA reference	Impact assessment	Significance (as assessed in Addendum SIA)	Modification significance (unmitigated /unenhanced)	Mitigation measures	Significance (mitigated / enhanced)
	<p>the project access route along this impacted section of Birriwa Bus Route South. A key local organisation noted that road upgrades, including a lane for cyclists, will result in this section of CWCT becoming unpleasant.</p> <p>Enforcement of the Driver Code of Conduct was also questioned.</p>			<p>would be listed on a sign approximately 1 km from the start of construction and on the CWCT website.</p> <ul style="list-style-type: none"> safe pull over bays for bicycles will be identified along the construction route, which would move depending on the construction schedule. 	

Social impact category and Addendum SIA reference	Impact assessment	Significance (as assessed in Addendum SIA)	Modification significance (unmitigated /unenanced)	Mitigation measures	Significance (mitigated / enhanced)
Risks associated with an increase in population in an isolated location, close to rural properties					
Affected parties: Landholders, residents of the local area, workforce					
Extent: Local area					
Health and wellbeing HW03	<p>The modification will temporarily increase the population residing within the site by 150 personnel, increasing the population outside of local town centres, in addition to the 500 people already expected to be introduced by the project. This represents a temporary 12.8% increase to the population of the local area.</p> <p>The EIS SIA reported that the introduction of new groups of (people to an area can alter existing values, sense of community and overall social cohesion. Engagement undertaken in 2022 and 2023 found these communities experienced difficulties protecting their sense of community, identity and social cohesion during times of rapid population change.</p> <p>Engagement undertaken in 2025 indicated an additional 150 workers would not affect the potential social change relating to social cohesion. Personal safety concerns were raised by several landholders, who questioned the adequacy of security to be provided by the project at the temporary accommodation facility. The temporary accommodation facility will be a licensed premises, removing demand from workers to travel to Gulgong for this purpose. One landholder expressed concern relating to the security of expensive agricultural equipment that are kept in unlocked sheds.</p>	<p>Unmitigated: Medium</p> <p>Mitigated: Low</p>	Unmitigated: Medium	<p>As per recommendations made in the Addendum SIA, it is suggested that the implementation of safety measures within the facility, including adequate fencing and worker training, as well as complaints reporting processes for nearby landholders, will work towards addressing impacts from the project workforce increases proposed.</p> <p>Security personnel will be onsite 24 hours every day to ensure the safety of workers and the surrounding community. Security officers will be responsible for monitoring access to and from the site and managing people within the site. This includes mobile security checks of the accommodation facility and the site perimeter, crowd control for social areas, incident control and emergency response. Officers will have a relevant security licence and will be first aid certified.</p>	Mitigated: Low

Social impact category and Addendum SIA reference	Impact assessment	Significance (as assessed in Addendum SIA)	Modification significance (unmitigated /unenanced)	Mitigation measures	Significance (mitigated / enhanced)
Construction and operation					
Impacts to nearby agricultural producers					
The amendment will result in a slight increase to the project disturbance footprint and may also decrease the previously anticipated effects of vehicle travel, following construction of road improvements					
Affected parties: Local farmers					
Extent: Local area					
Livelihoods L04	<p>The Land and Soil Assessment (Minesoils 2025) found that the impacts of the modification will not be significant on the agricultural productivity of land in and surrounding the modification area. Th assessment found that the modification will result in:</p> <ul style="list-style-type: none"> temporary removal of up to 257 ha of land from agricultural land use for the duration of the project temporary removal of potential agricultural primary productivity to the estimated value of up to \$61,423 per year for the duration of the project temporary impacts on soil resources and Land and Soil Capability (LSC) classes 4 and 5 within the Modification Area where surface disturbance occurs. <p>The temporary impacts on agriculture listed above are considered negligible in the context of the gross commodity values and land use coverage of the agricultural enterprises and industries operating within the Mid-West Regional LGA. Given the nature and scale of the established agricultural industries within the region and wider state, there will be no impact to critical mass thresholds of agricultural enterprises needed to attract and maintain investment in agricultural industries and infrastructure. At the scale of the enterprises operating within the modification area, the anticipated impacts are considered offset as the involved landowners would be financially compensated.</p>	<p>Unmitigated: Medium</p> <p>Mitigated: Low</p>	<p>Unmitigated: Low</p>	<p>As identified in the previous SIAs, ACEN will implement measures including:</p> <ul style="list-style-type: none"> landholder agreements for associated and non-associated landholders engage in frequent communication with landholders and ensure early provision of information regarding the predicted construction impacts to prepare landholders for impacts that cannot be fully mitigated and to provide an opportunity for landholder feedback and engagement implement gate and property access procedures, specific to individual landholder needs and requests. <p>These measures will also address potential impacts of conflicting land uses related to the accommodation facility.</p>	<p>Mitigated: Low</p>

Social impact category and Addendum SIA reference	Impact assessment	Significance (as assessed in Addendum SIA)	Modification significance (unmitigated /unenanced)	Mitigation measures	Significance (mitigated / enhanced)
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Impact to surroundings from changes in ecological values and natural assets

Affected parties: Associated and non-associated landholders. Broader community. People with attachment to the locality. Environmental groups and organisations

Extent: Within the development footprint

Surroundings S03	<p>The Biodiversity Development Assessment Report (BDAR) (EMM 2025) identified that the modification will result in direct impacts to 67.93 ha of Rough-Barked Apple – Red Gum – Yellow Box woodland and 1.1 ha of Blakely's Red Gum – Yellow Box grassy tall woodland – both representing a critically endangered ecological community (CEEC) listed under the <i>Biodiversity Conservation Act 2016</i>.</p> <p>Community engagement during previous stages of the project indicates strong community ties to the ecology of the region. Engagement for the modification indicates community concern for 300-year-old gum trees proposed to be removed for the project road upgrades, removing habitat for wildlife such as birdlife, goannas, wombats and echidnas. There are few trees in the local area due to previous land clearing for agricultural activities.</p>	<p>Unmitigated: Medium</p> <p>Mitigated: Low</p>	Unmitigated: Medium	Biodiversity offsets will be implemented to adequately offset the residual biodiversity impacts of the modification.	Mitigated: Low
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Life of project

Livelihood benefit related to use of local goods and services

Affected parties: Businesses within the local and regional area

Extent: Local area and regional area

L01	The modification seeks an additional 150 construction workers, including an assumed 90% non-local worker cohort (135 workers). Due to the temporary accommodation facility being a licensed premises and the expected shift cycle assuming minimal days off, opportunity to purchase goods and services locally will be limited.	<p>Unenhanced: High</p> <p>Enhanced: High</p>	Unenhanced: Medium	Non-local workers will have access to transport from the site to Gulgong during their time off increasing opportunity to purchase goods and services locally.	Enhanced: Medium
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Social impact category and Addendum SIA reference	Impact assessment	Significance (as assessed in Addendum SIA)	Modification significance (unmitigated /unenanced)	Mitigation measures	Significance (mitigated / enhanced)
Change to land use results in a sense of loss of cultural heritage for Aboriginal and Torres Strait Islander people					
Affected parties: Aboriginal and Torres Strait Islander People					
Extent: Local area					
Culture C01	<p>Aboriginal people may experience intangible cultural impacts, due to their connection to the local area, as a result of potential disturbance of cultural sites.</p> <p>Aboriginal Cultural Heritage Assessment (ACHA) found six Aboriginal sites in the modification area. In regards to cultural significance, there may be places with intangible cultural significance within the modification area, although no specific locations have so far been identified by the Aboriginal community (OzArk, 2025). Four sites will be avoided and one will be harmed, and one (a scar tree) may experience some impact.</p> <p>One is an artefact scatter and will be salvaged. The other is a scar tree along Birriwa Bus Route South and will not be removed. However ground disturbing works associated with the upgrades along Birriwa Bus Route South may encroach on the dripline of the tree.</p> <p>Feedback received during consultation of registered Aboriginal parties (RAPs) for the modification noted the importance of preserving the cultural and environmental integrity of watercourses, including those in the modification area, which hold significant value to the overall heritage landscape. Concerns related to transparency were noted, with a request for clear, respectful and ongoing engagement with Warrabinga Wiradjuri #7 Native Title Claimants.</p>	<p>Unmitigated: High</p> <p>Mitigated: Medium</p>	Medium	<p>Should ground disturbing works within this dripline be unavoidable, management of the tree may be required in consultation with registered Aboriginal parties (RAPs). These management measures may include salvage (i.e. removal of the scarred portion of the tree) or alternate management of the tree should it be preferred to remain <i>in situ</i>. The recommended methodology for the salvage would be finalised after the approvals process and documented in the Aboriginal and Cultural Heritage Management Plan (ACHMP), once the exact nature of impacts is known.</p> <p>In response to feedback from RAPs, it is expected that the ACHMP will include:</p> <ul style="list-style-type: none"> the proposed storage location for salvaged material and be agreed in consultation with Traditional Owners and Registered Aboriginal Parties, with a preference for storage on Country where appropriate and culturally safe. a clear plan for the cultural management and healing of Country in relation to desecration of Site 36-03-3918. Any works in proximity will be conducted under strict cultural supervision. RAPs to be involved in all stages of implementation to ensure compliance with the ACHMP. This includes regular walkover inspections, provision of monthly updates and inclusion of RAPs in all decisions relating to cultural salvage, site protection and mitigation measures. 	Low
Long-term safety benefits associated with improvements to Birriwa Bus Route South					
Affected parties: Landholders, residents of the local area, workforce, road users					
Extent: Regional area					

Social impact category and Addendum SIA reference	Impact assessment	Significance (as assessed in Addendum SIA)	Modification significance (unmitigated /unenhanced)	Mitigation measures	Significance (mitigated / enhanced)
Health and wellbeing HW06	<p>As identified above, existing road conditions along Birriwa Bus Route South are a key concern for local landholders. The proposed modification incorporates enhancements to Birriwa Bus Routh South from the Golden Highway via Merotherie Road as an alternative access route, including a public road crossing.</p> <p>Engagement during 2025 noted perceived minimal social benefit for local residents as a result of the proposed road upgrade. This was due to the perception that the current condition of Birriwa Bus Route South is sufficient for local traffic and that road upgrades are for the project, It was also perceived that the project road upgrades will increase traffic, reducing the benefit for local residents.</p>	N/A	Low	Enhancements recommended to mitigate safety risks, as outlined in HW01 above.	Low

8 Cumulative assessment

The assessment of the modified project has been conducted in an environment where substantial change has occurred since the Addendum SIA was prepared. Multiple projects are being progressed in the local and regional area. Feedback from engagement conducted for this modification noted stakeholder confusion and the inability to differentiate between projects in the local area. Cumulative social impacts such as increased traffic, road safety concerns, amenity and health and wellbeing impacts relating to nearby projects are already being experienced as a result in the local area (see Attachment B.4). Specific cumulative issues cited during the SIA consultations included:

- the recent increase in dust, noise and lighting from buses and worker vehicles perceived to be impacting local residents along Merotherie Road and Birriwa Bus Route South (associated with EnergyCo's CWO transmission line project).
- challenges relating to moving stock locally (along Birriwa Bus Route North to Birriwa Bus Route South) have been experienced, permissible under their 10 km council permit. A number of stakeholders interviewed stated it is no longer possible to move stock on this route due to the increase in traffic from the cumulative projects.
- property values were also noted as a cumulative impact with a nearby neighbour stating they were unable to sell their property due to being situated adjacent to a CWO project. It was also expressed that several families have moved out of the local area due to lack of availability of housing, with rental leases not being renewed.
- frustration regarding the lack of coordination between proponents relating to potential mitigations and community benefits.

There are no additional mitigations proposed to address these cumulative impacts over those proposed in the Addendum SIA as these are considered sufficient to address the identified project impacts. However, it is recommended that ACEN, the NSW government and other proponents present in the area (particularly EnergyCo) play a role in effectively managing cumulative impacts on communities.

9 Conclusion

This SIA identifies and evaluates the potential social impacts and benefits of the project by undertaking a review of impacts and benefits identified in the EIS SIA (EMM, 2022a) and Addendum SIA (EMM 2023a) to consider the effect of the modifications to the project description and updated community feedback. The SIA was completed in accordance with applicable legislation and guidelines, including the SIA Guideline (DPE 2023a).

The SIA study areas were defined in the Addendum SIA to reflect the geographic distribution of different types of social impacts and benefits. As the extended modified project area falls within the same social localities, the same area has been retained. The local study area and key townships consist of the communities that may experience both direct and indirect social impacts from the project and includes Birriwa, Merotherie and Dunedoo. Key townships within the local study area expected to act as service hubs are Gulgong and Mudgee. The regional study area is the Mid-Western Regional and Warrumbungle LGA, which are likely to experience few direct and more indirect social impacts of the project.

Through primary and secondary research, this SIA has sought to identify social impacts and benefits associated with the construction and operation of the project. Project impacts and benefits accrue particularly in the local area but will also be experienced in key townships and the regional study area.

The assessment of impacts and benefits associated with the modification identified 10 impacts and four benefits that required no further assessment. There were 13 matters that required further assessment including 10 impacts and three benefits, including one new potential benefit.

Table 9.1 provides a summary of social impacts and benefits of the modified project.

Table 9.1 | Summary of social impacts and benefits of modified project

Impact #	Impact/Benefit	Significance (as assessed in Addendum SIA)	Modification significance	Significance (mitigated/enhanced)	Change
Project planning					
D01	Lack of trust in decision making systems	Unmitigated: Medium Mitigated: Medium	Medium	Medium	No change
Pre-approvals and construction					
HW05	Health and wellbeing impact due to project related stress and anxiety	Unmitigated: Medium Mitigated: Medium	Medium	Medium	No change
Construction					
A03	Accessibility of community infrastructure and services	Unmitigated: Medium Mitigated: Low	Medium	Low	No change
L02	Livelihood benefit for enhanced employment opportunities for underrepresented groups	Unenhanced: Medium Enhanced: High	Medium	High	No change
L03	Livelihood impacts relating to limited workforce supply and job competition	Unmitigated: Medium Mitigated: Medium	Medium	Medium	No change

Impact #	Impact/Benefit	Significance (as assessed in Addendum SIA)	Modification significance	Significance (mitigated/enhanced)	Change
S01	Changes in amenity due to generation of dust, noise and vibration and lighting	Unmitigated: Medium Mitigated: Medium	Medium	Medium	No change
HW01	Safety risks for transport network users	Unmitigated: High Mitigated: Medium	High	Medium	No change
HW03	Risks associated with an increase in population in an isolated location, close to rural properties	Unmitigated: Medium Mitigated: Low	Medium	Low	No change
Construction and operation					
L04	Impacts to nearby agricultural producers	Unmitigated: Medium Mitigated: Low	Low	Low	No change
S03	Impact to surroundings from changes in ecological values and natural assets	Unmitigated: Medium Mitigated: Low	Medium	Low	No change
Life of project					
L01	Livelihood benefit related to use of local goods and services	Unenhanced: High Enhanced: High	Medium	Medium	Reduced from High to Medium
C01	Change to land use results in a sense of loss of cultural heritage for Aboriginal and Torres Strait Islander people	Unmitigated: High Mitigated: Medium	Medium	Low	Reduced from Medium to Low
HW06	Long-term safety benefits associated with improvements to Birriwa Bus Route South	n/a	Low	Low	New benefit

The assessment concludes that assessed impacts and benefits identified due to the modification are minor. There was one impact where ratings changed.

- Cultural impacts relating to loss of cultural heritage was assessed as medium (unmitigated) and low (mitigated).

There was one benefit where ratings changed.

- Livelihood benefit related to use of goods and services was assessed as medium (unenhanced) and medium (enhanced) from high.

The modification creates one new benefit.

- Potential long-term benefits associated with improvements to Birriwa Bus Route South was assessed. This new benefit was rated as low (unenhanced) and low (enhanced).

There are no High or Very High mitigated impacts. The residual 'medium' mitigated impacts associated with the modification principally include decision-making systems, health and wellbeing impacts due to project related stress and anxiety, and cultural impacts relating to potential loss of cultural heritage. If the recommended measures to avoid, reduce, or mitigate the potential negative social impacts are considered and adopted, the likelihood of any negative social outcomes from the project will be reduced, with the identified potential impacts anticipated to be adequately mitigated and managed.

Acronyms and abbreviations

Acronym	
ABS	Australian Bureau of Statistics
AC	Alternating current
ACHA	Aboriginal cultural heritage assessment
AHIMS	Aboriginal Heritage Information Management System
AHRC	Australian Human Rights Commission
AHURI	Australian Housing and Urban Research Institute
AIHW	Australian Institute of Health and Welfare
ASGS	Australian Statistical Geography Standard
BESS	Battery energy storage system
BOCSAR	Bureau of Crime Statistics and Research
CWO	Central-West Orana
DC	Direct current
DAWE	Department of Agriculture, Water and the Environment
DPIE	Department of Planning, Industry and Environment (Old DPE reference)
DPE	Department of Planning and Environment
DPI	Department of Primary Industries
EIS	Environmental Impact Statement
EMM	EMM Consulting Pty Ltd
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPA	Environment Protection Authority
EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EEC	Endangered ecological community
EIS	Environmental Impact Statement
EMM	EMM Consulting Pty Limited
EnergyCo	Energy Corporation of NSW
ha	hectares
IAIA	International Association for Impact Assessment
Km	kilometres
kV	Kilovolt
LALC	Local Aboriginal Land Council
LGA	Local Government Area

Acronym	
LHD	Local Health District
LEP	Local Environmental Plan
MW	Megawatts
NBSP	Neighbour Benefit Sharing Program
NSW	New South Wales
Planning Systems SEPP	<i>State Environmental Planning Policy (Planning Systems) 2021</i>
PV	Photovoltaic
RAPs	Representative Aboriginal Parties
REZ	Renewable Energy Zone
SEARs	Secretary's Environmental Assessment Requirements
SEIFA	Socio-Economic Indexes for Areas
SES	State Emergency Service
SIA	Social impact assessment
SIA Guideline 2023	Social Impact Assessment Guideline for State Significant Projects
SIA Technical Supplement 2023	Technical Supplement: Social Impact Assessment Guideline for State significant Projects
SSC	State suburb classification
SSD	State Significant Development
STE	State/Territory
SIA	Social impact assessment
TIA	traffic impact assessment
ACEN	ACEN Australia Pty Ltd

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Attachment A

Curriculum vitae



Caroline Wilkins

Associate Social Scientist
EMM Consulting Pty Limited

Professional Overview

Caroline is an Associate Social Scientist in the Social Assessment and Performance team at EMM. Caroline has over 20 years' experience designing, planning, implementing and evaluating major social programs in challenging operating contexts. She brings extensive knowledge and demonstrated application of social science methodologies and development strategies. Her skill set includes social impact assessment, social research, human rights assessments, community and stakeholder engagement, monitoring and evaluation, risk management, strategic planning, project management and reporting. Caroline provides practical insightful advice to clients to development and implementation of social risk mitigation and management.

Caroline has worked in a range of social settings, having led projects in Australia and internationally. Caroline is a critical thinker with highly developed problem-solving skills.

Qualifications and licences

Master of Social Science (International Development), RMIT University

Bachelor of Arts/Bachelor of Commerce, Deakin University

Member, Australian Evaluation Society

Member, International Association of Impact Assessment (IAIA)

Associate Member, Australasian Institute of Mining and Metallurgy (AusIMM)

Specialisation

Social Impact Assessment

Delivery of social performance advice

Community and Stakeholder Engagement

Monitoring and evaluation

Representative experience

Energy

- **Pioneer-Burdekin Pumped Hydro Energy Storage (PHES) project, 2024, Queensland Hydro, QLD** Pioneer-Burdekin PHES was a proposed 5,000 MW, 120-GW hour long duration PHES project situated in the Pioneer Valley, 70km west of Mackay. Provided technical support for the preparation of Scoping Report and Social Assessment and Management Plan (SAMP) for Exploratory Works. Tasks included review of project documentation, define project assumptions, social and health impact assessment (SHIA) study area definition, preparation of stakeholder and community profiles, and preliminary identification of social and health impacts in line with the Queensland Social Impact Assessment (SIA) Guideline (2018).
- **Oven Mountain Pumped Hydro Energy Storage Project (OMPS), OMPS Pty Ltd, 2022-2025.** Lead author of the Social Impact Assessment (SIA). The project involves the construction of a major new pumped hydro energy storage project situated 60 km south-east of Armidale, NSW. The project was declared Critical State Significant Infrastructure (CSSI) and will produce 900MW of firm energy storage. Responsibilities included planning and scheduling, scoping, preparation of the social baseline, extensive community consultation and stakeholder engagement including 80 in-depth interviews and two community surveys, data analysis, impact identification and risk assessment, development of social impact mitigation framework and reporting. An Amendment Report was also included in scope to capture changes to the design.
- **Social impact evaluation (SIE), social impact assessment (SIA) and social impact management plan (SIMP), Pilbara Decarbonisation Program, Fortescue Metals Group (FMG), WA, FMG is undertaking an industry leading program to decarbonise its iron ore mining operation in the Pilbara region, Western Australia.** The USD\$6 billion program includes various projects such as wind, solar, battery, transmission lines, port upgrades, green fleet (including rail and sea) and road systems. The SIE focused on identifying social value at global, national, regional and local scale. The SIA provided an assessment of social impacts and benefits for individual projects, and the program as a whole.
- **Muswellbrook Pumped Hydro Energy Storage Project, AGL/Idemitsu, 2023-current** Lead author of the Social Impact Assessment (SIA). The project involves the construction of a new pumped hydro energy storage project on a former coal mine site near Muswellbrook, NSW. Responsibilities include planning and scheduling, preparation of the social baseline, stakeholder engagement including in-depth interviews, data analysis, impact identification and risk assessment, development of social impact mitigation framework and reporting.
- **Deegee Solar and Battery Project, ACEN Australia, NSW, 2024-current** Lead author of the Social Impact Assessment (SIA). The project involves the construction of a major new solar and battery storage project situated approximately 5 km south-east of Uralla, NSW. The project will produce 320MW of energy and two hours of firm storage.
- **Koorakee Energy Hub, Social Scoping Report, Squadron Energy, NSW, 2023-2024** SIA Lead for the scoping report. The project involved construction of 167 wind turbine generators (1 GW), 2.2 million solar panels (1 GW), battery storage with a capacity of 1 GW and ancillary infrastructure situated 10 km from Euston, NSW. Scoping involved planning, identification of social locality, preparation of social baseline, engagement with key stakeholders, early identification of potential social impacts and preparation of a Social Impact Scoping Report and scoping worksheet.
- **Yambla Range Wind Farm, Social Scoping, Tetris Energy, NSW, 2024-current** SIA Lead for the Social Scoping phase. The project involves construction of 28 wind turbine generators and ancillary infrastructure 30 km north of Albury, NSW. Scoping involved planning, identification of social locality, preparation of social baseline, early identification of potential social impacts and preparation of a SIA Impact Scoping Report and scoping worksheet.

- **Balala Wind Farm Scoping Report, EDF Renewables, Uralla, NSW, 2025.** The project involves construction of 50 wind turbine generators and ancillary infrastructure near Uralla, NSW. Technical inputs included identification of social locality, preparation of social baseline, early identification of potential social impacts and preparation of a social scoping chapter and scoping worksheet.
- **Boorolong Wind Farm Social Scoping Report, Squadron Energy, NSW, 2022-current.** The project involved construction of 70 wind turbine generators and ancillary infrastructure near Armidale, NSW. Technical inputs included identification of social locality, preparation of social baseline, early identification of potential social impacts and preparation of a social scoping chapter and scoping worksheet.
- **Muswellbrook Solar Farm, ESCO Pacific, NSW 2022-2023** Lead author of the Social Impact Assessment. The project involves construction of a solar farm on the now closed Muswellbrook coal mine in Muswellbrook, NSW. Tasks included planning and scheduling, scoping, preparation of the social baseline, SIA stakeholder engagement, data analysis, impact identification and risk assessment, development of social impact mitigation framework and reporting.
- **Wellington Battery Energy Storage System (BESS), Social Impact Assessment (AMPYR Australia) 2022**

Mining and metals

- **Julia Creek/Richmond Critical Minerals Zone (CMZ) Social Baseline Study, Department of Resources, QLD 2024-2025** Prepared a social baseline study and cumulative assessment framework to identify potential impacts on and benefits for communities during the development of critical minerals projects in the CMZ. Conducted extensive engagement with 30+ stakeholders including Councils, proponents, local businesses, community groups and service providers in Mount Isa, Cloncurry, Julia Creek, Richmond and Hughenden.
- **Wimmera Project SIA, Iluka Resources, VIC, 2022-current** SIA Lead and project manager. Caroline is leading all phases of the Social Impact Assessment for the proposed new critical minerals mine near Horsham, Victoria. Responsibilities include client liaison, planning and scheduling, preparation of the social baseline, extensive stakeholder engagement, data analysis, impact identification and risk assessment, development of social impact mitigation framework and reporting.
- **Human rights risk assessment, Townsville Energy Chemicals Hub (TECH) Project, QLD 2023.** The project involves the design, construction and operation of a sustainable, high-purity battery materials refinery in Townsville, Queensland. Cost of construction is estimated at \$2.1 billion. The assessment focused on supply chains, risk factors such as supplier profile, high risk geographies, product complexity and high-risk procurement categories. Recommendations were made to establish policy, systems and processes to assess, monitor and report on human rights issues and risks and establishment of a human rights (supplier) due diligence process.
- **Integra Underground Mine Closure SIA, Glencore, Singleton, NSW, 2022-23.** Lead author and project manager. Caroline led all phases of the Social Impact Assessment for the coal mine closure including client liaison, planning and scheduling, preparation of the social baseline, gathering of primary data through the survey of mine employees and supplier businesses, stakeholder engagement and field study, data

analysis, impact identification and risk assessment, development of social impact mitigation framework and reporting.

- **Ok Tedi Mining Limited, Social Closure Transition Framework and Strategy, Australia, 2023.** Co-author and project manager. Caroline worked closely with the OTML Social Sustainability team to develop a social closure framework and strategy to support mine closure planning. Responsibilities included reviewing existing business frameworks, preparing a literature review, review of key documentation and conducting in-depth interviews with key stakeholders including various OTML teams, local suppliers and Papua New Guinea government officials. Components include future of the mine-owned town (Tabubil), public assets and services transition plan, OTML employees and contractors transition, role of the Ok Tedi Development Foundation (OTDF), post closure environmental sustainability, community investments and trust funds, and infrastructure development/(Tax Credit Scheme (TCS).
- **Sustainability Report, Ok Tedi Mining Limited,** technical assistance for Annual Sustainability Report 2021, 2022

Infrastructure

- **Line 965 Armidale – Lower Creek, NSW, 2023-current** Lead author for social scoping chapter and Social Impact Assessment report. The project involves upgrading Transmission Line 965 to enable energy produced by the Oven Mountain Pumped Hydro Energy Storage Project to be transferred to the national electricity grid.
- **Dungowan Dam EIS and pipeline REF, Water Infrastructure NSW, 2022** SIA technical input for the Social Impact Assessment. The project was declared Critical State Significant Infrastructure (CSSI) and included a larger new dam downstream of the existing Dungowan Dam and a replacement pipeline. The SIA included identification of potential social impacts, and mitigation approaches to inform forward project planning and construction.



Samantha McCrea

Associate Director Social Performance
EMM Consulting Pty Limited

Professional Overview

Samantha is a seasoned social performance and consulting leader, having worked across Australia and Asia for over ten years collaborating with a range of companies from financial institutions through to private sector mining, oil and gas and renewables companies. She has over 20 years' experience focused on consulting, specializing in the consideration of community impacts, human rights and modern slavery, green energy transition, stakeholder engagement and social risk management. She spent over 10 years living and working in Indonesia advising a range of mining, oil and gas and renewables clients on ESG matters. Sam has worked in South East Asia for over 10 years supporting companies such as Weda Bay Nickel, PTFI, Adaro Energy and Vale Indonesia to improve their social performance. Of note, she supported PTFI in its 2019 review of its Partnership Fund. As such as has a good understanding of the operations in Papua, the mine context, key stakeholders and local challenges.

Qualifications and licences

Master of Science (Environmental Technology), Imperial College London, 1999-2000

Bachelor of Engineering (Chemical Engineering), University College London, 1994-1998

Specialisation

Social Performance
Business Development
Project Leadership
Stakeholder Management
People Leadership & Development
Sustainability/ESG Advisory

Representative experience

Fortescue Energy, Global Social Performance Manager

- Responsible for leading the governance and compliance aspects of our global developments with respect to communities; this role required a high level of collaboration across all sustainability and project functions. Key responsibilities included development, implementation training of "S" standards and guidance notes for all global projects across the business. Design of corporate community investment and funding processes and oversight of corporate stakeholder relations.

JLL Asia Pacific, Energy & Sustainability Solution Lead

- Led the business development activities for the sustainability team with a focus on decarbonization and ESG across south-east Asia within the real estate sector. Responsibilities included collaborating with APAC business functions and existing clients to identify ESG opportunities, lead the development of proposals and track sales and opportunities pipeline.

ERM Indonesia, APAC Social Performance Partner

- Responsible for the implementation of projects led by ERM in Indonesia and South East Asia for a range of sectors including renewables, power, financial, mining and oil and gas. Samantha led a team of 20 plus social performance consultants and was responsible for business operations and performance in Indonesia. Her role entailed advising a range of lenders and developers on project development, to ensure community risks were identified and mitigated to acceptable levels that adhere to relevant international standards whilst managing reputation risks. She also was the businesses' social performance lead for Asia Pacific, advising clients on specialized matters to embed

and operationalize sustainability into business and build the regional team's capacity. She worked closely with multinational clients including Engie, Shell, Chevron, Freeport McMoran, Macquarie Group, ANZ, IFC and Sinarmas as well as numerous government entities, research and lobbying bodies (including the Indonesian Business Council for Sustainable Development) and NGOs. I also held the role of sustainability lead internally across Asia Pacific, executing and driving the development of action plans, sustainability initiatives and employee awareness across ten countries.

ERM Australia, Australia Social Performance Lead

- Responsible for the delivery of a range of social studies across Australia and South East Asia for mining, power and oil and gas clients. Key clients included Rio Tinto, BHP Billiton, Woodside, BG, Origin and Wesfarmers all seeking approvals as well as to mitigate reputational issues and ESG impacts. Sam frequently participated and led numerous assessments, stakeholder consultation activities and due diligence projects across the region identifying risks, outlining actions to address risks and monitoring their implementation. She was accountable for the West Australian business KPIs, managing commercial aspects, leading existing and new client accounts as well as people recruitment and development and thought leadership with the industry.

ERM UK, Social Performance Consultant.

- Her primary role entailed participation in field works, gathering community data to inform the impact assessment process and reporting to clients on development risks and management measures. Clients included DFID, Chevron, Shell, BG, InfraCo and Shell. The strong foundation she gained during this time allowed her to fully comprehend the potential social impacts and risks associated with a range of projects, grow her understanding of international standards and enabled her to provide practical recommendations for mitigation/risk management. Whilst employed in the UK she worked in Mauritania, Angola, Nigeria, Ghana, Libya, Uganda, Zambia, Kazakhstan and Palestine.

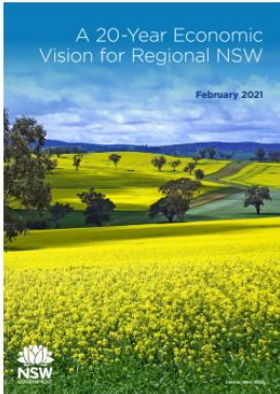
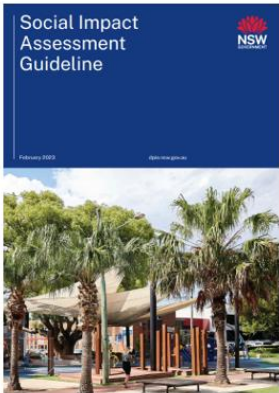
Attachment B




Policy, planning and cumulative context



B.1 State strategies, plans, and guidelines



This section provides a summary of the relevant strategies, plans, and guidelines to the project at the NSW and state level which have particular bearing on assessment of the modification.

Table B.1 State strategies, plans and guidelines

Name	Description and relevance to the amended project
<p>A 20-Year Economic Vision for Regional NSW (NSW Government, 2021)</p> 	<p>A 20-Year Economic Vision for Regional NSW (the 20 Year Economic Vision) presents a strategy with NSW government priorities for Regional NSW. The strategy provides an overview of the current economic and demographic environment, including the external economic forces impacting regional growth.</p> <p>The 20 Year Economic Vision recognises a significant economic opportunity in the Central West, where the CWO REZ is expected to draw in private investment and diversify regional development and employment opportunities.</p> <p>The project will allow for investment opportunities in renewable energy, particularly in the upskilling and reskilling of workers to drive employment and economic growth.</p>
<p>NSW Electricity Infrastructure Investment Roadmap (DPIE, 2020a)</p>	<p>The <i>NSW Electricity Infrastructure Roadmap</i> and its implementing legislation the <i>Electricity Infrastructure Investment Act 2020</i> (EII Act), coordinates investment in transmission, generation, storage and firming infrastructure as ageing coal-fired generation plants retire. The roadmap includes actions that will deliver “whole-of system” benefits. The roadmap sets out a plan to deliver the state’s first five REZs in the Central-West Orana, New England, South-West, Hunter-Central- Coast, and Illawarra regions.</p> <p>The project is within the CWO REZ and is ideally placed to contribute to the success of the roadmap.</p>
<p>Social Impact Assessment Guideline for State Significant Projects (DPE, 2023a))</p> 	<p>The Social Impact Assessment Guideline for State Significant Projects (SIA Guideline) provides direction on assessing social impacts arising from State significant projects in the context of the environmental impact assessment process under the EP&A Act. The Guideline states that SIA is the process of identifying, predicting, evaluating and developing responses to the social impacts of a proposed State significant project which requires proportionate and tailored assessment to suit each project’s context and the nature and scale of its potential impacts and benefits. The SIA Guideline requires that all State significant projects have a clear and consistent approach to assessing social impacts. The SIA Technical Supplement 2021 accompanies the SIA Guideline to provide specific methods and techniques for the identification and assessment of social impacts and benefits (DPE, 2023b).</p>

Name	Description and relevance to the amended project
<p>Cumulative Impact Assessment Guidelines for State Significant Projects (DPE, 2022a)</p> 	<p>The Cumulative Impact Assessment Guidelines for State Significant Projects (the CIA Guidelines) form part of the government guidelines that are to be taken into consideration during the assessment of State significant projects. The CIA Guidelines set expectations for assessing and addressing project interactions with other projects in the same area.</p> <p>The CIA Guidelines are relevant to project planning due to its unique position amongst a cluster of proposed REZ infrastructure, indicating potential to result in cumulative visual amenity and land use impacts. Concurrent major infrastructure projects in the region also have the potential to create cumulative impacts relating to the presence of large non-local workers in the area. This includes access to housing, accommodation, and services as well as traffic changes.</p> <p>Concerns regarding cumulative impacts were also raised frequently throughout EIS engagement and SIA specific engagement. Section 8 of this SIA addendum report identifies and discusses the amendment's potential contribution to cumulative social impacts.</p>
<p>Undertaking Engagement Guidelines for State Significant Projects (DPE, 2022b)</p> 	<p>The Undertaking Engagement Guidelines for State Significant Projects (the Engagement Guidelines) describes the requirements for effective engagement on State significant projects in NSW. The Engagement Guidelines outlines requirements for proponents to engage with the community, councils, and government agencies at each phase of the environmental assessment. The engagement guideline also outlines the actions that DPE will take and identifies opportunities for community participation during each phase. It emphasises early planning and engagement, effective engagement, proportionate engagement, innovation, and transparency. The primary audience of this guideline is proponents and their teams, who are responsible for engaging with the community and other stakeholders during each phase of the environmental assessment process. The engagement guideline also provides the community and other stakeholders with a better understanding of how, when and on what they can provide feedback, and how it will be addressed by proponents and decision-makers.</p>
<p>Revised Large-Scale Solar Energy Guideline (DPE, 2022c)</p> 	<p>The Revised Large-Scale Solar Energy Guideline provides guidance on the planning framework for the assessment and determination of large-scale solar energy projects under the EP&A Act. The guideline identifies the key planning considerations relevant to solar energy development in NSW and provides policy and technical guidance on key issues including visual impacts, land use conflicts and benefit sharing. This includes guidance on how issues can be avoided, managed, and mitigated to optimise the environmental, social, and economic outcomes of a solar energy project.</p>


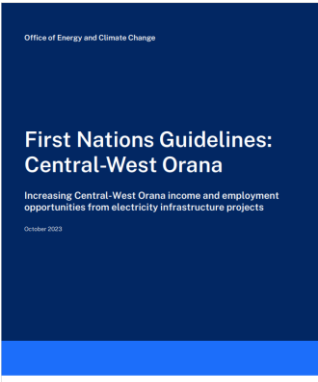
Name	Description and relevance to the amended project
<p><i>Net Zero Plan Stage 1: 2020–2030</i> (DPIE, 2020c), Implementation Update, <i>Net Zero Plan Implementation Update 2022</i></p> 	<p>The <i>Net Zero Plan Stage 1 2020–2030</i> (DPIE 2020b) outlines the NSW Government’s plan to grow the economy and create jobs while helping the state to deliver a 35% cut in emissions compared to 2005 levels.</p> <p>The <i>Net Zero Plan Stage 1 2020–2030 Implementation Update</i> (DPIE 2021a) outlines the implementation of the Electricity Infrastructure Roadmap and REZs.</p> <p>The <i>Net Zero Plan Implementation Update 2022</i> (DPIE 2022a) provides an update to the implementation of the Electricity Infrastructure Roadmap and REZs. It identifies that the State is projected to reduce its emissions by 70% below 2005 levels by 2035.</p> <p>The project contributes to Priority 1 of the Plan: “drive uptake of proven emissions reduction technologies that grow the economy, create new jobs or reduce the cost of living.”</p> <p>The CWO REZ is also identified in the Plan as critical in replacing retiring coal fired generators in NSW.</p>
<p><i>Climate Change (Net zero future) Act 2023</i> (NSW, November 2023)</p>	<p>The <i>Climate Change (Net zero future) Act 2023</i> Legislates NSW’s targets to reduce GHG emissions by 50 by 2030 and 70 per cent by 2035 to achieve net zero GHG emissions by 2050.</p> <p>The project would contribute to emission reductions required in this legislation through the uptake of renewable energy</p>
<p><i>State Infrastructure Strategy 2022 – 2042</i> (Infrastructure NSW, May 2022)</p> 	<p>Developed by Infrastructure NSW, the 20-year State Infrastructure Strategy is a plan to guide NSW Government investment decisions. The ‘Staying Ahead’ strategy for 2022–2042 “assesses infrastructure problems and solutions, and provides recommendations to best grow the State’s economy, enhance productivity and improve living standards for [the] NSW community” (Infrastructure NSW 2022).</p> <p>The NSW Government is targeting a 50 % cut in emissions by 2030 with a goal of Net Zero emissions by 2050 and the State Infrastructure Strategy outlines a key objective to “achieve an orderly and efficient transition to Net Zero”. This objective is supported by a series of recommendations, including the “Steadfast implementation of the NSW Electricity Infrastructure Roadmap in support of reliability and affordability”.</p> <p>Solar and BESS projects play a key role in the energy transition, with the State Infrastructure Strategy identifying that “...the continued rapid shift to renewables will create a need to accelerate investment in replacement firming capacity – generally gas peaking generators, batteries and pumped hydro facilities”.</p> <p>The project aligns with the State Infrastructure Strategy by providing this needed firming capacity.</p>
<p><i>NSW Electricity Strategy 2019</i> (DPIE, 2019)</p>	<p>The <i>NSW Electricity Strategy</i> (DPIE, 2019) is the NSW Government’s plan for a reliable, affordable and sustainable electricity future that supports a growing economy and sets out an approach to respond to emerging energy security challenges. The Strategy recognises that where variable generators are unable to satisfy demand, other technologies that can provide electricity on demand (such as storage) are required.</p> <p>Principle 1 of the NSW Electricity Strategy acknowledges that renewable electricity generation is the cheapest form of reliable electricity generation and calls upon investment into these technologies to reduce electricity prices and ensure network reliability.</p> <p>The NSW Government’s plan for a reliable, affordable, and sustainable electricity future. The purpose is to improve the efficiency and competitiveness of the NSW electricity market through an integrated approach to all demand and supply options. It encourages investment in lower cost generation and energy saving technologies and identifies “delivering more resilient electricity supplies’ as a key action”</p> <p>The project would increase supply of electricity to market and contribute to sustainable electricity outcomes (solar generation and battery storage).</p>

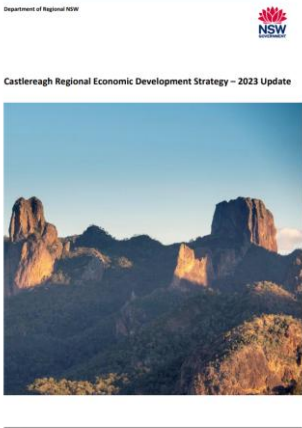
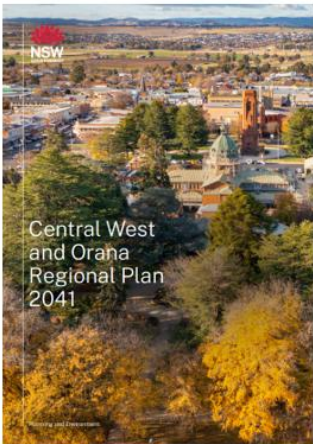
Name	Description and relevance to the amended project
<p data-bbox="156 219 478 275"><i>NSW Energy Security Target and Safeguard 2020</i> (DPIE, 2020b)</p> <div data-bbox="178 297 237 356">  </div> <p data-bbox="178 376 347 387"><small>DEPARTMENT OF PLANNING, INDUSTRY & ENVIRONMENT</small></p> <p data-bbox="178 392 295 448">Energy Security Target and Safeguard <small>Consultation paper</small></p>  <p data-bbox="178 705 255 714"><small>environment.nsw.gov.au</small></p>	<p data-bbox="598 219 1449 510">The objective of the <i>NSW Energy Security Target and Safeguard</i> (DPIE, 2020b) is to give the market certainty on the amount of new electricity generation and distribution capacity that is needed to deliver a reliable energy system over the medium to long term, in response to the retirement of several large coal-fired generators. The NSW Energy Security Target and Safeguard is established under the <i>NSW Electricity Infrastructure Investment Act 2020</i> and is equivalent to the maximum demand experienced in NSW every 10 years, plus a reserve margin. AEMO has been appointed as the Energy Security Target Monitor and its first report released in December 2021 (AEMO 2021) predicts a target breach over the 2029–30 period (i.e. that there will be insufficient infrastructure to meet the Energy Security Target).</p> <p data-bbox="598 519 1396 575">This signals the urgent need for new generation and transmission infrastructure to ensure energy security for NSW consumers.</p> <p data-bbox="598 584 1449 640">The project will contribute additional electricity generation to the NEM and will assist in ensuring energy security for NSW consumers.</p>

B.2 Regional strategies and plans

This section provides a summary of the relevant strategies and plans to the modification at the regional level. A summary of these plans and strategies, and their relevance to the project, are provided in Table B.2.

Table B.2 Regional strategies and plans

Name	Description and relevance to the project
<p><i>Central Orana Regional Economic Development Strategy – 2023 Update</i> (Department of Regional NSW, 2023)</p> 	<p>The Central Orana Regional Economic Development Strategy – 2023 Update guides the long-term economic vision and associated strategy for the Central West Orana (CWO) region, which include the Dubbo Regional LGA and the Warrumbungle Shire LGA.</p> <p>This strategy establishes the CWO region as experiencing shifts in engine industries, where renewable energy generation is emerging in this space, thanks to its natural endowments and connectivity to high-voltage transmission infrastructure. This presents opportunity to leverage capacity within the construction industry to attract investment that will ultimately grow local supply chains to serve existing needs and those for REZ infrastructure.</p> <p>The strategy also refers to the potential for land use conflict noting that large-scale renewable energy projects places demand on rural land, increasing competition for land, and placing upward pressure on land values. Another vulnerability accompanying this opportunity is the potential for the workforce demand amongst concurrent delivery of major projects and its impact on an existing housing supply challenge within the CWO region.</p> <p>The project will support this strategy through its contribution to economic opportunities within the region through REZ infrastructure. It will also have implications to housing supply challenges, through cumulative impacts with other REZ projects related to the presence of non-local workforce and the need to house them during construction.</p>
<p><i>First Nations Guidelines: Central-West Orana – 2023 Update</i></p> 	<p>The First Nations Guidelines: Central-West Orana is a region-specific guidance for the development of an Aboriginal Participation plan for Electricity Infrastructure Roadmap Projects. The region-specific guidelines were developed in consultation with a Central-West Orana working group, consisting of local community representatives, including those that provide support and services to the various Aboriginal communities in the region.</p> <p>The guidelines provide a profile on the Aboriginal community, including demographic profile, the landscape of organisations, businesses, and groups, as well as significant annual dates and events for the community. The community profile contained within the guidelines provides a basis for understanding potential social impacts and benefits in this region.</p> <p>Additionally, the guidelines provide a general outline on how local Aboriginal communities may wish to be engaged with, or participate in, various aspects of the Electricity Infrastructure Roadmap. This is an important consideration for planning EIS and SIA engagement activities to build respectful and ongoing relationships.</p>



Name	Description and relevance to the project
<p><i>Castlereagh Regional Economic Development Strategy 2018-2022 – 2023 Update</i></p> 	<p>The Castlereagh Regional Economic Development Strategy 2018-2022 includes one LGA relevant to this SIA - Warrumbungle LGA. However, it is noted that while a portion of the access road for the project sits within the Warrumbungle LGA, the proposed accommodation facility sits entirely within the Mid-Western Regional LGA, as does all of the solar and BESS infrastructure associated with the project.</p> <p>Renewable energy was recognised by the Strategy as an endowment which plays a key role in the economic development of regions. The Region’s abundance of solar and wind energy resources allows for “significant opportunities for exploring the potential for further investment in projects within the Region and link to supporting local industries”.</p> <p>The report identifies various strategies to assist with the economic development of the Region, which includes investment in water and energy utilities infrastructure. In particular, it aims to address gaps in the current energy transmission network through partnerships with renewable energy farms or investment in small-scale co-generation infrastructure. This is to lower business costs and disperse benefits to the community particularly for local residents and businesses.</p> <p>The project will contribute to the aims of the Strategy by providing more opportunities and energy infrastructure for the Castlereagh Region.</p>
<p><i>Central West and Orana Regional Plan 2041 (DPE, 2022d)</i></p> 	<p>The Central West and Orana Regional Plan 2041 (DPE, 2022d) is the five-year update to the Central West and Orana Regional Plan 2036. The plan covers three LGAs relevant to the project – Dubbo, Narromine, and Warrumbungle Shire LGAs. The aim of the plan is to “guide land use planning decisions in the region by the NSW Government, councils and others to the year 2041”.</p> <p>One of the plan’s objectives include supporting the NSW’s transition to Net Zero by 2050 and deliver the Central-West Orana Renewable Energy Zone. It is noted by the plan that there should be careful management of the transition from fossil fuels to renewables to “ensure the region benefits from economic diversification opportunities” as well as ongoing support for existing industries.</p> <p>The project aligns with the plan’s renewable aims as well as supporting workforce and employment in the region to ensure ongoing community benefits.</p> <p>The following objectives of the plan are relevant to the project:</p> <ul style="list-style-type: none"> • Objective 2: Support the State’s transition to Net Zero by 2050 and deliver the Central–West Orana Renewable Energy Zone. • Objective 18: Leverage existing industries and employment areas and support new and innovative economic enterprises.

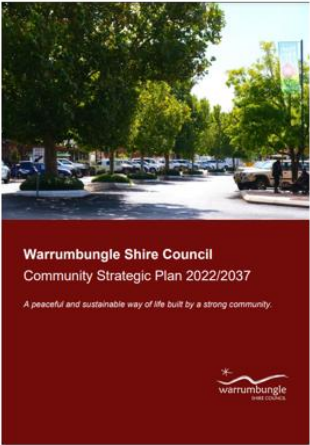

B.3 Local government strategies and plans

The modification is proposed within the Mid-Western Regional LGA; however, the broader project effects (direct and indirect) are anticipated to extend to the Warrumbungle LGA. The plans for Dubbo Regional Council have also been included..

The Mid-Western Regional Council (MWRC), Warrumbungle Shire Council (WSC), and Dubbo Regional Council (DRC) have local plans and strategic plans that articulate their vision for the future of their communities. Plans relevant to the modification are summarised in Table B.3.

Table B.3 Local government strategies and plans

Name	Description and relevance to the project
<p><i>Mid-Western Region Community Plan – Towards 2040</i></p> 	<p>The Mid-Western Region Towards 2040 Community Plan encourages active communication between Council and the community through engagement and participation in planning processes.</p> <p>The plan represents an opportunity to create and foster community-based goals, values, and aspirations – to drive a sustainable community that reconciles the economic, social, environmental, and civic leadership priorities for the region.</p> <p>The plan aims to:</p> <ul style="list-style-type: none">• look after the community• protect the natural environment• build a strong local economy• connect and link the region to the rest of NSW• exercise good governance and meet the needs of the community.
<p><i>Our Place 2040 Mid-Western Regional Local Strategic Planning Statement</i></p> 	<p>The <i>Mid-Western Regional Local Strategic Planning</i> sets out the 20-year vision for land use planning in the Mid-Western Regional LGA.</p> <p>Planning Priority 7 of the Local Strategic Planning Statement is to “support the attraction of a diverse range of business and industries”. To support this planning priority the <i>Local Strategic Planning Statement</i> contains a land use action to “consider renewable energy development in appropriate areas that avoids impacts on the scenic rural landscape and preserves valuable agricultural land.”</p> <p>The project will contribute to Planning Priority 7 of the <i>Local Strategic Planning Statement</i> and has been sited to minimise impacts on productive agricultural land and visual amenity, where practicable.</p>

Name	Description and relevance to the project
<p>Warrumbungle Shire Council Community Strategic Plan 2022/2037 (Warrumbungle Shire Council, 2022)</p> 	<p>The Warrumbungle Shire Council Community Strategic Plan 2022/2037 (Warrumbungle Shire Council, 2022) captures the needs and aspirations of the community in Warrumbungle Shire LGA.</p> <p>The CSP outlines the community's values which included having a unique natural environment that is protected and enhanced and a broad range of markets to ensure economic resilience. More specifically, the theme of strengthening the local economy identified an objective of ensuring that "the community benefits from the economic returns of local renewable energy production, and mining and extractive industries". This included the strategy of identifying and developing opportunities to realise Warrumbungle Shire LGA's potential as a location for the production of renewable energies.</p> <p>The project is relevant to the visions of the CSP by contributing to economic returns of local renewable energy production, particularly through workforce capacity.</p>
<p>Towards 2040: Community Strategic Plan (Dubbo Regional Council, 2022)</p> 	<p>Published by Dubbo Regional Council, Towards 2040: Community Strategic Plan (Dubbo Regional Council, 2022) outlines the community's aspirations and priorities for the future of the region through to 2040. The Community Strategic Plan (CSP) covers high-level strategy that will influence the direction of Dubbo Regional Council.</p> <p>The plan found that the values of the regional community includes:</p> <ul style="list-style-type: none"> • Growth of villages and rural areas • Planning for climate change as well as protecting and managing natural assets and resources • Strong and diverse local jobs and businesses. <p>More specific to the project, there is an objective of encouraging and supporting investment in renewable energy opportunities. Further, there is an objective of fostering employment and investment opportunities for all sectors of the community, which is addressed by the project's workforce capacity.</p> <p>Challenges for the community in Dubbo Regional LGA include ensuring the capability of emergency organisations and local State Emergency Services to respond to emergencies, which will be considered in this SIA. The project is also relevant to the challenges of short-term accommodation in the Dubbo Regional LGA, as the CSP aims to ensure that "short-term accommodation is available for the workforce associated with significant infrastructure, major projects and employment generators".</p>

B.4 Cumulative context

In acknowledgment of the number of energy projects being advanced in the CWO REZ, there is a focus on understanding and planning for cumulative impacts across a number of key impact areas. Cumulative impacts are a key concern raised by communities and stakeholders.

This section provides consideration of the project's potential to generate cumulative impacts and/or benefits in the region related to the context and existing trends within the local and regional study areas. A community may experience cumulative impacts when multiple projects occur in a similar timeframe or will be located in a similar geography to other projects.

The Cumulative Impact Assessment Guidelines for State Significant Projects (DPE, 2022a) are part of the Rapid Assessment Framework introduced in 2021, aimed at improving the assessment of major projects in NSW.

The Project is located within the Mid-Western Regional LGA, with impacts extending to the Warrumbungle Shire LGA. The cumulative impact assessment has considered other projects (as listed on the DPE Major Projects Planning Portal) that have the potential to interact with the project. As such, future projects within a 100 km distance from the Project site have been considered regarding potential cumulative impacts such as demand on services, accommodation, and for local workforces. Because there is also significant awareness of potential cumulative operational impacts (visual, land use) with other, nearby REZ infrastructure, existing REZ infrastructure has also been considered in relation to these impacts.

Since the amendment focuses on the workforce accommodation facility, the consideration of cumulative impacts has been broken down into investigating a radius around the urban centres of Dunedoo and Gulgong. For Dunedoo, projects within 30 km radii have been considered due to the higher concentration of projects/project components and for Gulgong, projects within 10 km radii have been considered. Other REZ projects within 100 km of the site have also been included. As such, the cumulative impact projects/project components include:

- **Projects within 30 km of Dunedoo** – fourteen projects were identified in this category, including the Merotherie Energy Hub which is a component of the Central-West Orana REZ Transmission project
- **Projects within 10 km of Gulgong** – there were two more projects identified in this category. This includes an operational solar farm
- **Other REZ projects** – there were 27 projects identified in this category, of which many were renewable energy projects located in Dubbo Regional LGA in the Central-West Orana REZ.

Table B.4 provides a summary of the key projects from the full list that are expected to result in cumulative impacts with the Birriwa Solar and Battery Project, particularly in terms of workforce and accommodation. These are arranged by the three categories as described above and provide a summary of anticipated impacts and/or benefits. To assess these impacts, an indicative construction timing of late 2025 to early 2028 (28 months) for the project has been assumed.

Table B.4 Cumulative impact assessment – summary of key Project interactions


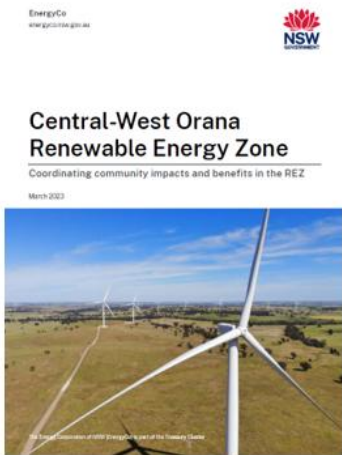
Project	Location	Expected construction workforce (peak FTE)	Expected number of jobs sourced locally
Projects within 30 km of Dunedoo			
Dunedoo Solar Farm	Dunedoo	125	90
Orana Wind Farm	Dunedoo	580	-
Birriwa Solar and Battery project	Birriwa	650	240


Project	Location	Expected construction workforce (peak FTE)	Expected number of jobs sourced locally
Cobbora Solar Farm	Cobbora	700	-
Spicers Creek Wind Farm	Spicers Creek	590	118
Sandy Creek Solar Farm	Dunedoo	600	-
Dapper Solar Farm	Dapper	350	-
Central-West Orana Renewable Energy Zone Transmission project	Merotherie	1,200	-
	Elong Elong		
Valley of the Winds Wind Farm	Coolah	400	280
Tallawang Solar Farm	Tallawang	580	190
Narragamba Solar Farm	Merotherie	400	-
Avonside Solar Farm	Dunedoo	300	15
Projects within 10 km of Gulgong			
Stubbo Solar Farm	Stubbo	400	200
Bellambi Heights BESS	Bellambi Heights	400	-
Beryl Solar Farm	Beryl	Operational	
Mayfair Solar Farm	Gulgong	150	3
TOTALS		7,425	1,136

B.4.1 Breakdown of relevant studies and assessments

Table B.5 draws upon studies relevant to the modification. It also provides a review of SIA reports completed for similar, nearby REZ projects.

Table B.5 Relevant studies and assessments

Name	Description and relevance to the project
<p>Employment, Skills, and Supply Chains: Renewable Energy in NSW (Briggs, et al., 2022)</p> 	<p>Commissioned by the NSW Renewable Energy Sector Board and the DPE, the Institute of Sustainable Futures, University of Technology Sydney and SGS Economics and Planning developed this assessment of employment and industry development opportunities associated with the Electricity Infrastructure Roadmap. The report details renewable energy supply chains, employment and skills, and also provides an employment assessment for each REZ.</p> <p>The report is relevant to identifying and assessing potential social impacts and benefits associated with the project. The report provides insights to regional and broader drivers, and an assessment of workforce and skills requirements across the life of projects, which is drawn upon in the baseline section (Section (Baseline chapter on workforce)) of this report to build a more nuanced basis for assessing potential impacts.</p> <p>Some overall findings from this report include:</p> <ul style="list-style-type: none"> the pace of change in the energy sector poses a challenge to predict and plan for local workforce capacity and skilling skills shortages emerged as the number one identified constraint during stakeholder interviews short construction timeframes and uncertainty on contracts discourages investment in training workers and can even deter new entrants.
<p>Central-West Orana Renewable Energy Zone: Coordinating community impacts and benefits in the REZ (EnergyCo, 2023)</p> 	<p>Published by the Energy Corporation of NSW (EnergyCo), this report summarises community impacts and benefits from renewable energy projects in the Central-West Orana REZ. The report is relevant as the Central-West Orana REZ is the overarching REZ for the project.</p> <p>Potential impacts of multiple renewable energy projects identified by the report include:</p> <ul style="list-style-type: none"> the potential accommodation impacts from construction workforce on the existing constrained accommodation and housing supply increasing demand for skilled labour in the energy sector in light of current skill shortages. <p>Potential benefits / opportunities include:</p> <ul style="list-style-type: none"> road upgrades to facilitate the construction of projects in the REZ renewable energy infrastructure could help improve telecommunication coverage for communities in the region promoting efficient waste management and circular economy.

Name	Description and relevance to the project
<p>Renewable energy generation and agriculture in NSW's rural landscape and economy – growth sectors on a complementary path (NSW Agriculture Commissioner, 2022)</p>  <p>The image shows the front cover of a report. At the top, the title 'Renewable energy generation and agriculture in NSW's rural landscape and economy – growth sectors on a complementary path' is written in a small, sans-serif font. Below the title, it says 'A report by the NSW Agriculture Commissioner'. The date '8 November 2022' is in the top right corner. The main visual is a photograph of a vast field of solar panels stretching towards a horizon under a bright, hazy sky. The panels are arranged in neat rows, and the overall tone is warm and hopeful.</p>	<p>This report was formed as a review of existing framework to manage issues and opportunities relating to growth in the renewable energy and agriculture sectors. Informed by submissions to the Renewable Energy and Agriculture in NSW: Issues paper, (NSW DPI, 2022), this report recognises competing needs for land, including for agricultural, housing, and renewable energy infrastructure. Differing interests are recognised as rendering different patterns of land use, leading to land use conflict.</p> <p>The report provides an assessment of potential impacts to the agricultural sector in NSW using four growth scenarios for the rollout of Roadmap infrastructure.</p> <p>The report provides a land-use profile for the CWO REZ, describing the region as highly a highly diverse and the total area is made up of 88% rural land, where 34% of rural land is considered state significant agricultural land (SSAL).</p> <p>Across broader NSW, the study found that in the worst-case scenario for land use changes associated with the roll out of renewable energy infrastructure to 2051, there is no material impact to agricultural production. It does suggest, however, that in some specific cases, there will be 'small local effects', mainly attributable to the sheer number of projects.</p> <p>For example, in the Central West Orana, there are some higher land use change results under the worst-case scenario, where 21.5% of SSAL would be required for wind and solar projects. The step change scenario, considered to be the most likely scenario, sees 9.2% of SSAL would be required.</p>

Attachment C

Social baseline study

The social baseline study for the Addendum SIA has been reviewed and updated where updated data is available. Sections included in this Attachment incorporate updated data.

C.1 Housing and accommodation

C.1.1 Housing statistics

In 2021, the local area had the smallest proportion of occupied dwellings out of the study area with 81.5%. In comparison, the regional area had 84.4% of occupied dwellings and the area of reference had 88.9% of occupied dwellings.

The most common housing type in the local area was separate houses, which was higher than the key townships (86.4%), regional area (92.4%) and the area of reference (88.2%). Key townships had one of the highest proportions of semi-detached, row or terrace house, or townhouse (10.6%) compared to the regional area (5.0%) and area of reference (6.6%) but was lower than NSW (11.7%).

Most households in the local area were lone family households however, there was a higher proportion of lone person households compared to the rest of the study areas. As such, the local area had the lowest proportion of family households out of the study area. One reason for the higher proportion of lone person households may be the number of retired and single people in the local area and the very limited access to retirement home facilities. Increased longevity means people often outlive their partners. In rural areas in particular, connection to place is strong and people often seek to remain in their communities as they age rather than move away.

Finally, the majority of dwellings were owned outright in the local area but there was also a higher proportion of other tenure type compared to the other study areas. The key townships had a higher proportion of rented dwellings compared to the rest of the study area. The high rates of rental tenure may be attributable to a number of factors including: the presence of a sizeable health sector and education sector workforces, which cycle through on a contractual basis; the attractiveness of the locations as base locations for workforces associated with the construction of major projects (e.g. mining, renewable energy and infrastructure) in the regional area; and the overall residential rental costs and rental availability at the time of the 2021 census.

Table C.1 Housing type and structure

	Separate house	Semi-detached, row or terrace house, townhouse	Flat or apartment	Other dwelling	Total private dwellings	Total occupied dwellings
Local area total	96.2%	2.5%	0.0%	0.6%	583	81.5%
Regional area total	92.4%	5.0%	1.2%	1.0%	15,454	84.4%
NSW	65.6%	11.7%	21.7%	0.7%	3,199,988	90.6%

Table C.2 Household composition, 2021

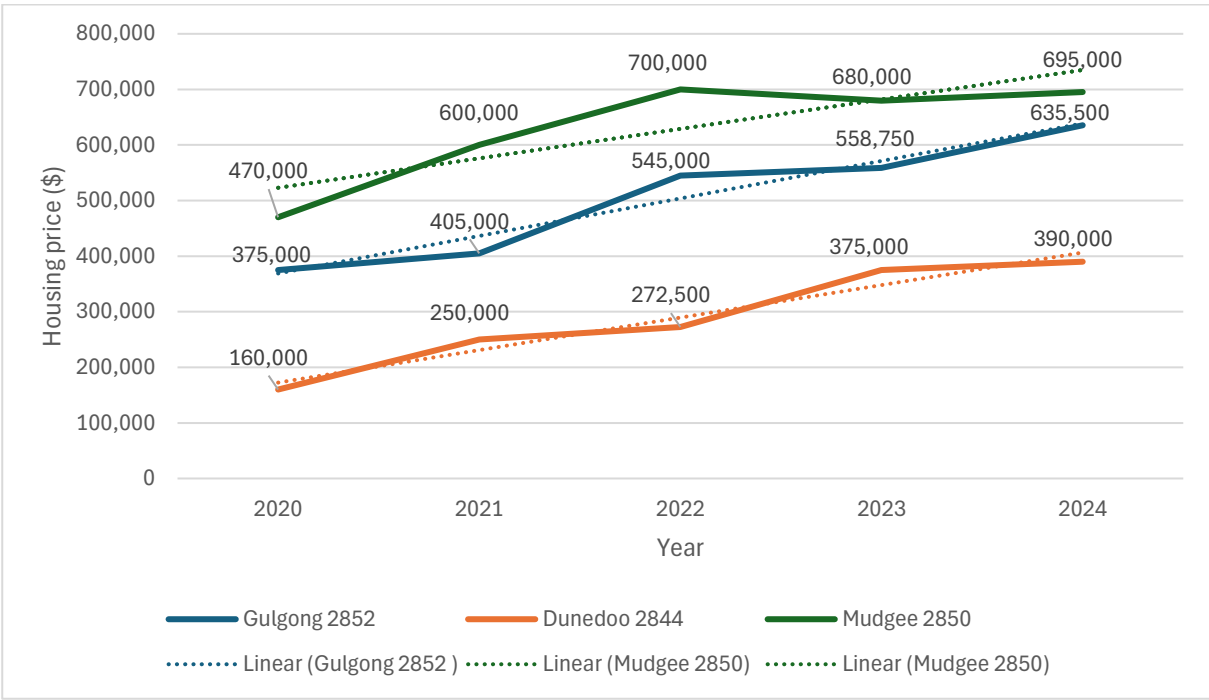
	Family households	Group households	Lone person households
Local area total	64.0%	1.5%	36.0%
Regional area total	68.0%	2.7%	29.4%
NSW	71.2%	3.8%	25.0%

Table C.3 Tenure (based on total private dwellings), 2021

	Owned outright	Owned with a mortgage	Rented	Other tenure
Local area total	48.0%	20.4%	23.8%	5.9%
Regional area total	41.5%	29.8%	23.5%	2.7%
NSW	31.5%	32.5%	32.6%	1.9%

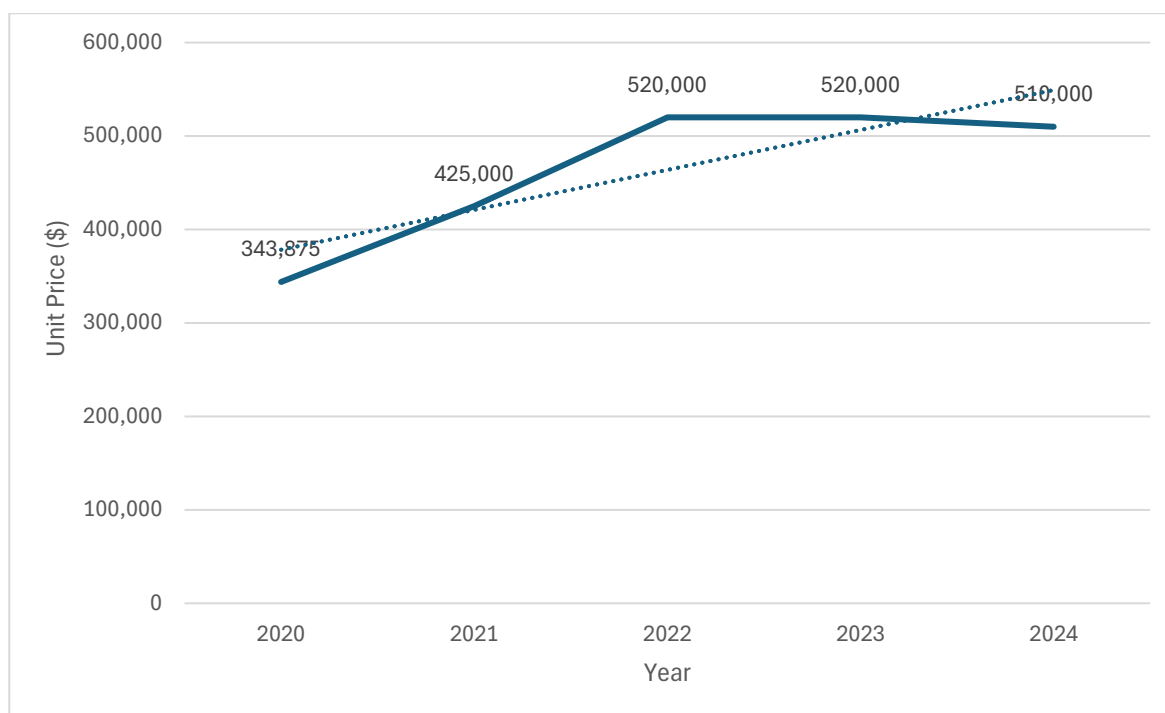
Table C.4 Mortgage repayment and rent, 2021

	Mortgage repayments (median mortgage repayments \$ monthly)	Rent payments (median rent \$ weekly)
Local area total	-	-
Regional area total	-	-
NSW	-	-



Source: realestate.com.au/neighbourhoods

Figure C.1 Median asking price trends for houses 2020-2024



Source: realestate.com.au/neighbourhoods

Figure C.2 Median property price trends for units, 2020–2024

C.1.2 Housing and rental market trends

Mortgage and rent repayments can help understand housing affordability in the area. When housing is unaffordable, it can lead to overcrowding, homelessness, and financial strain (AIHW, 2022).

Housing stress is considered to occur when households in the lower 40% of income distribution spend more than 30% of their income on rental payments (rental stress) or mortgage repayments (mortgage stress) (AHURI, 2019). This may indicate that local people with lower income may be unable to afford local rents which can be pushed up by those with higher income entering the local rental market. There was growth in mortgage repayments in Mid-Western Regional LGA as a whole which is likely associated with the tightening of the housing market due to a parallel increase in population (the growth rate during this period was above NSW) and expansion of the surrounding mining industry sector. Whilst Gulgong experienced a population decline during this period, the expanding mining industry sector in the Mid-Western Regional LGA between 2006 and 2021 would also have impacted housing market conditions in Gulgong.

Affordable housing is a key dimension of economic wellbeing. Housing costs, such as rent payments or mortgages, are often the largest regular expense in a household budget. Spending a high proportion of disposable income on housing costs reduces what households can afford to consume and save to support other aspects of their wellbeing (OECD 2020).

Housing stress is considered to occur when households in the lower 40.0% of income distribution spend more than 30.0% of their income in housing costs (rents or mortgage repayments) (AHURI 2019). This can mean that local people who are not employed in high-paying jobs may be unable to afford local rents which can be pushed up by higher salaries.

Analysis of rental stress in the local area (Table C.5) showed that in 2016, a high proportion of households in Mudgee (14.2%) and Gulgong (12.4%) experienced rental stress compared to other communities in the local area, the LGAs of the regional area and the area of reference. In comparison, a smaller proportion of households in the communities of the local area (i.e. 6.0% Mudgee, 3.0% Dunedoo, and 5.2% Gulgong) experienced mortgage stress compared to NSW (7.4%). In 2021, Gulgong (37.0%), Mid-Western Regional LGA (33.4%), and Mudgee (33.1%) had

similar or greater proportions of households with rental stress than NSW (33.1%). Households in the study area with higher levels of mortgage stress included the same localities of Mudgee (6.0%), Mid-Western Regional LGA (5.9%), and Gulgong (5.2%). However, mortgage stress in the study area is lower than the NSW proportion of 7.4%.

Table C.5 Housing affordability, 2016 and 2021

	Households where rent payments are greater than or equal to 30% of household income (%) ¹		Households where mortgage payments are greater than or equal to 30% of household income (%) ¹	
	c2016	c2021	c2016	c2021
Birriwa	NA	NA	NA	NA
Merotherie	NA	NA	NA	NA
Gulgong	12.4%	37.0%	5.2%	14.2%
Dunedoo	6.9%	30.1%	3.0%	11.0%
Mudgee	14.2%	33.1%	6.0%	9.7%
Mid-Western Regional LGA	10.0%	33.4%	5.9%	11.9%
Warrumbungle LGA	6.2%	23.2%	3.2%	11.8%
Dubbo Regional LGA	6.2%	26.2%	3.2%	9.5%
NSW	12.9%	33.1%	7.4%	17.3%

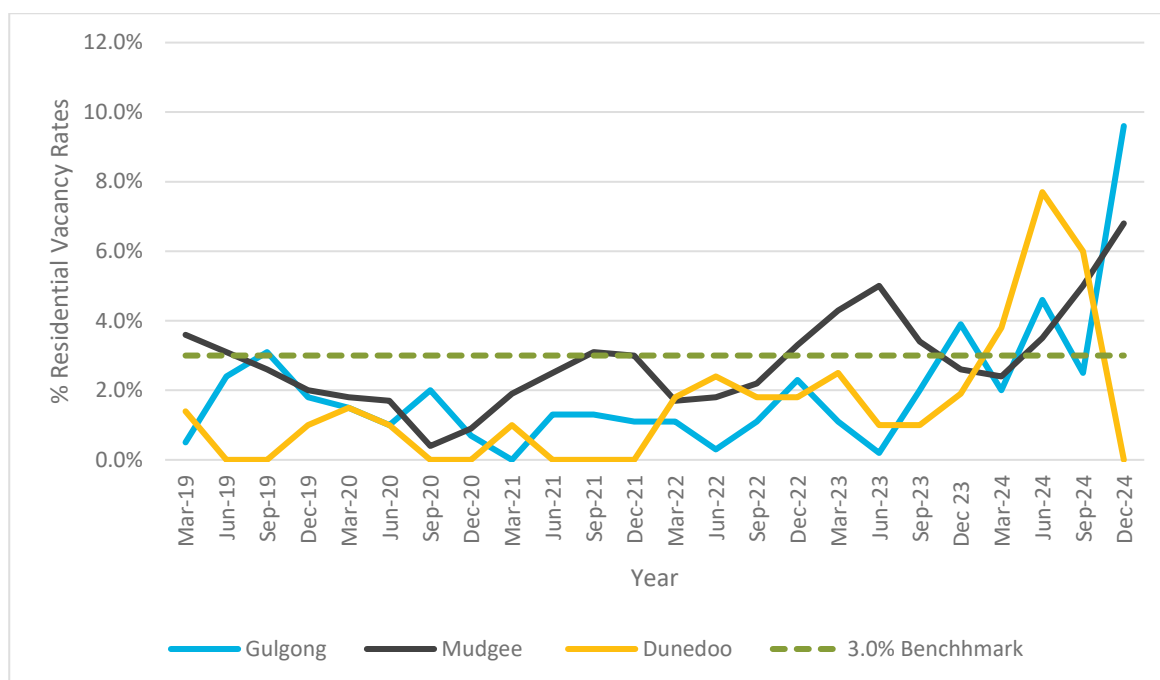
Source: ABS 2016, Quickstats, ABS 2021, QuickStats.

Notes: 1. Data for the total local area median mortgage repayments and rent payments was not available.

Analysis of median property prices supports the evidence of growing mortgage stress. In Figure C.2, there is a significant increase in property prices from 2020 to 2021 for Mudgee and Dunedoo. Gulgong's house prices are still increasing, but less dramatically.

i Residential vacancy rates

The residential vacancy rate trends for postcode 2844 Dunedoo, 2852 Gulgong and 2850 Mudgee is presented in Figure C.3 for the period March 2019 to December 2024. With the exception of Mudgee, from December 2022 to March 2023 the vacancy rate in the local area during was consistently below the 3.0% benchmark, indicating a tight rental market with an undersupply of rental housing during that time. Whilst the data shows considerable fluctuation in rental vacancy rates across the three communities, within Dunedoo rental vacancy rates spiked from 1.0% in September 2023 to 7.7% in June 2024 before decreasing again to 0% in December 2024, indicating an erratic market.



Source: SQM Research 2021, Residential Vacancy Rates.

Figure C.3 Residential vacancy rate trends, 2019–2024

C.1.3 Short-term accommodation

The term short-term accommodation refers to accommodation options that are typically provided to visitors or tenants for a short period of time for example, motels, hotels, serviced apartments, bed and breakfast, self-contained homes, caravan and camping parks. The length of tenancy in these forms of accommodation can often extend to lengthy stays, depending on accommodation availability, price and personal circumstances.

Short-term accommodation providers in the local and regional area service a number of different industry sectors including tourism, mining, renewable energy and agricultural industry sectors. The MWRC estimates there are currently 3,200 rooms of short-stay accommodation in the Mid-Western Regional LGA, with an average occupancy rate of over 80% (EIS SIA interview program).

Within the local area short-term accommodation is concentrated in the larger communities of Dunedoo, Gulgong and Mudgee and consists of a combination of hotels, motels, bed and breakfast accommodation, farm-stay, holiday home rentals (Airbnb) and caravan parks. The majority of short stay accommodation in the Mid-Western LGA is concentrated in and nearby the town of Mudgee.

The most abundant form of short-term accommodation in the local area, key townships and regional area is private holiday rentals through platforms such as Airbnb and booking.com. Analysis of short-term accommodation data suggests that in 2023 there are more than 600 active Airbnb rentals in the Mid-Western LGA including an estimated 260 properties in Mudgee and 16 properties in Gulgong. There were an estimated 65 Airbnb properties in the Warrumbungle LGA including three properties in Dunedoo. The findings of SIA interviews with service providers, real estate agents and the MWRC suggests that the number of Airbnb properties in the Mid-Western LGA has increased substantially in the past three to five years. There was a trend of properties being purchased and transferred out of the stock of private rental or owner-occupied housing and into the short-term accommodation or holiday rental market (EIS SIA interview program).

C.2 Health and community wellbeing

C.2.1 Community health

Social determinants of health, described as “the circumstances in which people grow, live, work, age, and the systems put in place to deal with illness...which are shaped by political, social, and economic forces” (AIHW 2020), are measures of the health and wellbeing of a population. These measures include factors such as conditions of employment, provision of social services and support, and socioeconomic position.

Although the local area and regional area have a slightly lower level of unemployment compared to greater NSW, there are greater rates of youth unemployment, relatively more households with low income and fewer people in high-skill occupations compared to the rest of NSW, suggesting higher rates of socio-economic disadvantage. Furthermore, the provision of social infrastructure and services particularly health related services is less comprehensive in comparison to more urban regions of NSW, necessitating travel outside of the regional area to access specialist health and community services (e.g. at a referral hospital in Dubbo).

The 2022 Social Impact Assessment analysed three major health risk factors can be used as indicators of population health: alcohol consumption, smoking, and obesity (EMM, 2022a). It revealed vulnerabilities within the Western NSW LHD concerning alcohol consumption, which was a consistently higher proportion than NSW, as well as obesity, which was trending higher than NSW.

C.2.2 Voluntary rates

Volunteering rates can give an indication of social cohesion in a community, and willingness of people to help each other out. In 2021, there were high volunteering rates in the study area with 25.3% for the local area and 17.6% for the regional area. However, the key townships of Gulgong and Mudgee have lower proportions of volunteerism than the rest of the study area with 14.5% but is still higher than the NSW rate of 13.0%.

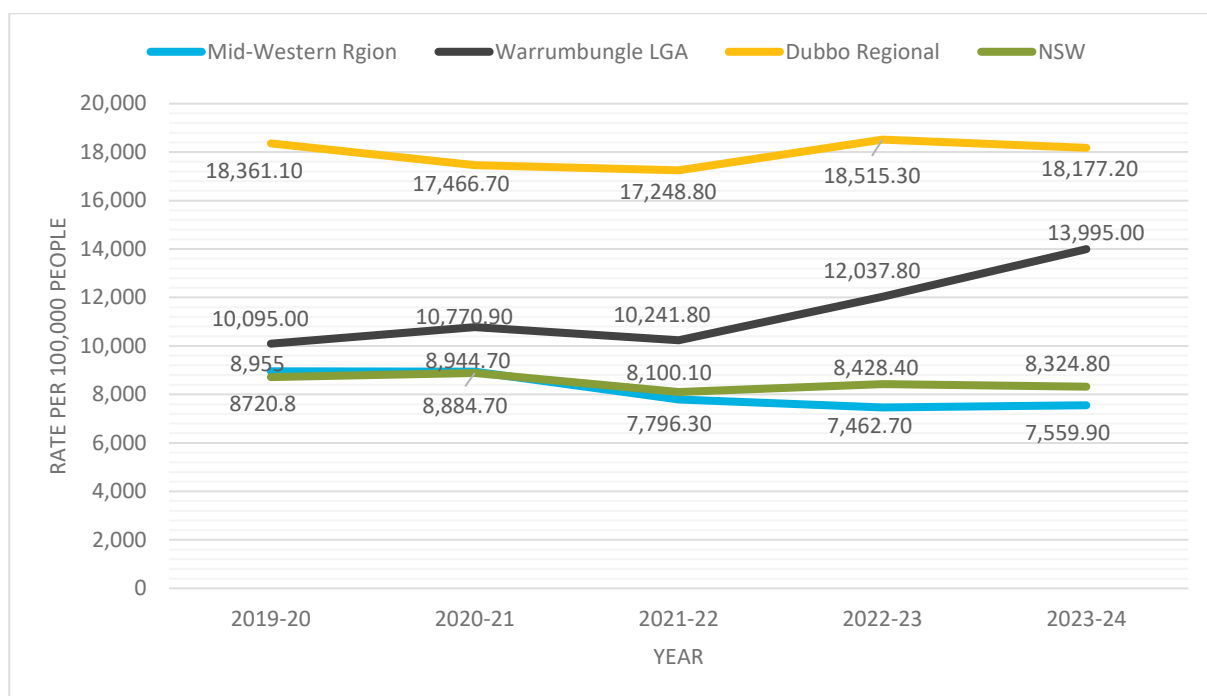
C.2.3 Road incidents

Between 2019 and 2023 the number of non-casualty (towaway) road incidents increased in Warrumbungle LGA and Dubbo LGA. In Warrumbungle LGA there was an increase from nine incidents in 2019 to nine incidents in 2023, and in Dubbo Regional LGA there was a decrease from 38 incidents in 2019 to 37 incidents in 2023. The number of fatal road incidents increased in Mid-Western Regional LGA during this period from five incidents in 2019 to five incidents in 2023.

C.2.4 Community safety and crime

Data describing the incidence of crime in the regional area and NSW is presented in Figure C.4 and sourced from the NSW Bureau of Crime Statistics and Research (BOCSAR). BOCSAR is a statistical and research agency within the Department of Communities and Justice. Data is only available at the LGA level.

Since 2018, the rate of total offences (per 100,000 people) in each of the LGAs of interest has generally been higher than the NSW average. In 2022, the rate of total offences (per 100,000 people) in Mid-Western Regional LGA was 5,459.8 compared to 7916.2 in the Warrumbungle LGA, 14,314.3 in Dubbo Regional LGA and 5,580.7 in NSW.



Source: BOCSAR 2022 — NSW Local Government Area excel crime tables.

Notes: Total excludes transport regulatory offences.

Figure C.4 Total offences rates per 100,000 population, 2019–2024

Australia

SYDNEY

Level 10, 201 Pacific Highway
St Leonards NSW 2065
T 02 9493 9500

NEWCASTLE

Level 3 175 Scott Street
Newcastle NSW 2300
T 02 4907 4800

BRISBANE

Level 1 87 Wickham Terrace
Spring Hill QLD 4000
T 07 3648 1200

CANBERRA

Suite 2.04 Level 2
15 London Circuit
Canberra City ACT 2601

ADELAIDE

Level 4 74 Pirie Street
Adelaide SA 5000
T 08 8232 2253

MELBOURNE

Suite 8.02 Level 8
454 Collins Street
Melbourne VIC 3000
T 03 9993 1900

PERTH

Suite 3.03
111 St Georges Terrace
Perth WA 6000
T 08 6430 4800

Canada

TORONTO

2345 Yonge Street Suite 300
Toronto ON M4P 2E5
T 647 467 1605

VANCOUVER

422 Richards Street Unit 170
Vancouver BC V6B 2Z4
T 604 999 8297

CALGARY

700 2nd Street SW, Floor 19
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