Appendix

E

E.14 | Social Impact Assessment

EMM creating opportunities | SPARK RENEWABLES

Dinawan Wind Farm

Social Impact Assessment

Prepared for Spark Renewables Pty Limited

May 2024

Dinawan Wind Farm

Social Impact Assessment

Spark Renewables Pty Limited

E220305 RP1

May 2024

Version	Date	Prepared by	Reviewed by	Comments
V1	6 May 2024	Myf Jagger	Chris Mahoney	For client review
V2	29 May 2024	Myf Jagger	Chris Mahoney	Final

Approved by

Chris Mahoney
Associate Director
29 May 2024

Level 3 175 Scott Street
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Executive summary

ES1 Overview

Spark Renewables Pty Limited (Spark Renewables) proposes to develop the Dinawan Wind Farm (the project). The project includes the installation, operation, maintenance and decommissioning of up to approximately 200 wind turbine generators (WTGs) and associated infrastructure. The project will have a generation capacity of up to approximately 1,200 megawatts (MW) (AC), equivalent to the needs of 700,000 NSW households per year. It will assist in meeting NSW and Australian Government emissions reduction targets and will abate approximately 3.2 million tonnes of greenhouse gases (GHG) annually. The project is State significant development (SSD) pursuant to schedule 1 of State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP).

The project is on the traditional lands of the Wiradjuri people and several smaller nations of the Murrumbidgee plains, about halfway between the towns of Coleambally and Jerilderie and lies within the Murrumbidgee and Edward River local government areas (LGAs) in New South Wales (NSW).

This social impact assessment (SIA) forms part of the environmental impact statement (EIS) for the project.

ES2 Assessment approach

This SIA supports the planning and approval process for the project. It has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) for the project as well as relevant regulatory assessment requirements, guidelines, and policies, including:

- the *Social Impact Assessment Guideline for State Significant projects* (SIA Guideline) (DPE 2021a)
- the *Technical Supplement: Social Impact Assessment Guideline for State Significant Projects* (SIA Technical Supplement) (DPE 2021b)
- the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPE 2021d).

The SIA study areas were defined to reflect the geographic distribution of different types of social impacts and benefits. The local study area includes communities which directly surround the project and are most likely to experience direct social impacts. The regional study area may experience broader socio-economic effects (Murrumbidgee LGA and Edward River LGA), and nearby regional communities of Coleambally, Jerilderie, Wagga Wagga, and Griffith are expected to experience service impacts and increased employment and business opportunities. The regional study area sits within a broader area of reference which is comprised of the Murray region, which closely resembles the South West Renewable Energy Zone (REZ) area.

The SIA has drawn on the results of primary and secondary research to identify and assess the significance of social impacts and benefits associated with the construction and operation of the project. A summary of key social impacts associated with the project is presented at Section ES5, and detailed within Section 7.8 of this SIA. Social impacts and benefits will accrue primarily in the local area, with particular impacts relating to workforce and industry extending to the regional study area. Findings from the SIA include the potential for the project to contribute to cumulative social impacts and benefits experienced across the South West REZ.

ES3 Existing conditions

The project is in the Riverina region in south-west NSW, 85 kilometres (km) south of Griffith and 135 km west of Wagga Wagga, which are the two closest key regional centres. The project will be developed within a project area of approximately 39,061 hectares (ha) comprising about 349 land parcels. The exact land area to be covered by the project components (the development footprint) will be approximately 1,399 ha.

The project area comprises two distinct sections, one to the west of Kidman Way (western wind area) and one to the east (eastern wind area). There are 23 'non-associated' residences within 8 km of a proposed wind turbine generator (WTG) (Figure 1.2).

The land surrounding the development footprint in the western wind area is zoned RU1 Primary Production under the Conargo Local Environmental Plan 2013 (Conargo LEP). The land surrounding the development footprint in the eastern wind area is zoned RU1 Primary Production under the Jerilderie Local Environmental Plan 2012 (Jerilderie LEP). The project area and surrounds are characterised by flat, fertile land that is suitable for agricultural production. The current land use within the project area is sheep and cattle grazing with some cropping. One of the key factors contributing to the success of agriculture in the region is the availability of water sources, including the Murrumbidgee River, the Murray River, and a number of smaller watercourses.

ES4 Engagement informing SIA

Community and stakeholder engagement is a core element of SIA. This SIA draws on feedback generated through engagement undertaken as part of the EIS, along with engagement activities tailored specifically to inform the SIA. In depth interviews with key stakeholders directly informed identification of potential social impacts and benefits. Interviews were held with nearby neighbours and landowners, local councils, Indigenous groups and cultural knowledge holders, service providers and key community groups, as detailed in Section 6.3.1.

Community and stakeholder feedback revealed that most parties were supportive of renewable energy generation. Outcomes from SIA engagement also demonstrated that key stakeholders felt engaged by Spark Renewables on the project, demonstrating a level of trust and participation in the project. There was an overall desire to continue to build this relationship to enhance project opportunities and minimise potential impacts.

ES5 Assessment of impacts

Social impacts identified during the assessment process are summarised as pertaining to following themes:

- **Energy transition** – the project's contribution to the transition to renewable energy and associated intergenerational equity benefits.
- **Housing and services** – the nature of the local housing market and service provision in the local and regional area and how this intersects with the needs of project workers.
- **Employment, training, and business** – the positive contribution the project would make to the local and regional economy and how this can be maximised while balancing local competition for labour.
- **Access to services, housing and accommodation** – potential impacts associated with a temporary influx of construction workers may have on demand for housing and services.
- **Local amenity** – potential amenity impacts experienced by the local community, associated with the project's visual impacts, noise and dust during construction and operation.
- **Cultural heritage –** the importance of protecting Aboriginal cultural heritage values and procedures to manage unexpected finds during construction.
- **Community, safety, and wellbeing** – changes to local road conditions and the influx of non-resident workers, and associated perceptions of public safety and wellbeing.

Detailed social impact mitigation measures, and benefit enhancement options are presented in Section 9 of the SIA.

There were five mitigated impacts which were assessed as having a residual significance of medium. There were two enhanced benefits which were assessed as having a residual significance of high, and three with a residual significance of medium.

There were no impacts assessed as having a high mitigated significance. Key social impacts are primarily associated with the project's demand for labour and the influx of the construction workforce which affects access to services and local community dynamics.

Key social benefits identified by the SIA relate to the benefits derived from project employment, training, and business opportunities relating to direct and indirect economic activity resulting from the project.

A summary of the key social impacts and benefits which were assessed as having a residual level of significance of medium or higher are presented in Table ES1 and Table ES2, respectively. The full assessment of potential impacts and benefits is provided in Section 7.

Table ES1 Key social impacts

Social impact theme	ID	Matter	Significance (mitigated)
Employment, training, and business	EC04	Increased competition for labour and services	Medium (C2) **Impact**
Housing and access to services	HS01	Reduced access to health services for residents due to increased demand	Medium (C2) **Impact**
Local amenity	L04	Ecological changes affecting cultural and community values	Low (D1) **Impact**
Cultural heritage	CH02	Potential impacts to sites, items, or places of Aboriginal cultural significance	Medium (C2) **Impact**
Community, safety, and wellbeing	CS01	Changes local population dynamics due to the influx of workforces	Medium (D3) **Impact**

Table ES2 Key social benefits

Social impact theme	ID	Matter	Significance (enhanced)
Energy transition	T01	Positive influence on intergenerational equity	Medium (A2) **Benefit**
Employment, training, and business	EC01	Increased opportunities for employment and training	High (B3) **Benefit**
Cultural heritage	CH01	Increased opportunities for connection to Country	Medium (C3) **Benefit**
Community, safety and wellbeing	CS05	Social cohesion and resilience arising from community benefit and investment	Medium (B2) **Benefit**

ES6 Stakeholder influence on project design

A number of design refinements have been informed by stakeholder feedback and other studies undertaken for the EIS (see Section 2.7.4 of the EIS). While these refinements have been made in consideration of respective study outcomes, they contribute to reducing potential social impacts.

These include:

- inclusion of a dedicated accommodation facility to reduce demand on local housing and accommodation
- comprehensive consultation and surveys including test excavation as part of the Aboriginal Cultural Heritage Assessment and subsequent avoidance of sites and items of Aboriginal cultural significance
- a setback of at least 2 km established between WTGs and the closest receivers to minimise visual and noise impacts, which in turn reduces impacts to local amenity
- infrastructure siting in consultation with landowners to reduce the project's impact on agricultural land use.

ES7 Mitigation and management

As outlined in Section 9, an adaptive management approach is proposed, allowing Spark Renewables to manage and respond to changing circumstances and new information over time through ongoing monitoring and periodic review of mitigation strategies allowing for modification if required. An adaptive approach will ensure the effective management of the social impacts identified in this SIA and the enhancement of social benefits experienced by the community.

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1 Introduction

1.1 Overview

Spark Renewables Pty Limited (Spark Renewables) proposes to develop the Dinawan Wind Farm (the project). The project includes the installation, operation, maintenance and decommissioning of up to approximately 200 wind turbine generators (WTGs) and associated infrastructure. The project is on the traditional lands of the Wiradjuri people and several smaller nations of the Murrumbidgee plains, about halfway between the towns of Coleambally and Jerilderie and lies within the Murrumbidgee and Edward River local government areas (LGAs) in New South Wales (NSW). The regional and local context of the project is shown in Figure 1.1 and Figure 1.2, respectively.

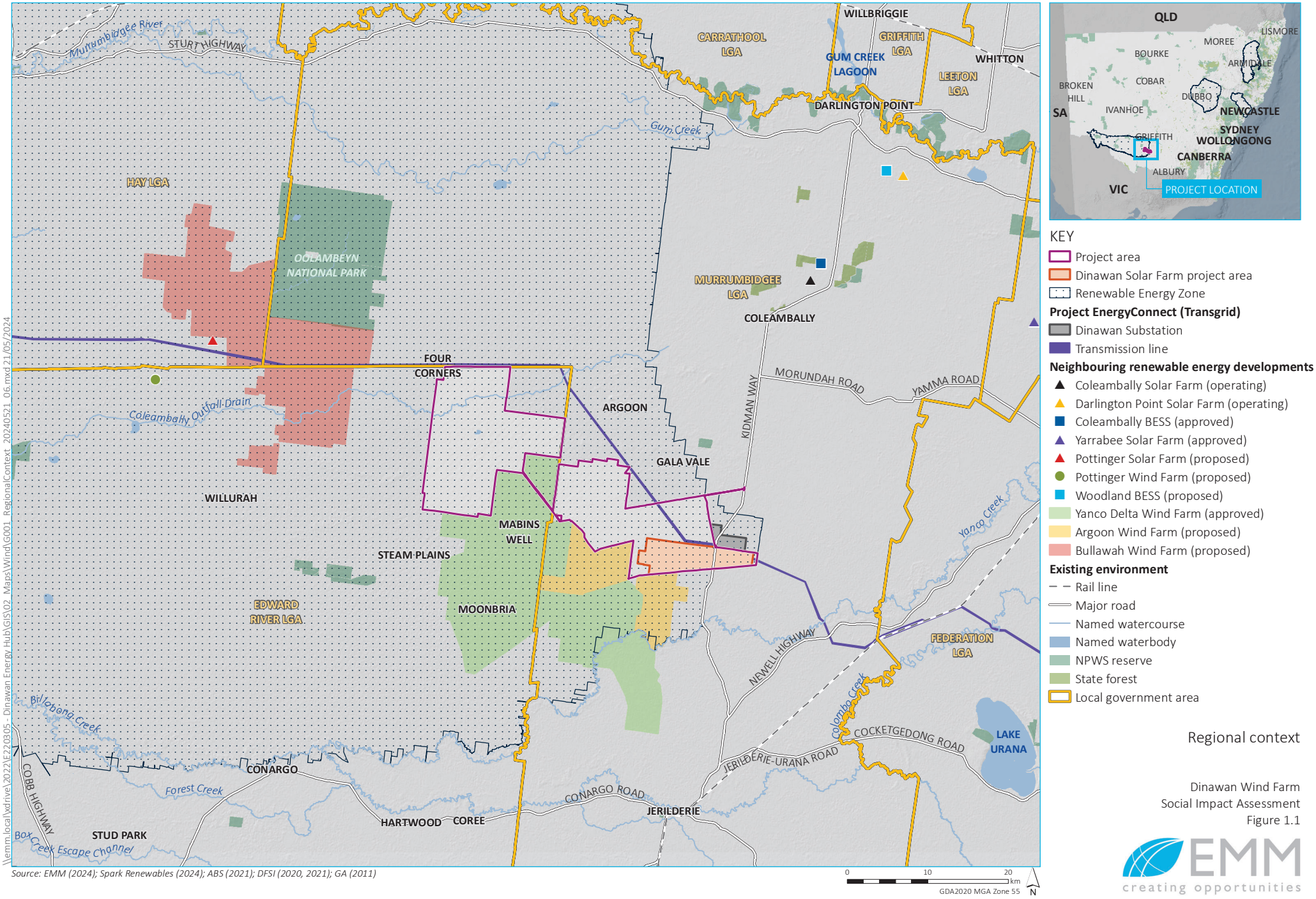
The project is within the South West Renewable Energy Zone (REZ), a region selected by the NSW Government for its significant potential for renewable energy generation and regional development.

The project will connect to the Dinawan Substation, currently under construction as part of the Project EnergyConnect interconnector that will run between Robertstown in South Australia and Wagga Wagga in NSW. The substation and interconnector are a separate approved project that is being built by Transgrid.

The main objective of the project is to generate renewable energy, consistent with NSW Government policy for development of infrastructure for renewable energy generation, and will significantly contribute to the target of 3.98 gigawatts (GW) of generation planned in the South West REZ. The project will have a generation capacity of up to approximately 1,200 megawatts (MW) (AC), equivalent to the needs of 700,000 NSW households per year. It will assist in meeting NSW and Australian Government emissions reduction targets and will abate approximately 3.2 million tonnes of greenhouse gases (GHG) annually.

The project is State significant development (SSD) pursuant to schedule 1 of State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP). Accordingly, approval for the project is required under Part 4, Division 4.7 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act).

This social impact assessment (SIA) forms part of the environmental impact statement (EIS) for the project.



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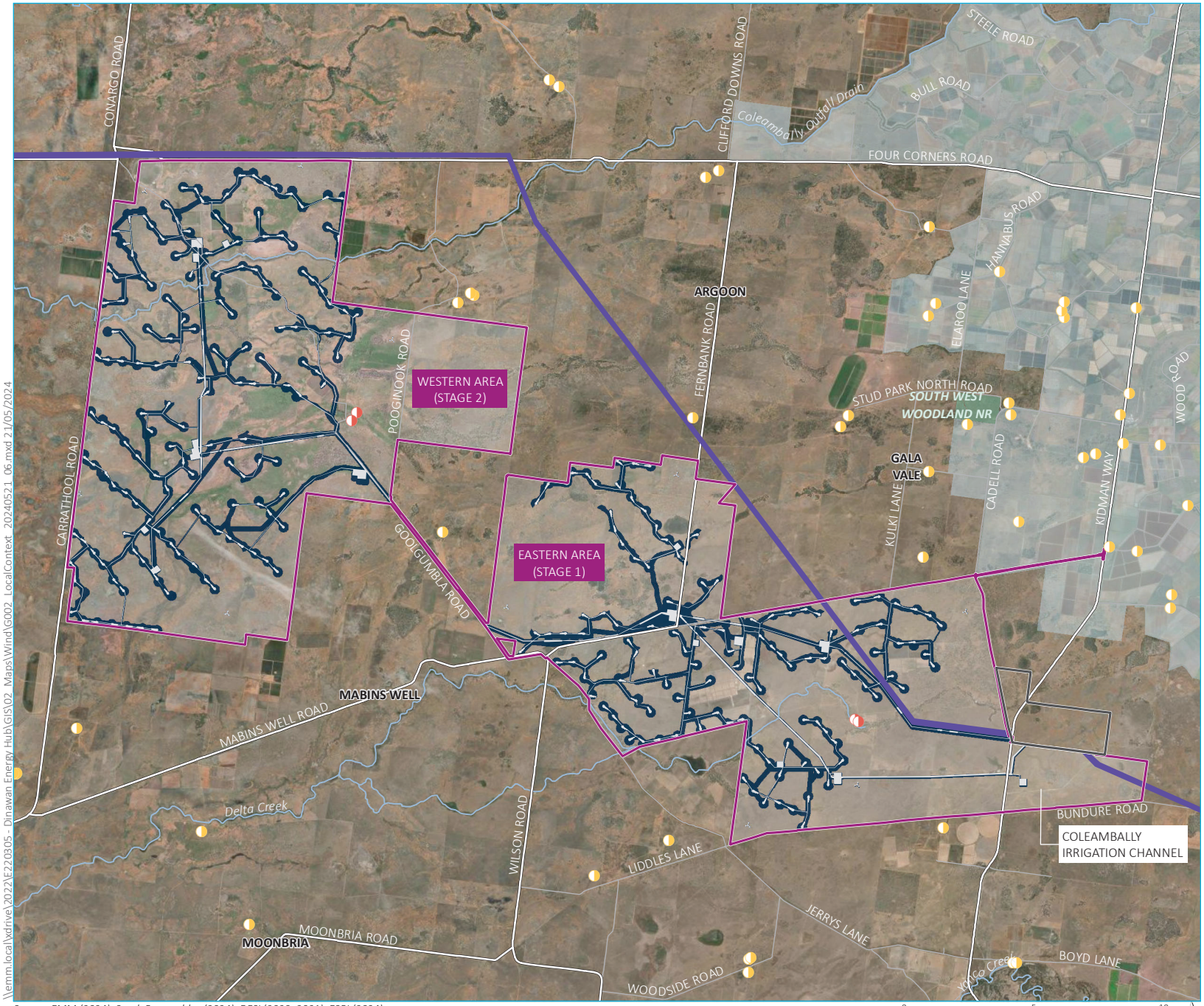
Source: EMM (2024); Spark Renewables (2024); ABS (2021); DFSI (2020, 2021); GA (2011)

Regional context

Dinawan Wind Farm
Social Impact Assessment
Figure 1.1

EMM
creating opportunities



KEY

- Project area
- Development corridor
- Development footprint

Project EnergyConnect (Transgrid)

- Dinawan Substation
- Transmission line

Residence

- Associated
- Non-associated

Existing environment

- Major road
- Minor road
- Watercourse (third order and higher)
- Coleambally irrigation area
- NPWS reserve

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Source: EMM (2024); Spark Renewables (2024); DFSI (2020, 2021); ESRI (2024)

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Local context

Dinawan Wind Farm
Social Impact Assessment
Figure 1.2

EMM creating opportunities

1.2 Assessment approach and requirements

The project is SSD pursuant to schedule 1 of the Planning Systems SEPP. Accordingly, approval for the project is required under Part 4, Division 4.7 of the NSW EP&A Act.

An EIS has been prepared by EMM Consulting Pty Limited (EMM) on behalf of Spark Renewables in general accordance with the *State significant development guidelines – preparing an environmental impact statement* (DPE 2022).

This SIA supports the planning and approval process for the project. It has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) for the project as well as relevant regulatory assessment requirements, guidelines, and policies, including:

- the *Social Impact Assessment Guideline for State Significant Projects* (SIA Guideline) (DPE 2021a)
- the *Technical Supplement: Social Impact Assessment Guideline for State Significant Projects* (SIA Technical Supplement) (DPE 2021b)
- the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPE 2021d).

The NSW Department of Planning and Environment (DPE) issued the SEARs for the project on 14 December 2022. The SEARs identify matters which must be addressed in the EIS. Table 1.1 lists the requirements relevant to this SIA and where they have been addressed.

Table 1.1 SIA related SEARs

Requirement	Section addressed
Including an assessment of the social impacts in accordance with the Social Impact Assessment Guideline (DPIE, 2021) and consideration of construction workforce accommodation.	This report, including: • Section 2.4.1 • Section 7

1.2.1 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, Myf Jagger, consistent with SIA Guideline requirements and reviewed and approved by a suitably qualified and experienced social planner, Chris Mahoney. 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 Appendix B.

ii SIA declarations

The authors declare that this SIA report:

- was developed during 2023 and completed in May 2024
- has been prepared in accordance with the EIS process under the EP&A Act
- has been prepared in accordance with the SIA Guideline
- 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 3.1.3.

2 Project description and setting

2.1 Project overview

A full project description is provided in Chapter 3 of the EIS (EMM 2024a) and an overview of the project layout is shown in Figure 2.1 and Figure 2.2. The project will comprise the following key components:

- a network of approximately 200 (3 blade) WTGs across two areas
- electrical collection system, substations and control rooms
- electricity transmission line infrastructure connecting the project substations to the Dinawan Substation
- operations and maintenance (O&M) infrastructure, including site offices and amenities, buildings, equipment and maintenance sheds and laydown, storage and parking areas
- temporary construction facilities, including worker accommodation facilities, construction compounds, site offices and amenities, concrete batching plants, construction materials storage (including stockpiles), laydown areas, temporary meteorological masts, borrow pits, water tanks and storage and parking areas
- other permanent infrastructure, including hardstands, water tanks, permanent meteorological masts, new access tracks and upgrades to existing access tracks
- access points from the public road network and public road upgrades to facilitate the delivery of WTG components.

2.2 Project areas

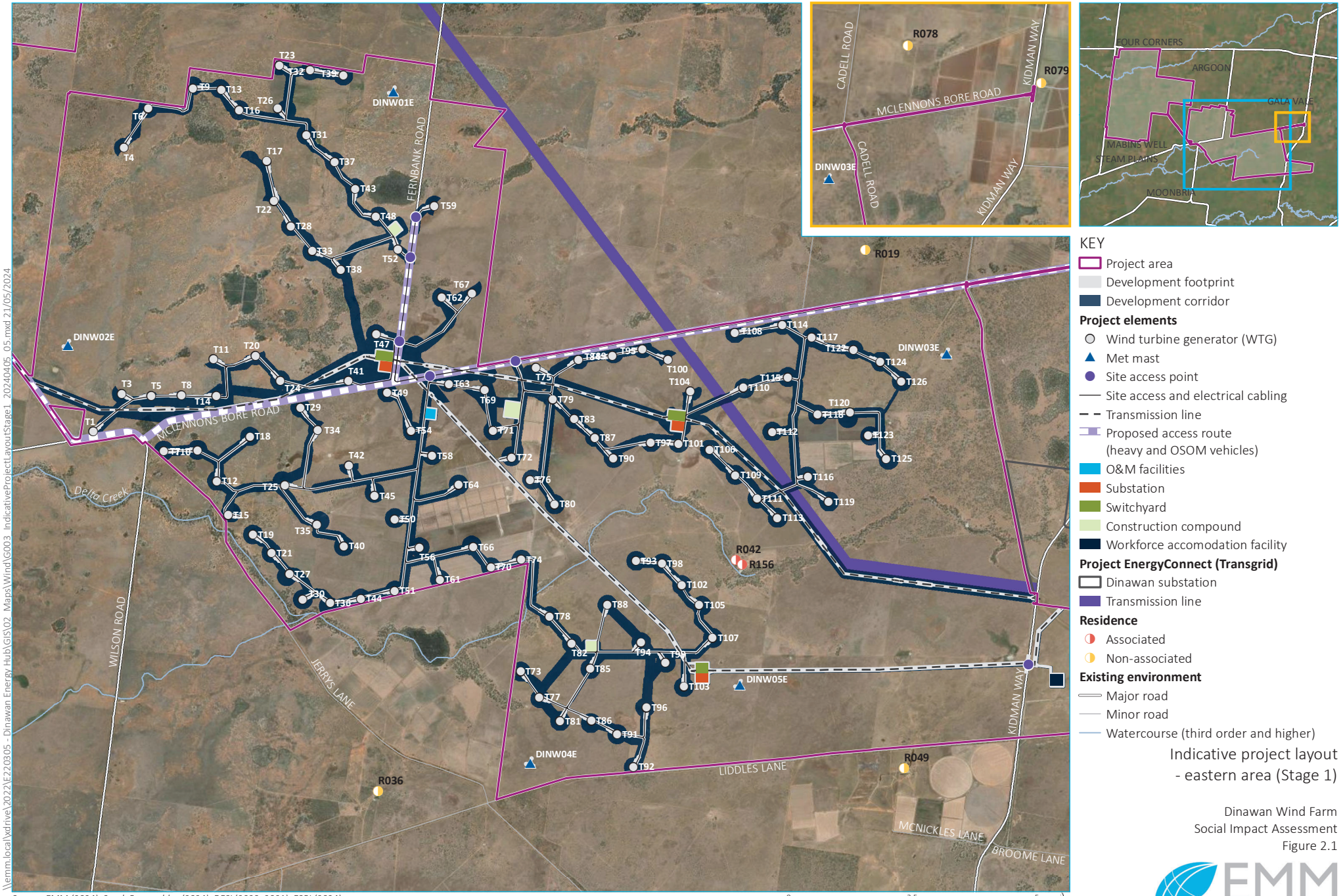
The project area is approximately 39,061 ha and encompasses 349 land parcels (Figure 1.2). The majority of the land within the project area is privately owned, and can be considered as two distinct areas, the eastern wind area and the western wind area. The land within the project area is predominantly used for sheep and cattle grazing and some irrigated cropping.

Within the project area, the development corridor is approximately 7,256 ha (Figure 1.2). The development corridor is the land within the project area where project components may be placed, providing the necessary flexibility for component placement during detailed design (i.e. micro-siting). The development corridor has been refined based on the results of environmental surveys, including biodiversity, Aboriginal cultural and historical heritage surveys, and with consideration of community and regulatory stakeholder feedback.

A development footprint has also been provided and is approximately 1,399 ha within the development corridor. This assessment assumes that the development footprint will be disturbed. As part of detailed design, the development footprint may move within the development corridor; however, total direct surface disturbance is not anticipated to increase.

Direct impacts for public road upgrade works are required on Kidman Way, McLennons Bore Road, Wilson Road, Fernbank Road and Goolgumbla Road (Figure 1.2) and will facilitate access to the development corridor. From the site access points, private internal roads will be used to traverse the development corridor.

The preferred point of connection to Transgrid's network is via the Dinawan Substation, which forms part of Project EnergyConnect and will be constructed on land adjacent to the project area. An overhead transmission line will connect the project's collector substations to the Dinawan Substation.



KEY

- Project area
- Development footprint
- Development corridor

Project elements

- Wind turbine generator (WTG)
- Met mast
- Site access point
- Site access and electrical cabling
- Transmission line
- Proposed access route (heavy and OSOM vehicles)
- O&M facilities
- Substation
- Switchyard
- Construction compound
- Workforce accomodation facility

Project EnergyConnect (Transgrid)

- Dinawan substation
- Transmission line

Residence

- Associated
- Non-associated

Existing environment

- Major road
- Minor road
- Watercourse (third order and higher)

Indicative project layout - eastern area (Stage 1)

Dinawan Wind Farm
Social Impact Assessment
Figure 2.1

EMM creating opportunities

Source: EMM (2024); Spark Renewables (2024); DFSI (2020, 2021); ESRI (2024)

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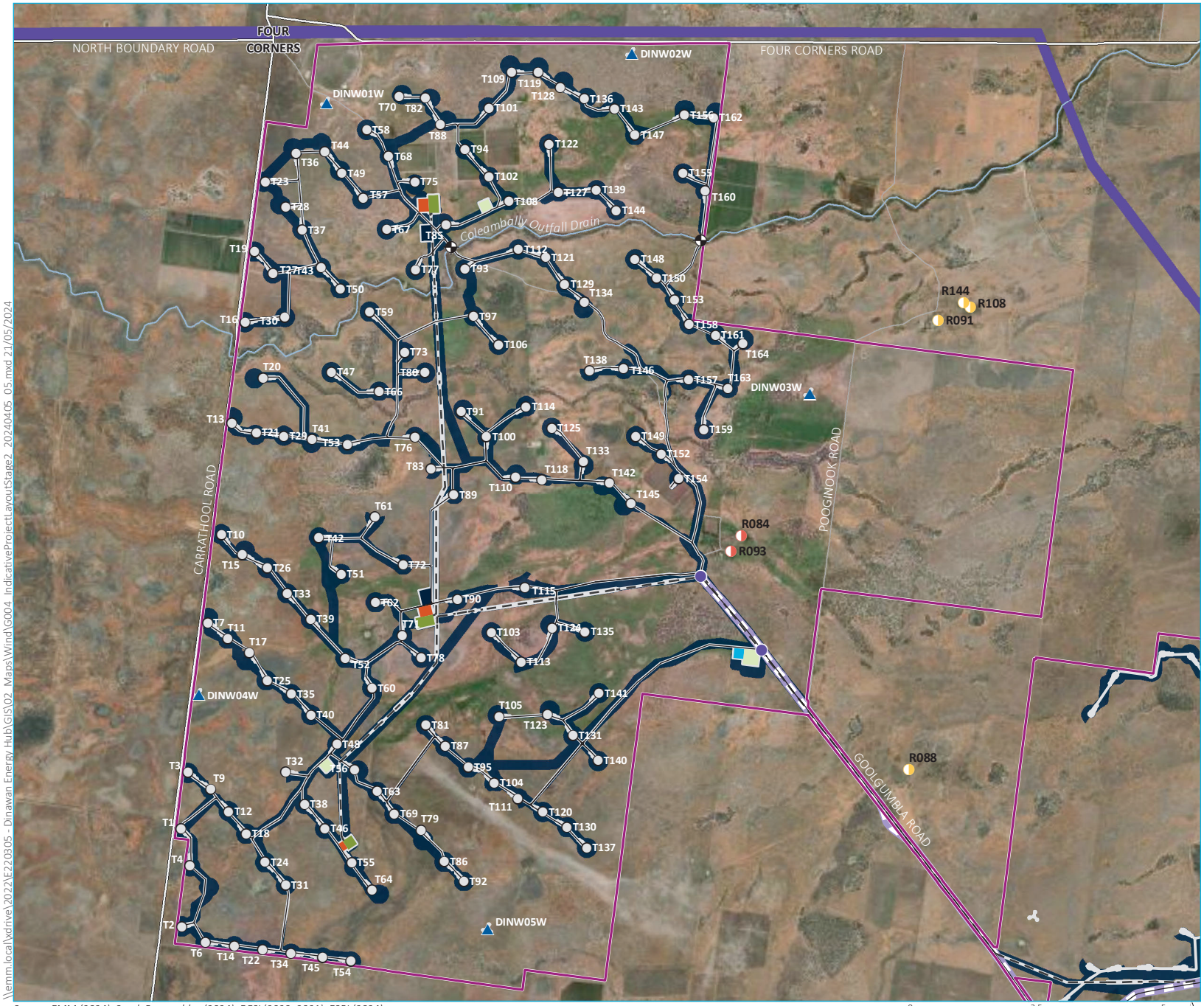

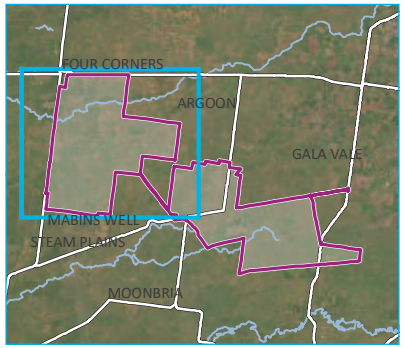

KEY

- Project area
- Development footprint
- Development corridor

Project elements

- Wind turbine generator (WTG)
- Met mast
- Site access point
- Site access and electrical cabling
- Transmission line
- Proposed access route (heavy and OSOM vehicles)
- O&M facilities
- Substation
- Switchyard
- Construction compound
- Workforce accomodation facility

Project EnergyConnect (Transgrid)

- Transmission line

Residence

- Associated
- Non-associated

Existing environment

- Bridge
- Major road
- Minor road
- Watercourse (third order and higher)

Indicative project layout
- western area (Stage 2)

Dinawan Wind Farm
Social Impact Assessment
Figure 2.2

EMM
creating opportunities

Source: EMM (2024); Spark Renewables (2024); DFSI (2020, 2021); ESRI (2024)

0 2.5 5 km

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2.3 Project staging

It is anticipated that the project will be constructed in two stages:

- Stage 1 will be the construction of the eastern wind area, including associated public road upgrades, grid connection infrastructure and workforce accommodation facilities. Stage 1 is within the Murrumbidgee LGA.
- Stage 2 will be the construction of the western wind area, including associated public road upgrades, grid connection infrastructure and workforce accommodation facilities. Stage 2 is predominantly within the Edward River LGA, with the exception of additional public road upgrades and grid connection infrastructure within Murrumbidgee LGA.

The project's generation capacity and connection to the electricity grid is dependent on the outcomes of the South West REZ Access Scheme and the construction of electricity grid infrastructure (including Dinawan Substation). For the purposes of this assessment, it has been assumed that the project will connect to Dinawan Substation and project infrastructure will be housed within the full extent of the development footprint (i.e. this assessment has assessed impacts associated with the construction and operation of both stages 1 and 2).

2.4 Project timing and workforce

This section describes the anticipated project schedule, and the workforce associated with each phase.

2.4.1 Construction

i Timing

Project construction is expected to commence in 2025, subject to receiving the required approvals. Construction of the project will be completed over approximately 60 months (five years), and delivered in two stages discussed at Section 2.3. Sequencing of key project activities during the construction phase is expected to be as follows:

- early works ahead of commencement of construction
- site preparation works for Stage 1 (including construction of worker accommodation facilities)
- construction of Stage 1
- site preparation works for Stage 2 (including construction of worker accommodation facilities)
- construction of Stage 2.

Construction activities will be undertaken during standard day time construction hours (7:00 am to 6:00 pm Monday to Friday and 8:00 am to 1:00 pm Saturday). Exceptions to these hours may be required on limited occasions under circumstances such as:

- deliveries by heavy vehicles and RAVs outside of peak traffic times
- concrete batching
- activities that are inaudible at non-associated residences
- adverse weather conditions that may hinder WTG construction or concrete pours during nominated construction hours.

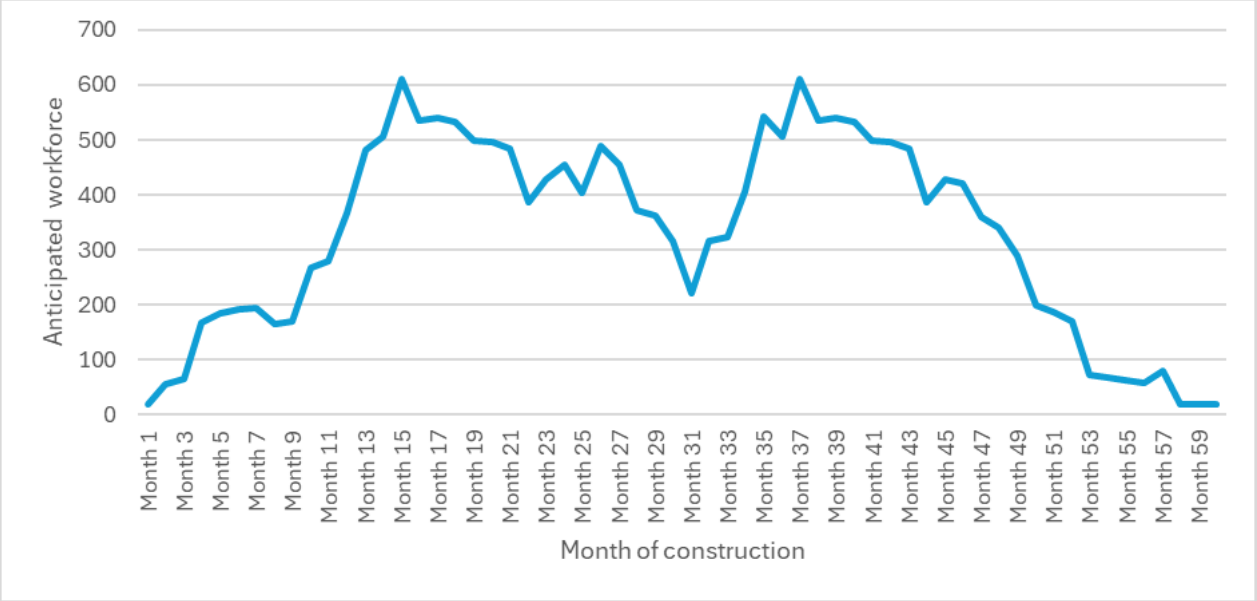
The relevant council and surrounding landholders will be notified of any work outside of standard construction hours.

ii Workforce

Over the five-year construction period, the workforce is expected to experience two peaks of approximately 600 personnel, corresponding with peak construction for Stage 1 and Stage 2 (see Figure 2.3). The average number of personnel required over the construction program is approximately 328 personnel.

The construction workforce will be sourced from the local area as far as practicable.

It is estimated that 25% of workers will be sourced from the local area, which amounts to approximately 82 personnel on average over five years, and 150 personnel at each peak.



Source: Spark Renewables construction workforce estimates by month, provided to EMM to inform this SIA.

Figure 2.3 Construction workforce

iii Worker accommodation

Temporary worker accommodation facilities for non-local construction employees (where skills cannot be sourced locally) are proposed in the eastern area for Stage 1 (Figure 2.1) and the western area for Stage 2 (Figure 2.2). Each accommodation facility will be established early in the construction phase for each stage of the project. Each facility will accommodate up to 450 workers.

The indicative location of the accommodation facility in the eastern area is shown in Figure 2.1. If Dinawan Solar Farm (SSD-50725959) is approved, this accommodation facility will be co-located with the temporary Dinawan Solar Farm worker accommodation facility. The indicative locations for the two accommodation facility options in the western area are shown in Figure 2.2.

Each accommodation facility site is approximately 6 ha and will include:

- modular and relocatable single rooms/quarters
- office building(s)
- mess area (including stores, kitchen and dining area)
- laundry facilities

- toilet and shower facilities
- car and shuttle bus parking area
- a medical centre or first aid room staffed by personnel with suitable first-aid/medical training
- recreation areas.

The layout of the accommodation facilities will be determined during detailed design. All components will be within the development corridor.

Each facility will principally accommodate employees and long-stay contractors and will have the capacity to accommodate approximately 75% (450 people) of the project's peak construction workforce (approximately 600 people) on the basis that approximately 25% of the workforce will be locally based.

The facilities will use modular and relocatable single rooms/quarters and will be 'scaled up' and 'scaled down' based on construction workforce requirements.

The facilities would be operated by a staff of about 5–10, including administration, cleaning, food preparation, maintenance and security staff. Once operational, the accommodation facilities will be used for 24 hours a day, 7 day a week. Where possible, local businesses will be engaged to supply goods and services to the facilities, typically consisting of laundry, cleaning and catering.

Where possible, local businesses will be engaged to supply goods and services to the facilities, typically consisting of laundry, cleaning, and catering.

The facilities are expected to be removed and its footprint rehabilitated once project construction is complete.

2.4.2 Operations

i Timing

Stage 1 of the project is expected to be commissioned in 2027-2028, subject to the availability of grid access.

The operational lifespan of the project is expected to be in excess of 25–35 years, depending on the wind technology implemented and energy market demands. The project will operate continuously, 24 hours per day, 7 days per week.

ii Workforce

Project operations will require up to 50 full-time personnel. Project operations will be supported by contractor roles for vegetation, weed and pest management, annual module cleaning and equipment calibration, internal road maintenance and facility cleaning.

A more detailed description of the project can be found in Chapter 3 of the EIS.

2.5 Study areas

The SIA study area, also referred to as 'social locality' in accordance with the SIA Guideline is defined with reference to stakeholders who could be directly or indirectly affected by the project. This includes landowners, nearby neighbours, community members, businesses, service providers, and Aboriginal groups who may have an interest in the project or may be impacted. The SIA study area identifies the social and geographical areas of focus and considers:

- 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.

To define baseline characteristics, respective SIA study areas have been identified with reference to applicable Australian Bureau of Statistics (ABS) statistical geographic areas as described below and outlined in Table 2.1**.**

The **local study area** consists of communities that may experience direct social impacts from the project, such as impacts related to amenity, traffic and the influx of the workforce. The local study area is shown in Figure 2.5.

Nearby regional communities are the surrounding townships that may experience social impacts related to social infrastructure and services, employment, business and industry, and housing and accommodation. These townships may also experience a range of positive and negative cumulative impacts.

The **regional study area** is comprised of the geographic areas likely to primarily experience indirect social impacts of the project. Indirect impacts are associated with use of infrastructure, supply chains, roads, transportation of goods, materials and equipment, the movement of workers, and cumulative impacts arising from other projects in the area. The regional study area comprises Edward River LGA and Murrumbidgee LGA.

The local study area, nearby regional communities, and regional study area are illustrated in Figure 2.4. The statistical areas that comprise the local study are listed in Table 2.1 and shown on Figure 2.5.

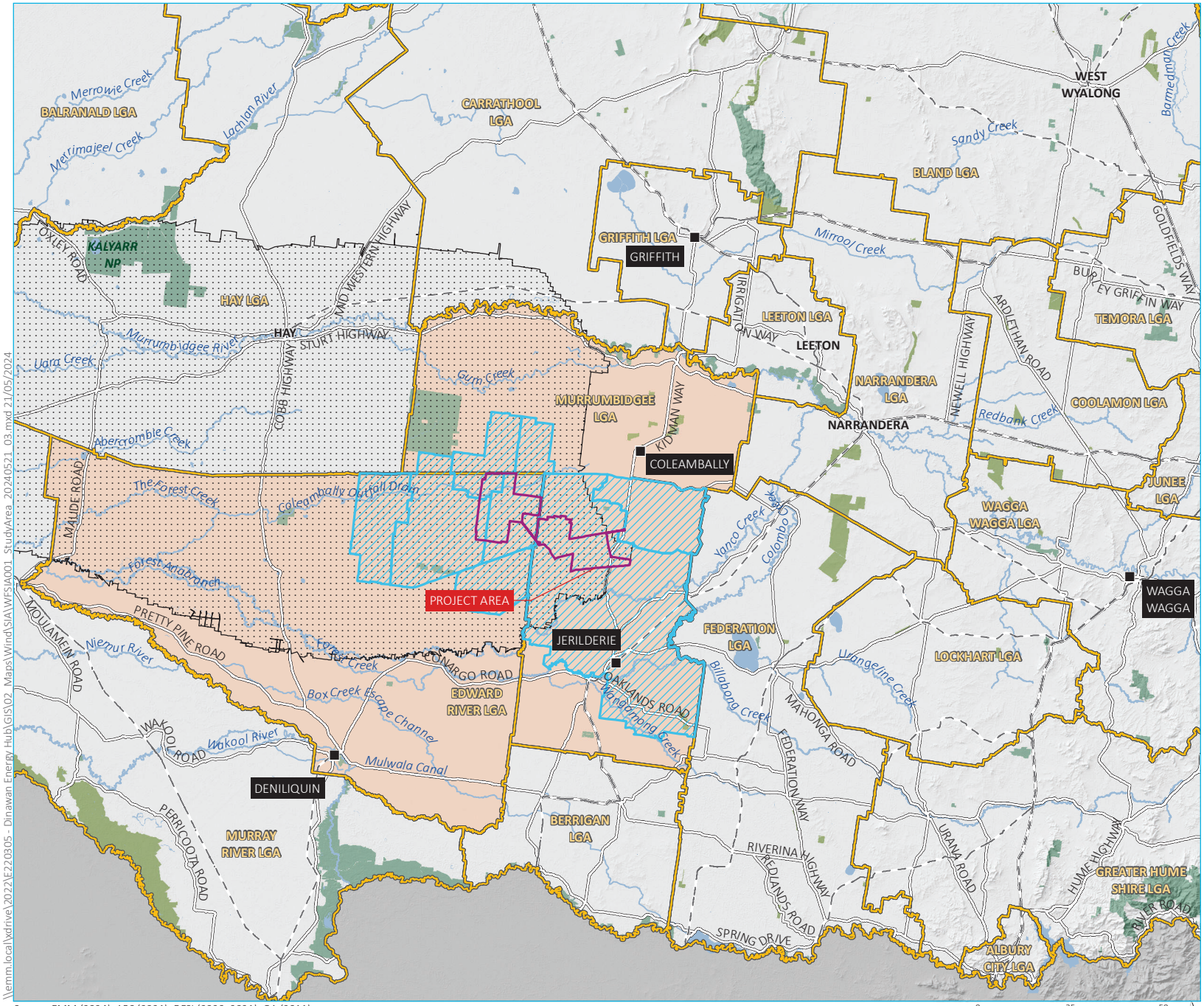
During the 2021 Census, certain areas within the local study area either had a very small population or no residents at all. Consequently, Census data for the localities of Mabins Well, Four Corners, Steam Plains, and Willurah, were not available. While these areas have been considered part of the local study area, data presented in this report for the local study area does not encompass these localities.

Table 2.1 Study areas

Study area	ABS data category	Relevance to the project
Local study area	SA1 10903118529	The project area and adjoining Dinawan Solar Farm, inclusive of a 5 km buffer, sits within two SA1 areas and six SALs, as shown in Figure 2.5. Localities that make up this area include: • Moonbria • Mabins Well • Four Corners • Steam Plains • Willurah • Gala Vale • Argoon • Bundure • Southern portion of Coleambally • Northern portion of Jerilderie • Western portion of Oaklands There are 23 non-associated residences within 8 km of a proposed WTG (Figure 1.2), including one dilapidated/abandoned dwelling. Residents and landowners (including businesses) within these suburbs are expected to experience direct impacts from the project. The project area is located across the northern portion of Jerilderie and Bundure (SA1 10903118529).
	SA1 11301125715	
	Moonbria (SAL 12711)	
	Mabins Well (SAL 12437)	
	Four Corners (SAL 11558)	
	Steam Plains (SAL 13671)	
	Willurah (SAL 14326)	
Nearby regional communities	Coleambally (SAL 10964)	The township of Coleambally is located about a 25-minute drive north of the project area, connected by the Kidman Way. Likely to be a source for labour, goods and services which will support the project and subsequently experience social impacts and benefits.
	Jerilderie (SAL 12023)	The township of Jerilderie is located about a 25-minute drive south of the project area, connected by Kidman Way. Likely to be a source for labour, goods, and services which will support the project and subsequently experience social impacts and benefits.
	Wagga Wagga (SUA 1035)	The regional centre of Wagga Wagga is located about a two-hour drive east of the project area, connected by the Sturt and Newell Highways. Likely to be a source for labour, goods, and services which will support the project and subsequently experience social impacts and benefits.
	Griffith (SA2 113011256)	The regional centre of Griffith is located about a one-hour drive north of the project area, connected by Kidman Way. Likely to be a source for labour, goods, and services which will support the project and subsequently experience social impacts and benefits.
	Deniliquin (SA2 109031182)	The town of Deniliquin is located about an 80-minute drive south-west of the project area, connected by Conargo and Carrathool Road. Likely to be a source for labour, goods, and services which will support the project and subsequently experience social impacts and benefits.
Regional study area	Murrumbidgee LGA (LGA 15560)	The project sits partly within the Murrumbidgee LGA. Potential positive and negative impacts are expected to be experienced across this area, such as demand for accommodation, workforce, and social infrastructure. It is expected that the local community across the LGA will experience benefits from the project through training, up-skilling, and employment opportunities. Members of the community have an interest in employment and business opportunities associated with the project.
	Edward River LGA (LGA 12730)	The project sits partly within the Edward River LGA. Positive and negative impacts are expected to be experienced across this area, such as demand for accommodation, workforce, and social infrastructure. It is expected that Edward River Council will have an interest in workforce accommodation and employment opportunities.

Table 2.1 Study areas

Study area	ABS data category	Relevance to the project
Area of reference/South West REZ	Murray (SA4 109)	The project lies within the Murray SA4 area. This area acts as a reference point to understand and distinguish the local and regional study areas within a regional context. The Murray SA4 closely resembles the area that comprises the South West REZ. Infrastructure delivered under the Electricity Infrastructure Roadmap coincides with associated benefits, including targeted training, up-skilling, and employment opportunities. It also coincides with challenges, where accommodation and workforce capacity has been raised as key concerns on other renewable energy projects.
State of NSW	New South Wales STE	Data for NSW provides a reference point against which to analyse social characteristics of communities across each of the SIA study areas.



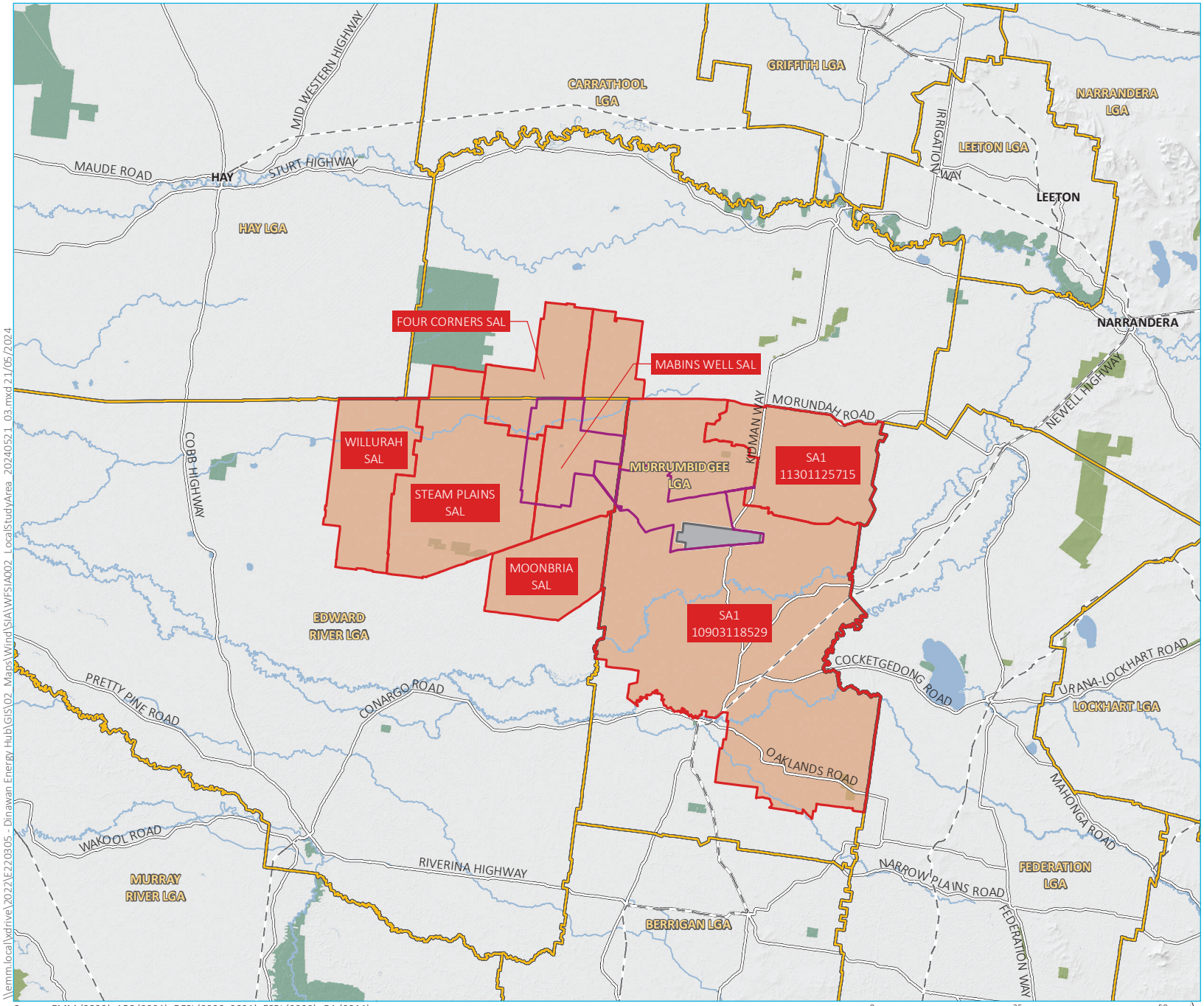
\\emm.local\ydrive\2022\E220305 - Dinawan Energy Hub\GIS\02_Maps\Wind\SIA\WFSIA001_StudyArea_20240521_03.mxd 21/05/2024

Source: EMM (2024); ABS (2021); DFSI (2020, 2021); GA (2011)

SIA study area

Dinawan Wind Farm
Social Impact Assessment
Figure 2.4

EMM
creating opportunities



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Source: EMM (2022); ABS (2021); DFSI (2020, 2021); ESRI (2022); GA (2011)

Local study area

Dinawan Wind Farm
Social Impact Assessment
Figure 2.5

EMM
creating opportunities

3 Methodology

This section presents the methodology which guided completion of the SIA. The methodology was specifically tailored to meet the requirements of the SEARs and the SIA Guideline (DPE 2021a). This SIA has also been informed by best practice guidance and standards articulated by the International Association for Impact Assessment (IAIA) and International Finance Corporation (IFC).

The following sections describe the phases of the SIA methodology which reflects the SIA process outlined in the SIA Guideline (DPE 2021a). The SIA report, which is an output of Phase 2, will be placed on public exhibition with the EIS, along with submissions received and responded to in Phase 3.

3.1 Methodological phases

3.1.1 Phase 1

i Scoping and initiation

As per the SIA Guideline (DPE 2021a), the purpose of an SIA Scoping Report is to present the findings of initial project scoping which includes outlining the social context, the nature and scale of project activities which might impact the receiving social environment, and subsequent definition of the SIA study areas (social locality).

The *Dinawan Wind Farm Social Impact Scoping Report* (EMM 2022a) was submitted to the NSW DPE (now Department of Planning, Housing and Infrastructure (DPHI)) as part of the *Dinawan Wind Farm Project Scoping Report* (EMM 2022b), using an approach consistent with the SIA Guideline (2021a). Scoping is the first phase of the SIA process and provides an understanding of what the project entails and how it might interact with the social environment.

The SIA Scoping Report identified initial key elements of the SIA including:

- potentially affected stakeholders
- an understanding of the SIA study area
- potential negative and positive social impacts for further investigation
- the level of assessment required to address potential social impacts
- the methodology to be adopted in completion of the SIA.

The Scoping Report informed definition of the SEARS as outlined in Section 1.2.

Within the SIA Scoping Report, Section 4.1 provides a summary of key matters for consideration in the SIA. These matters are addressed in this SIA report.

3.1.2 Phase 2

Spark Renewables has approached stakeholder engagement for the project in an integrated manner for the proposed Dinawan Energy Hub, which comprises the project, together with the Dinawan Solar Farm which is being assessed separately (SSD-50725959).

An integrated engagement program was undertaken to inform this SIA, which sought specific inputs on the project's potential impacts and opportunities, while also considering these in the context of the Dinawan Energy Hub.

Project-specific information including scope and design elements, timeframes, workforce estimates, and an overview of the approvals process were shared with key stakeholders to support meaningful engagement, inform the project's design and assessments of impacts and opportunities. As part of this engagement, Spark Renewables has also clearly outlined the full extent of Dinawan Energy Hub so the community is aware of their plans for the development. Consistent with this approach, the SIA study area comprises the localities that make up the entire Dinawan Energy Hub.

This SIA Report focuses on outcomes specific to the project, Dinawan Wind Farm, to assess its potential social impacts and benefits.

i Stage 1 – Social baseline study

Building upon the initial understanding of the existing social environment attained in the scoping phase, a social baseline study was compiled. Key sources of information included existing demographic, health, housing, and socio-economic data collected by the ABS, other government agencies and local government; published literature and social research; government policies and plans; and research completed on similar projects. A wide range of social indicators were reviewed and assessed for relevance.

The selection of social baseline indicators was informed by the social impact categories defined in the SIA Guideline and the outcomes of initial scoping and review of relevant literature (DPE 2021a). The social baseline study provides a comprehensive socio-economic profile and analysis of social infrastructure and its capacity within SIA study areas.

The social baseline study provides the benchmark against which potential social impacts are identified and assessed. The social baseline study is presented in Section 5.

ii Stage 2 – Engagement informing the SIA

A primary source of information drawn upon by the SIA was the feedback generated through engagement with potentially affected stakeholders and communities. SIA field studies were conducted in accordance with Appendix A of the SIA Guideline which prescribes key engagement objectives and methods. The specific activities and outcomes of EIS community engagement and SIA engagement are presented in Section 6.

The engagement component of the SIA employed contemporary social research methods including in-depth stakeholder interviews 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.

During the SIA scoping phase, a community feedback and community values survey was completed. Outcomes from this survey were drawn upon to inform the identification of social impacts and benefits. The outcomes of the survey are presented in Section 6.2.

iii Stage 3 – Social impact identification

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

The identification and assessment of impacts was undertaken with consideration of the impact categories outlined in the SIA Guideline (DPE 2021a) which refers to potential changes to peoples':

- **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 a process of triangulating primary and secondary data sources to validate findings and confirm accuracy. The assessment considered:

- 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 field studies along with broader engagement undertaken as part of the EIS process
- findings from other relevant technical disciplines that contributed to the EIS were reviewed and potential social impacts defined. These included:
    - Landscape and Visual Impact Assessment (LVIA) (Moir Landscape Architecture Pty Ltd 2024) – Appendix E.1 of the EIS
    - Noise Impact Assessment (NIA) (Echo Acoustic Consulting 2024) – Appendix E.2 of the EIS
    - Biodiversity Development Assessment Report (BDAR) (Biosis 2024)– Appendix E.3 of the EIS
    - Aboriginal Cultural Heritage Assessment (ACHA) (EMM 2024c)– Appendix E.4 of the EIS
    - Traffic Impact Assessment (TIA) (EMM 2024d) – Appendix E.6 of the EIS
    - Land and Rehabilitation Assessment (LRA) (EMM 2024e) – Appendix E.8 of the EIS

- Bushfire Assessment Report (BAR) (Waratah Bushfire 2024) – Appendix E.12 of the EIS
- Economic Assessment (Gillespie Economics 2024) – Appendix E.15 of the EIS.

Drawing upon the primary and secondary research outlined above, social impacts specific to the project were identified under the following categories:

- Local amenity – potential amenity impacts experienced by the local community such as noise and dust along with changes to visual amenity
- Energy transition – contribution of the project to the transition to renewable energy and associated intergenerational equity benefits
- Employment, training, and commerce – the positive contribution the project would make to the local and regional economy and how this can be maximised while also considering potential impacts on existing local businesses due to competition for labour
- Housing and services – the nature of the local housing market and service provision in the local and regional area and how this interacts with the needs of project workers
- Cultural heritage– the importance of protecting Aboriginal cultural heritage values and procedures to manage unexpected finds during construction.
- Safety, health and wellbeing – changes to the local road conditions and presence of non-local workers, and associated perceptions to public safety and wellbeing relating to blade throw and vibration.

As part of the hazard and risk assessment (Sherp 2024), an assessment of societal blade throw risk aligned with the *Wind Turbine Risk Zoning Handbook* found the risk is 'less than 1 x 10^{-6} per year', determining the potential to be 'negligible' in the context of project design, operation and maintenance regulations, with no additional mitigation measures required. As such, this SIA has not provided detailed treatment of this risk, but incorporates recommendations for engagement with nearby landowners to establish shared understanding of EIS findings.

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

iv Stage 4 – Social risk assessment

This stage involved the systematic assessment of each identified social impact to predict the nature and scale of potential social risk associated with construction and operation of the project. The risk approach assesses the magnitude and likelihood of potential positive and negative social impacts with and without mitigation.

The social risk assessment stage evaluates each identified potential social impact. Evaluating potential positive and negative impacts considers both subjective (experiential) and objective (technical) components of 'likelihood' and 'magnitude'. The criteria for rating levels of 'magnitude' and 'likelihood' for social impacts are provided in Appendix C. Once established, these levels of 'likelihood' and 'magnitude' are then interpreted through the social impact 'significance matrix'. The social risk assessment matrix is provided in the Technical Supplement (DPE 2021b) and presented in Figure 3.1. This process is applied to potential social impacts to understand the significance level of impacts before mitigation/enhancement measures. The process is applied again assuming the adoption of mitigation/enhancement measures, which determines the residual significance level of social impacts.

		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 (DPE 2021b)

Figure 3.1 Social impact significance matrix

v Stage 5 – Social impact mitigation and benefit enhancement

Findings from Stages 1–5 were used to distil and analyse recommendations for mitigation and enhancement measures for the identified social impacts and benefits. A mitigation and management framework was prepared with consideration of all potential social impacts and benefits to allow for the identification of:

- required impact mitigation measures
- enhancement measures to maximise potential benefits
- partnership opportunities.

As stated above, other relevant technical studies undertaken as part of the EIS were considered for impact evaluation. This stage assesses how proposed mitigation measures from these studies may manage social impacts as identified by this SIA, and where necessary, proposes additional, complimentary social mitigation measures.

vi Stage 6 – SIA reporting

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

3.1.3 Research limitations

This SIA has been based on the best available information relevant to SEARs specific to the project. The SIA assessment is based on the project description provided in Chapter 3 of the EIS. It has been noted that while project components are generally fixed, some refinements to the physical layout or design of certain components of the project may be required following further investigation and design. The objective is to ensure that the final design can meet construction requirements while continuing to minimise social and environmental impacts and deliver benefits.

The SIA relies on several assumptions regarding workforce requirements and the associated accommodation strategy that will be refined during later stages of project planning and development. Proposed mitigation and management measures have been developed based on the most accurate information available at the time of writing this SIA. As per the SIA Guideline, an adaptive management approach is required to ensure mitigation and management strategies remain valid.

Other assumptions and limitations of the research include:

- A key source of data describing social conditions is the ABS Census of Population and Housing, the latest of which was in 2021. There may have been changes to social characteristics since this census event. A consideration is that the 2021 Census occurred during the height of COVID-19 pandemic restrictions which may have impacted upon socio-economic trends and characteristics as recorded.

- 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 generated through SIA engagement is based on the interviewee's knowledge and experience and on their willingness to participate and share information. The data collected may not be fully representative of the perspectives of all community members.

- During stakeholder interviews data is recorded in note form by the SIA specialist conducting the interview. Comments and quotes in this report are summarised as accurately as possible but may not be verbatim.

4 SIA policy and planning context

This section provides a summary of the relevant policy, plans, strategies, and guidelines that inform an appreciation of potential social impacts and benefits associated with the project. The project's overall consistency with relevant policies and plans is also addressed in Chapter 4 of the EIS.

4.1 State strategies, plans, and guidelines

This section provides a summary of State level strategies, plans, and guidelines which are relevant to the project.

Table 4.1 State strategies, plans, and guidelines

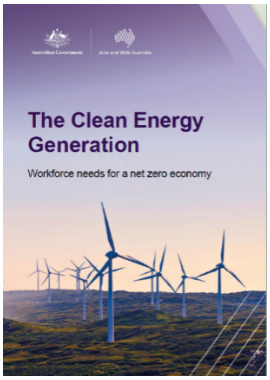
Name	Description and relevance to the project
The Clean Energy Generation: Workforce needs for a net zero economy (Jobs and Skills Australia 2023) 	Commissioned by the Australian Government, Jobs and Skills Australia completed a capacity study on the workforce needs for Australia's transition to a clean energy economy. The report provides an analysis of the current and future workforce needs, transition challenges, training and education pathways, and opportunities to transform existing sectors through decarbonisation. It also provides 50 recommendations to support levels of government with workforce planning and policy reform efforts. Findings of the study include: • Many skills needed to decarbonise already exist in the economy however an additional 4,000 workers will likely be required in clean energy supply over the next seven years with the workforce projected to reach around 84,000 in 2050 based on preliminary modelling. • Electricians and other electrical roles are likely to experience the biggest shortages, with gaps also likely in other building and engineering trades. • There must be a worker-centred approach to support people in transitioning regions (i.e. resources industry dependent). • Need for inclusive pathways that align with the scale and pace required for the net zero transition and minimises traditionally underrepresented population groups face in participating in the economy. High risks identified that demonstrate the needs for real reform include: • a mismatch between employment demand and available skills, particularly in regional areas • current tertiary skills, training and qualifications system is not fit-for-purpose to keep pace with emerging occupations and rapidly changing technologies • Domestic and international competition for skilled workers (i.e. electrical, mechanical, and civil trades, technicians and professionals) within the clean energy sector and with other sectors • ongoing challenges of growing the workforce at pace and scale required including accessibility of opportunities by traditionally underrepresented population groups (i.e. women, First Nations people, and recent migrants) • higher degree of variability and project-based work in clean energy (compared to traditional energy employment) and the workforce needs are also typically front-ended during construction with fewer long-term employment opportunities • shortfall of workers with the necessary VET qualification and workplace experience to fill the large number of expected roles (particularly electricians and other trades and technicians). The report provides insight into the assessment of workforce and skill requirements across the life of projects and potential cumulative demand by the industry/sector as a whole.

Table 4.1 State strategies, plans, and guidelines

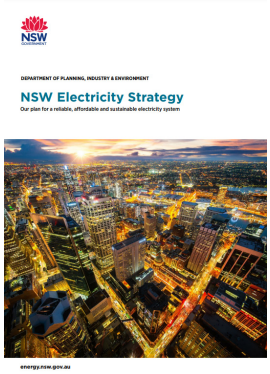
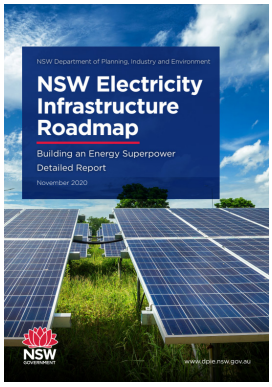
Name	Description and relevance to the project
NSW Electricity Strategy (DPIE 2019) 	The *NSW Electricity Strategy* is the NSW Government's plan for a reliable, affordable, and sustainable electricity future that supports a growing economy and sets out an approach to respond to emerging energy security 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. Principle 1 of the *NSW Electricity Strategy* acknowledges that renewable energy generation is the cheapest form of reliable electricity generation and calls upon investment into these technologies to reduce electricity prices and ensure network reliability. The project will contribute to the development of the declared South West Renewable Energy Zone (REZ) with intended generation of around 1,200 MW (AC). The REZ will in turn meet the aims of the Electricity Strategy by contributing energy to support a secure, reliable energy system. This region has been formally identified as an ideal location to play a key role in renewable energy generation due to an abundance of high-quality wind and solar resources, proximity to existing and planned high voltage transmission (i.e. Project EnergyConnect), relative land-use compatibility and a strong pipeline of proposed projects.
NSW Electricity Infrastructure Investment Roadmap (DPIE 2020a) 	The *NSW Electricity Infrastructure Roadmap* (the Roadmap) completed in 2020 builds on the framework set out by the *NSW Electricity Strategy* (DPIE 2019) and sets out a rationale for the policies and programs that are specifically designed to attract and secure large-scale investment in new electricity infrastructure. The project is within the South West REZ and is ideally placed to contribute to the success of the Roadmap. Once operational, the project could power the equivalent of up to 700,000 NSW households.
NSW Energy Security Target and Safeguard (DPIE 2020b) 	The objective of the *NSW Energy Security Target and Safeguard* is to give the market certainty about how much new electricity 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 *Electricity Investment Act 2020* 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 predicts a target breach over the 2029–30 period. This signals the urgent need for new generation and transmission infrastructure to ensure energy security for NSW consumers. The project will contribute additional energy generation to the National Electricity Market (NEM).

Table 4.1 State strategies, plans, and guidelines

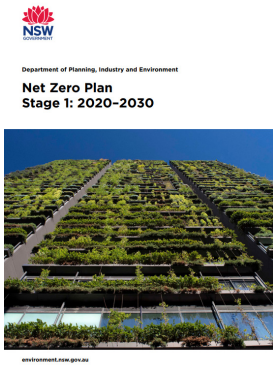
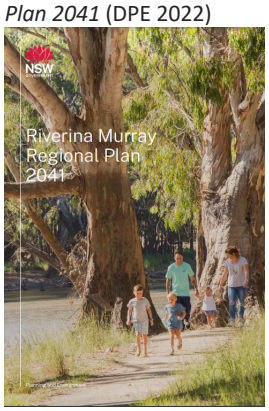
Name	Description and relevance to the project
NSW Climate Change Policy Framework (OEH 2016) 	The *NSW Climate Change Policy Framework* defines the NSW Government's role in reducing carbon emissions and adapting to the impacts of climate change. It commits NSW to achieving net zero emissions by 2050 and sets policy directions to help guide implementation of the Framework. By generating energy from a renewable source, the project will help to lower the network's dependency on coal-fire energy, thus reducing carbon emissions.
Net Zero Plan Stage 1: 2020 – 2030 (DPIE 2020c) 	The *Net Zero Plan Stage 1 2020–2030* is the foundation for NSW Government action on climate change. It outlines the NSW Government's plan to grow the economy and create jobs while helping the state to deliver a 50% cut in emissions compared to 2005 levels. The implementation of the Net Zero Plan, together with the Roadmap, will result in more than 9,000 jobs and up to $37 billion in private investment, with the majority expected to occur across regional NSW. The project will contribute to this plan by reducing carbon emissions by producing clean energy, creating employment opportunities, and increasing private investment.
Riverina Murray Regional Plan 2041 (DPE 2022) 	The *Riverina Murray Regional Plan 2041* is the five-year update to the *Riverina Murray Regional Plan 2036.* The plan recognises that major projects and industries require temporary and permanent workers during construction and operation. These workers contribute to local economies and communities through direct and indirect employment opportunities and support growth and other investments across the region. The Plan notes that workers will require housing in the region's towns and villages, necessitating careful management during the construction of large-scale developments, such as renewable energy projects, mining, Murray River bridge crossings and Inland Rail. Seasonal agricultural employment and tourism also creates demand for short-term accommodation. The plan also recognises the region's role in supporting the NSW Government to transition to net zero by 2050. Highlighting the plan for the South West REZ to be developed in the medium to long term. The plan notes the potential for land use conflict and local impacts of renewable energy projects. Planning needs to appropriately consider opportunities to minimise land use conflict for renewable energy generation and associated infrastructure. Actions include that DPHI are to liaise with the Department of Regional NSW and councils to quantify the cumulative housing demand from major projects and infrastructure projects. This will enable the planning system to determine suitable mechanisms to ensure the project design and development assessment process considers these impacts early.

Table 4.1 State strategies, plans, and guidelines

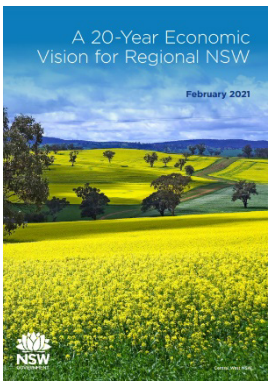
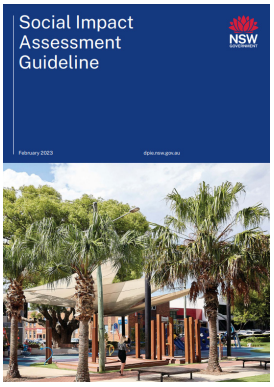
Name	Description and relevance to the project
Western Riverina Regional Economic Development Strategy – 2023 Update (Department of Regional NSW 2023) 	The *Western Riverina Regional Economic Development Strategy – 2023 Update* guides the long-term economic vision and associated strategy for the Western Riverina region. The Western Riverina region includes the Murrumbidgee, Narrandera, Leeton, Griffith and Carrathool LGAs. The strategy identifies the trend of renewable energy investment in the Western Riverina region, where a key focus is on investment benefits being shared equitably across communities. It also identifies the opportunity to leverage this investment to support the growth of renewable energy practices within the region. Investment in renewable energy infrastructure within the South West REZ is considered an opportunity to improve transmission connections in the area, where network capacity is currently limited. The strategy also identifies job creation as another key opportunity relating to renewable energy investment. The strategy also recognises the contribution of the emerging electricity sector to the liveability and economic resilience of the region. It considers natural resources, including wind and solar, as an opportunity to deliver growth in the region, where the Dinawan Energy Hub, along with other renewable energy projects, are considered a strength for the region's economic pipeline.
A 20-Year Economic Vision for Regional NSW (NSW Government 2021) 	*A 20-Year Economic Vision for Regional NSW* presents a strategy including the 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. The vision recognises a significant economic opportunity in the Western Riverina, where the South West REZ is expected to draw in private investment and diversify regional development and employment opportunities. The project will allow for investment opportunities in renewable energy, particularly in the upskilling and reskilling of workers to drive employment and economic growth.
Social Impact Assessment Guideline for State Significant Projects (DPE 2021a) 	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 SIA 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 2021b). This SIA has been developed in reference to the requirements set out in the SIA Guideline, which is described in Section 2. Appendix A provides responses to SIA review questions to demonstrate SIA Guideline fulfilment.

Table 4.1 State strategies, plans, and guidelines

Name	Description and relevance to the project
Undertaking Engagement Guidelines for State Significant Projects (DPE 2022b) 	The *Undertaking Engagement Guidelines for State Significant Projects* describes the requirements for effective engagement on State significant projects in NSW. The engagement guidelines outline 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 the 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 guidelines also provide 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. The *Undertaking Engagement Guidelines for State Significant Projects* has informed the SIA engagement activities carried out for this SIA, which are described further in Section 6.

4.2 Local government strategies and plans

This section provides a summary of relevant plans and strategies for Murrumbidgee Council and Edward River Council. Community strategic plans describe the community's vision and long-term aspirations for an LGA and defines Council's goals, strategies, and actions. A summary of these plans and strategies, and their relevance to the project, is provided in Table 4.2.

Table 4.2 Local government strategies and plans

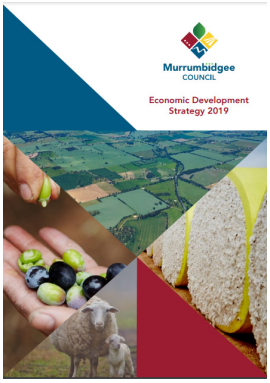
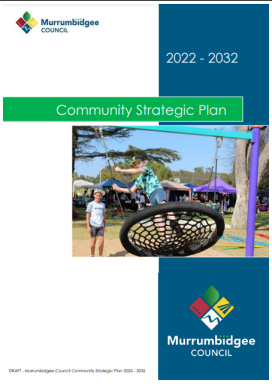
Name	Description and relevance to the project
Economic Development Strategy 2019 (Murrumbidgee Council 2019) 	The Council's *Economic Development Strategy 2019* identifies actions to guide economic development activity in the council area through six themes, including: • attract new business investment • support existing business to grow and diversify • education, training, and skills development • grow the population • infrastructure • develop and promote tourism. The project represents new business investment and has the potential to grow the local population by investing in power infrastructure that promotes economic diversification and increases the economic output of the area. The strategy also recognises the dependence on agriculture as a risk to the community and highlights the need for economic diversity and transformation in this area. By promoting renewable energy and ongoing project investment, the council can reduce its dependence on agriculture and support the development of a more diversified economy, which aligns with the broader goals of the economic development strategy.
Community Strategic Plan 2022-2032 (Murrumbidgee Council 2022a)	The *Community Strategic Plan* is a 10-year plan that builds upon the previous plan adopted in 2017 and outlines the community's aspirations and visions for the future. The plan identifies five strategic themes that relate to the Council's broad governance, reporting, and operational structure. One of the strategic themes related to the environment, which is Strategic Theme 2.2, "Exploring and Promoting Alternate, Sustainable Energy Sources and Practices." The Council recognises the need to encourage investment in and adoption of sustainable energy developments to achieve this goal.

Table 4.2 Local government strategies and plans

Name	Description and relevance to the project
	Another strategic theme, which is Strategic Theme 4, highlights economic strategies that are relevant to the project. Specifically, the plan emphasises the importance of promoting and growing the regional economy. The project aligns with the Community Strategic Plan in several ways. Firstly, the project offers an opportunity to create sustainable energy source options for the area, which supports the environmental goal of exploring and promoting sustainable energy sources and practices. In addition, the project represents an investment in sustainable energy development, which supports the broader goals of the Community Strategic Plan. Furthermore, the project has the potential to deliver economic outputs that can contribute to the growth of the regional economy, which aligns with the objectives outlined in Strategic Theme 4.
Edward River Council Community Strategic Plan 2022 – 2050 (Edward River Council 2022) 	The *Edward River Council Community Strategic Plan 2022 – 2050* aims to prepare a shared vision for the community over 30 years to 2050. One of the key strategic aims is related to shaping the future of the Edward River LGA, which includes the strategic theme 1.1, *"Pristine natural environment"*, which includes the key initiative of supporting renewable energy initiatives to achieve this goal. The project will support shaping the future and diversification of the Edward River LGA. It will seek to maximise environmental protection while developing new renewable energy generation.

4.3 Additional relevant studies and assessments

A summary of various studies that provide additional context to project planning is provided in Table 4.3. Areas include land use planning, managing and coordinating cumulative impacts, and benefits from Roadmap projects.

Table 4.3 Relevant studies and assessments

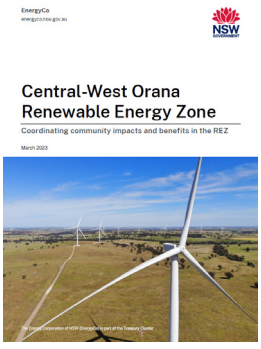
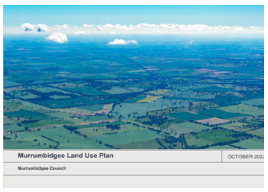
Name	Description and relevance to the project
Central West Orana Renewable Energy Zone: Coordinating community impacts and benefits in the REZ (EnergyCo 2023) 	Published by the Energy Corporation of NSW (EnergyCo), this study summarises community impacts and benefits emerging form the roll-out of renewable energy projects in the Central-West Orana (CWO) REZ, the pilot REZ. This report provides early lessons for consideration in the context of the South West REZ, in particular how impacts are most effectively managed and benefits enhanced. Potential impacts of multiple renewable energy projects identified by the report include: • the potential accommodation impacts from construction workforce on the existing constrained accommodation and housing supply • increasing demand for skilled labour in the energy sector considering current skill shortages. Potential benefits / opportunities include: • 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. These potential impacts and benefits are expected to be relevant the South West REZ.

Table 4.3 Relevant studies and assessments

Name	Description and relevance to the project
Employment, Skills, and Supply Chains: Renewable Energy in NSW (Briggs, et al. 2022) 	Commissioned by the NSW Renewable Energy Sector Board and DPHI, 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 provides a skill and employment assessment for each REZ. The report is relevant to identifying and assessing potential social impacts and benefits associated with the project. The report provides insights into regional and broader drivers and an assessment of workforce and skill requirements across the life of projects, which is drawn upon in the baseline section (Section 5) of this report to build a more nuanced basis for assessing potential impacts. Some overall findings from this report include the following: • the pace of change in the energy sector poses a challenge to predicting and planning for local workforce capacity and up-skilling • skills shortages emerged as the number one identified constraint during stakeholder interviews • short construction timeframes and uncertainty on contracts discourage investment in training workers and can even deter new entrants.
Murrumbidgee Land Use Plan (Habitat Planning 2022) 	Commissioned by Murrumbidgee Council, Habitat Planning (2022) developed the *Murrumbidgee Land Use Plan* to provide direction for achieving Murrumbidgee's medium to long-term urban and rural growth needs. The plan details objectives to assist Council in development and land use planning. The plan considers renewable energy and potential impacts on agriculture, outlining that the Murrumbidgee Council area has seen an increase in interest in the renewable energy sector. This has led to pressures on traditional agricultural lands, increasing the potential for loss of productive farmland and potential land use conflicts. The NSW Government released the *Large-scale Wind Energy Guidelines for State Significant Development* in response, which recommend that wind farms should avoid important agricultural lands, including Biophysical Strategic Agricultural Land, irrigated cropping land, and land with a land and soil capability class of 1, 2 or 3. The Murrumbidgee area has land and soil capability class 3, and the Coleambally area is irrigated cropping land, as such consideration is needed to balance the needs of these activities to protect high-quality agricultural land. This is relevant to this project as it identifies the potential for land use conflict arising from renewable projects as a key local matter.

5 Social baseline

Community profiles provide a qualitative description of an area or community, including a discussion of key trends and issues (Vanclay, et al. 2015). Section 5.1 provides an overview of the local study area and the regional study area by describing key characteristics and geographic setting. A community profile for the social study areas is further developed using key social indicators across Sections 5.2 to 5.9. These sections present key social trends of the social study areas by comparing population, dwelling and labour force indicators to those recorded for the study areas in comparison to the area of reference (Murray – SA4 109) and NSW[1]. The study areas are defined in Section 2.5, and shown in Figure 2.4 and Figure 2.5.

5.1 Overview of key characteristics

5.1.1 Local study area

The local study area is comprised of several localities that surround the greater Dinawan Energy Hub. The project area for the Dinawan Wind Farm is located across the northern portion of Jerilderie and Bundure (SA1 10903118529). The local study area comprises 407 people, where 5.2% identified as Aboriginal and/or Torres Strait Islander. The land surrounding the project area is sparsely populated, with five non-associated residences within 4 km of a WTG location.

Within the local study area, 53.8% of people were employed as managers, which includes those managing farming operations. Irrigated agriculture is a key feature of the local study area, where cattle and sheep grazing are common land uses within the local study area.

During the 2021 Census, certain areas within the local study area either had a very small population or no residents at all. Consequently, Census data for the localities of Mabins Well, Four Corners, Stream Plains, and Wilurah were not available. While these areas have been considered part of the local study area to acknowledge the potential for localised project impacts on their limited residents, the data presented in this report for the local study area does not encompass these particular localities.

5.1.2 Nearby regional communities

Nearby regional communities include the surrounding townships of Coleambally, Jerilderie, Wagga Wagga, Griffith and Deniliquin. These communities have a combined population of over 86,000 people with the largest community being Wagga Wagga with over 57,000 residents. These areas have seen a decline in population of over 3,300 people, or over 3.7% since 2016. In the 2021 Census, 5,652 people identified as Aboriginal and/or Torres Strait Islander in these areas, representing 6.4% of residents. These areas have varied sources of employment. Health care and social assistance is a significant industry in Wagga Wagga and Deniliquin, while agriculture, forestry and fishing is the key industry of employment in Coleambally and Jerilderie.

5.1.3 Regional study area

The regional study area is comprised of the Murrumbidgee LGA and Edward River LGA, with a total area of 15,761 km^2 and combined population of 11,809 people, where 8.6% (290 people) identify as Aboriginal and/or Torres Strait Islander. The regional study area is experiencing population decline, with a 4.9% decrease in residents between 2011 and 2021. The most common occupation was managers (22.5%) within the regional study area, which includes those who manage farming operations. An overview of the key characteristics of each LGA is provided below.

[1] All qualitative data for this section has been drawn from the 2011, 2016, and 2021 ABS Census', unless specified otherwise.

i Murrumbidgee LGA

Murrumbidgee LGA is a rural area located in the Riverina Murray Region of south-western NSW. Covering an area of 6,880 square kilometres, the LGA has a population of approximately 3,300 people spread across the townships of Darlington Point, Coleambally, and Jerilderie, as well as several smaller rural localities (Murrumbidgee Council n.d.). The LGA is named after the Murrumbidgee River, which flows through the region and is a major source of water for irrigation and other uses. The region is predominantly agricultural, with over 100 km of natural river frontage to the Murrumbidgee River, supporting an irrigation network which provides water for agricultural production. The local economy is heavily reliant on farming, with sheep and cattle grazing and the growing of rice and cereals such as wheat and sorghum being key agricultural products (.id Consulting n.d.).

The region's council administrative centres are distributed across the three main townships of Darlington Point, Coleambally, and Jerilderie. The area is also home to several nature reserves and parks, including the Murrumbidgee Valley National Park and Oolambeyan National Park, which are locations for outdoor activities such as hiking and camping and are valued for their scenic amenity and biodiversity (Murrumbidgee Council 2022).

The Murrumbidgee area has a high level of cultural significance to local Aboriginal communities. The Wiradjuri Aboriginal people are the traditional custodians of the land, and their connection to the region dates back thousands of years (.id Consulting n.d.). The name Coleambally is a Wiradjuri word that means “fast bird”, and Dinawan refers to the Wiradjuri word for “emu” (Bundyi Cultural Services 2023). Murrumbidgee, which means “track goes down here”, or “a very good place”, or “big water”, is the namesake of the river which has played an important role in the spiritual and cultural practices of these communities and has also been a source of food, water, and medicine for generations (.id Consulting n.d.). The project area has been referred to by Traditional Owners as a spiritual place and *“has many special places, songlines and dreaming places that my people have cared for and continue to have connection”* (Bundyi Cultural Services 2023).

According to the Murrumbidgee Council’s Community Strategic Plan (CSP), the Murrumbidgee community values their natural environment and values access to well-planned social and community infrastructure (Murrumbidgee Council 2022).

ii Edward River LGA

Edward River LGA is a rural area located in the Riverina Murray Region of south-western NSW. Covering an area of 8,881 square kilometres, the LGA has a population of approximately 8,400 people. The largest township in the Edward River LGA is Deniliquin, with smaller villages including Blighty, Booroorban, Conargo, Mayrung, Pretty Pine, and Wanganella. Land use in the area is dominated by agriculture including sheep and cattle grazing, forestry, and the growing of crops including rice, wheat and canola (.id Consulting n.d.). The LGA is named after the Edward River, which runs through the area.

The region’s primary council administrative centre is located in Deniliquin. The area has an abundance of natural features such as the Edward River Murray Valley Regional Park, McLean Beach, and Willoughbys Beach (.id Consulting n.d.). Tourism is based around natural features and includes adventure trails, driving routes, and water sports as well as agricultural and culinary tourism experiences (Edward River Council 2020).

The traditional custodians of the land and water that comprise the Edward River LGA are the Wamba Wamba and Perrepa Perrepa people. The language group is Wemba Wemba, which is also known as Wembawemba (AITSIS n.d.). The Edward River, known as Kolety in the traditional language, and the surrounding country, has supported cultural activities and provided food and other resources for Aboriginal people for more than 10,000 years (Weir, et al. 2013).

5.1.4 South West REZ

The Murray SA4 area closely resembles the area that comprises the South West REZ (ABS 2021). The Murray region had a population of over 123,000 people in 2021. The region has a growing population, with an increase of almost 7,500 people since 2016. It is characterised by a stable population and a median age of 44 years. In the 2021 Census, over 5,000 people identified as Aboriginal and/or Torres Strait Islander, representing 4.0% of residents. Key industries of employment in the Murray region were health care and social assistance; and agriculture, forestry and fishing.

5.2 Population trends and age

The population of the local study area recorded in 2021 was 407 persons. The project area is contained within SA1 10903118529, which has a population of only 165 persons, which indicates a very small population when comparing it to the nearby regional communities, such as Coleambally (1,152 persons), and Jerilderie (1,029 persons).

Population decline has occurred in the local and regional study areas (ABS 2021). The population of the local study area declined by 26.4% between 2011 and 2021 whilst the population declined by 4.9% in the regional study area over this period. Across the nearby regional communities, population decline occurred in localities with smaller populations, while those with larger populations (Wagga Wagga and Griffith) experienced an increase in population between 2011-2021.

The median age recorded for the Murrumbidgee LGA (45 years) and Edward River LGA (46 years) was higher compared to NSW (39 years), but similar to the area of reference[2]. The median age across the nearby regional communities varied greatly, with younger populations in Wagga Wagga and Griffith, and older populations in Coleambally, Jerilderie, and Deniliquin. Jerilderie had a median age of 51 years which is 12 years higher than the state average.

Table 5.1 Population trends, 2011 to 2021, and median age

Location	2011	2016	2021	Total % change 2016 – 2021	Total % change 2011 – 2021	Median age
Local study area[3]	**553**	**427**	**407**	**-4.7**	**-26.4**	**N/A**
Coleambally	1,311	1,331	1,152	-13.4	-12.1	43
Jerilderie	1,070	1,029	922	-10.4	-13.8	51
Wagga Wagga	52,042	54,411	57,003	4.8	9.5	36
Griffith	17,900	19,144	20,569	7.4	14.9	37
Deniliquin	7,120	7,434	7,038	-5.3	-1.2	47
Nearby regional communities total	**79,443**	**83,349**	**86,684**	**4.0**	**9.1**	**N/A**

[2] As established in Table 2.1, the area of reference is Murray (SA4 109).

[3] The 2011 boundary (for 10903118529 SA1) included an area south-west of Jerilderie that is not included in the 2016 and 2021 data set, which may skew comparisons over this period.

Table 5.1 Population trends, 2011 to 2021, and median age

Location	2011	2016	2021	Total % change 2016 – 2021	Total % change 2011 – 2021	Median age
Regional study area[4][5]	**12,417**	**12,687**	**11,809**	**-6.9**	**-4.9**	**Murr. - 45 Edw. - 46**
Area of reference	**110,317**	**115,803**	**123,552**	**6.7**	**12.0**	**44**
NSW	**6,917,658**	**7,480,228**	**8,072,163**	**8.1**	**16.7**	**39**

Source: ABS 2011; ABS 2016; ABS 2021, Census of Population and Housing: General Community Profiles.

5.3 Aboriginal and/or Torres Strait Islander population

As shown in Table 5.2, the local and regional study areas, as well as the nearby regional communities, had higher proportions of people who identify as Aboriginal and/or Torres Strait Islander compared to the area of reference and NSW average. Within the regional study area, 8.6% of the total population (or 290 persons) identified as Aboriginal and/or Torres Strait Islander, which is more than double the rate seen in the area of reference and NSW.

Table 5.2 Aboriginal and/or Torres Strait Islander population

Area	Aboriginal and/or Torres Strait Islander population total	Aboriginal and/or Torres Strait Islander population
Local study area	**21**	**5.2%**
Coleambally	49	4.3%
Jerilderie	49	5.3%
Wagga Wagga	3,976	7.0%
Griffith	1,195	5.8%
Deniliquin	383	5.4%
Nearby regional communities total	**5,652**	**6.5%**
Regional study area	**290**	**8.6%**
Area of reference	**5,002**	**4.0%**
NSW	**278,043**	**3.4%**

Source: ABS 2021, Census of Population and Housing: General Community Profiles.

4 The current Murrumbidgee LGA boundaries were divided into two areas when the 2011 Census was conducted. In 2011 the regional area consisted of 'Jerilderie (A) LGA' and 'Murrumbidgee (A) LGA', these areas have been combined in 2011 to better represent population change over the decade.

5 The current Edward River LGA boundaries were divided into two areas when the 2011 Census was conducted. In 2011 the regional area consisted of 'Conargo (A) LGA' and 'Deniliquin (A) LGA', these areas have been combined in 2011 to better represent population change over the decade.

5.4 Housing and short-term accommodation

Housing availability and affordability was identified by most stakeholders engaged as part of the SIA as a key issue across the study areas and particularly magnified in the towns of Darlington Point, Narrandera, and Griffith (see Section 6). It was also reported that housing availability in Coleambally was not meeting demand, and this was being exacerbated by delays in a planned subdivision (see Section 6). Short-term accommodation was reported to be frequently at capacity in the Coleambally and Jerilderie area, where seasonal pickers and contract workers utilise accommodation facilities.

Edward River Council's *Community Consultation Report* shows there are concerns regarding access to affordable housing and calls for additional homes to be developed in the area (Edward River Council 2021). Stakeholders engaged as part of the SIA reported that limited access to affordable housing is a barrier to attracting staff, including for health services.

5.4.1 Housing type and composition

In 2021, the most common housing type was separate houses across all areas. The local study area had a rate of 100.0%, and the regional study area and nearby regional communities all had rates over 80.0%, which is significantly higher than the NSW proportion of 65.6%. The nearby regional communities of Griffith and Wagga Wagga had more housing type variability compared to the other study areas, with both having a higher proportion of flat or apartment style housing (12.4% and 10.3% respectively), reflecting what is typical for more populated regional centres.

The regional study area and area of reference are characterised as having greater rates of lone person households (33.0% and 30.4% respectively) compared with the local study area (10.4%) and NSW (25.0%). Considering that the regional study area and area of reference have an increasing number of residents requiring assistance (see Section 5.6.2), higher levels of lone person households may indicate emergent vulnerability in these areas.

5.4.2 Tenure and landlord type

In 2021, most occupied private dwellings within the local and regional study areas were owned by the occupants, which is similar across NSW. Rates of renting were lower and less common in both the local and regional study area compared to NSW, where almost one third of occupied private dwellings were rented (32.6%). Lower rates of rental tenure are expected in areas with higher rates of home ownership and family households.

Rates of social housing in the regional study area (11.9%) is similar to the area of reference (10.8%) and NSW (12.8%). Nearby regional communities recorded higher rates than the NSW average. Significantly, the nearby community of Jerilderie recorded the highest rate of social housing (21.4% of those renting).

The regional study area recorded higher rates of unoccupied dwellings (13.4%) compared to NSW (9.4%). Nearby regional communities of Jerilderie, Deniliquin, and Coleambally all had higher rates (14.4%, 11.8%, and 11.3%, respectively) compared to NSW. Unoccupied dwellings include vacant houses, holiday homes, dwellings to let, recently constructed dwellings, and dwellings awaiting demolition/repair. Unoccupied dwellings indicate the proportion of dwellings that do not contribute to housing local residents at that point in time. Some unoccupied dwellings recorded in the regional study area may be available on the short-term accommodation market; however, as shown in Section 5.4.5 below, there are very few short-term accommodation options publicly advertised across these localities.

5.4.3 Mortgage and rental stress

Mortgage and rent repayments are key indicators of housing affordability. 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).

Table 5.3 below shows that rates of mortgage and rental stress across all study areas are lower than, or similar to, the area of reference. Amongst the study areas, the area experiencing the highest rate of mortgage stress was Griffith and the area experiencing the highest rate of rental stress was Deniliquin. The statistical areas that comprise the local study area are shown in Table 2.1.

Table 5.3 Housing affordability, 2021

Area	Median monthly mortgage ($)	Mortgage stress[6]	Median weekly rent ($)	Rental stress[7]
SA1 10903118529 (part of local study area)	1,200	0.0%	300	0.0%
SA1 11301125715 (part of local study area)	1,786	19.2%	100	0.0%
Moonbria SAL (part of local study area)	N/A	N/A	N/A	N/A
Coleambally (nearby regional community)	867	5.8%	180	6.5%
Jerilderie (nearby regional community)	842	9.7%	175	8.6%
Wagga Wagga (nearby regional community)	1,517	9.1%	300	29.1%
Griffith (nearby regional community)	1,500	10.2%	300	23.4%
Deniliquin (nearby regional community)	1,083	6.5%	230	31.5%
Murrumbidgee LGA (part of regional study area)	869	9.1%	190	13.9%
Edward River LGA (part of regional study area)	1,083	8.2%	220	30.0%
Area of reference	**1,300**	**10.2%**	**250**	**29.5%**
NSW	**2,167**	**17.3%**	**420**	**35.5%**

Source: ABS 2021, Census of Population and Housing: General Community Profiles; ABS QuickStats.

6 Households where mortgage is over 30% of household income.

7 Households where rent is over 30% of household income.

5.4.4 Property price trends

Property price trends for the regional study area are outlined in Figure 5.1 below. Average property price data is provided by postcode, which helps provide a representative snapshot of average housing[8]. Analysis of these trends show a steady increase in property prices across all study areas. A steady upward trend is consistent with most areas of regional NSW. Jerilderie has seen a little more variability over time, with a dip recorded around 2018. As discussed in Section 5.6.1, this was a period of protracted drought, which is linked to economic challenges within the region (Department of Regional NSW 2023).

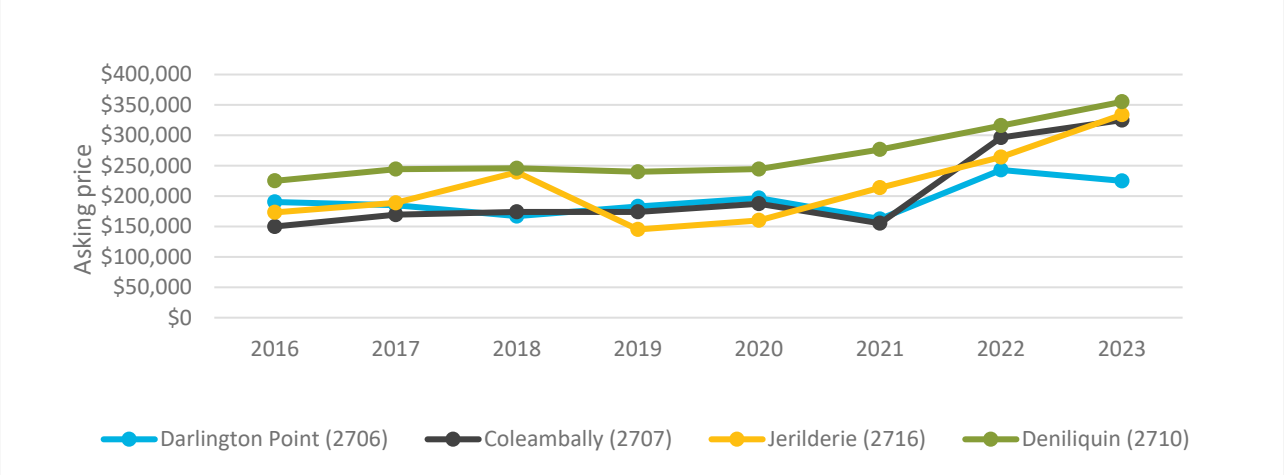


Figure 5.1 Property price trends within the regional study area, 2016–2023

Source: SQM 2023, Free Property Data.

i Residential vacancy rates

According to Real Estate Institute New South Wales (REINSW), rental vacancy rates are traditional market indicators that "measure the proportion of residential properties vacant and available for rent at any point in time" (REINSW 2021). Vacancy rates under 3.0% are low and indicate a tight rental market with an undersupply of rental options while vacancy rates above 3.0% indicate an oversupply of rental options. A higher vacancy rate also indicates a higher proportion of unoccupied dwellings in that area. A rental market with a vacancy rate of about 3% is considered balanced (Brewsters Property Group n.d.).

The residential vacancy rate trends for postcodes that make up the regional study area and the nearby regional communities are provided in Figure 5.2. From January 2016 to January 2023 the residential vacancy rate for the regional study area largely remained well below the 3.0% benchmark and saw sharp fluctuations, including hitting 0.0% at times. This can be explained by the very small number of rentals available across these postcodes, where small numbers are prone to greater statistical variability. For example, while Coleambally had a vacancy rate of 3.1 % in January 2023, this only represents a total of 3 rental vacancies.

For the nearby regional community of Wagga Wagga, vacancy rates have been steadily decreasing since 2018, and dropped below the benchmark in 2019. Most recently the vacancy rate sits at just 0.5%, representing a very constrained rental market. Similarly, the Griffith rental market is constrained; however, constraint is over a more protracted period where rental vacancies have been consistently lower than the benchmark since 2016.

[8] The following postcodes have been used as a proxy for the study areas: 2650 represents Wagga Wagga, 2680 represents Griffith, 2706 represents the Darlington Point locality; 2707 represents the Coleambally and Argoon localities; 2716 represents the Four Corners, Gala Vale, Jerilderie, Mabins Well, and Mairjimmy localities; and 2710 represents Edward River LGA localities including Deniliquin and Moonbria.

Decreasing housing supply, particularly affordable rental housing, has become more acute in the past year across NSW (O'Sullivan 2021). These low rental vacancy rates have reduced the availability and affordability of housing for low to medium income households (O'Sullivan 2021).

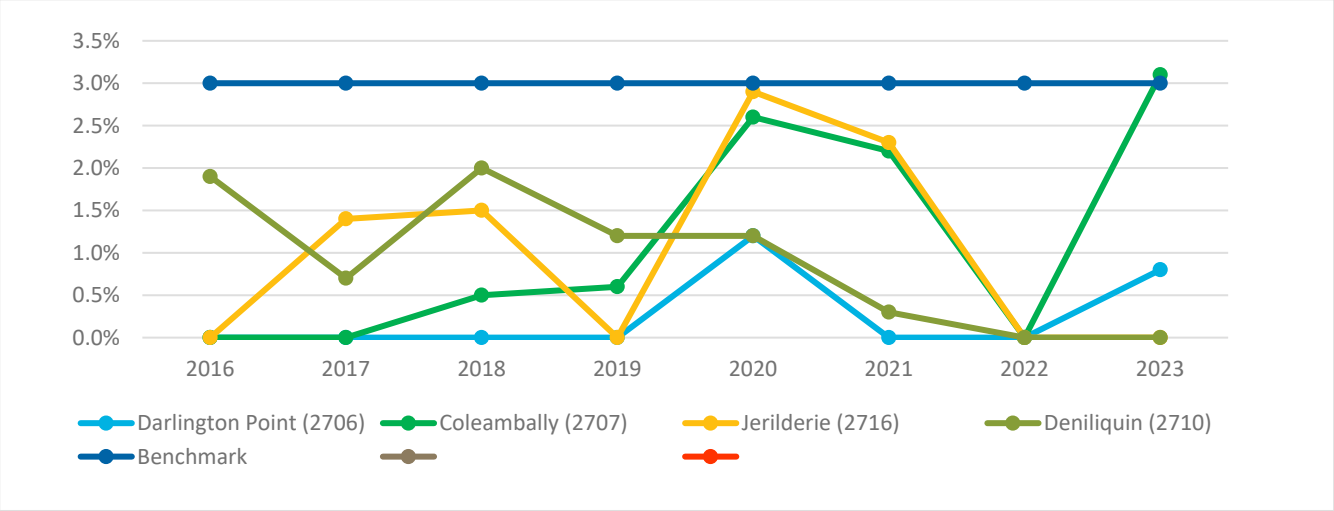


Figure 5.2 Residential vacancy rate trends, Jan 2016– Jan 2023

Source: SQM 2023, Free Property Data

5.4.5 Short-term accommodation

A web search conducted on 5 April 2023 found 46 hotels/motels and 27 other short-term accommodation options in the regional study area. The majority of the hotel/motel accommodation options were located in Deniliquin, which is about an 80-minute drive from the project area. Each township featured at least one caravan park and camping ground, with some of the camping sites being free to use.

Because commute times contribute to fatigue for shift workers (Safe Work Australia 2013), short-term accommodation counts have been presented in Table 5.4 based on approximate travel time to the project area.

Table 5.4 Short-term accommodation counts

Location (approx. commute)	Hotel/Motel	Caravan park/Camping ground	Bed & breakfast/ Cottage/Retreat	Holiday homes/ Airbnb
Under 60-minute drive from the project area				
Coleambally (25 minutes)	2	2	1	1
Jerilderie (25 minutes)	4	1	2	2
Darlington Point (40 minutes)	3	3	-	1
60–80 minute drive of the project area				
Griffith (65 minutes)	13	4	1	7
Narrandera (65 minutes)	8	4	2	2
Deniliquin (80 minutes)	16	4	2	6

Sources: https://www.google.com/travel; https://www.murrumbidgee.nsw.gov.au/cp_themes/default/page.asp?p=DOC-DRX-20-03-75

5.5 Social infrastructure

Central to supporting the quality of life and well-being of communities, social infrastructure can be defined as the "community and individual support services and resources such as health, education, early childhood, community support, community development, culture, sport and recreation, parks and emergency services" (Australian Urban Observatory 2020). As the project will require the influx of construction workers, the capacity of service provision and social infrastructure in the study area could be affected.

According to the Murrumbidgee CSP, a key challenge within the Murrumbidgee LGA is maintaining and upgrading infrastructure, which includes critical components such as roads, water systems, and community facilities. Telecommunication connectivity is also a challenge across the Murrumbidgee LGA, where slow internet speeds and lack of mobile coverage is considered a hinderance to the community, resulting in challenges for those running a business or delivering education and training (Murrumbidgee Council 2020).

Digital connectivity is also an issue for the Edward River LGA community, where coverage is limited across large areas within the LGA. Lack of coverage is considered to impact business productivity and agricultural practices, providing a barrier to attracting investment to the area and impacting safety in the event of emergency (Helen Dalton MP 2021).

5.5.1 Health and emergency services

There are six general practitioner (GP) services in the regional study area. The four main population centres in the regional study area, Darlington Point, Coleambally, Jerilderie, and Deniliquin, each feature a medical centre providing standard GP services, such as mental health, maternal, child, and family health.

Table 5.5 shows the availability of health professionals in the regional study area LGAs compared to NSW. It also includes Wagga Wagga LGA and Griffith LGA as a proxy for the nearby regional communities. This shows that in 2021, there were no GPs recorded within the Murrumbidgee LGA, though desktop search and SIA engagement confirms there is one in Murrumbidgee at the time of this report.

Comparing to NSW, Edward River LGA had a low rate of GPs and a very low rate of total medical practitioners. Wagga Wagga LGA has a comparable rate of GPs compared to NSW, and a much higher rate of total health professionals. Griffith LGA recorded a lower rate of GPs and total medical practitioners compared to NSW (PHIDU 2023). As this dataset was gathered in 2021 and is a point in time representation, data doesn't reflect changes that have happened since then. Further discussion on local services is provided below to capture these changes.

Table 5.5 Availability of health professionals, 2021

Area	GPs per 100,000 people (count)	Total health professionals per 100,000 people
Murrumbidgee LGA	0.0 (0)	84.3 (3)
Edward River LGA	106.7 (9)	154.1 (13)
Wagga Wagga LGA	122.3 (83)	558.5 (379)
Griffith LGA	99.3 (27)	298.0 (81)
NSW	123.8 (10,024)	415.4 (33,622)

Source: PHIDU 2023.

Health services across the regional study area are considered insufficient to meet all local needs (Edward River Council 2022, Murrumbidgee Council 2022), which is common across regional NSW (Parliament NSW 2022).

During SIA engagement, most stakeholders reported that access to health services was a key issue across the regional study area, including for GP, allied health, and Aboriginal health services, and that many travel to Wagga Wagga for health service needs (see Section 6). Lack of quality health care in Edward River LGA is considered a contributing factor to population decline, where people are moving to be closer to better health care services (Edward River Council 2021).

There are two hospitals in the regional study area, Jerilderie District Hospital and Deniliquin Hospital. There is also a multipurpose health facility located at Jerilderie which provides 24-hour accident and emergency service, having a 15-bed facility with three acute care beds and 12 residential aged care beds. There are a further four hospitals in the surrounding region, including Griffith Base Hospital, Hay Hospital, Tocumwal Hospital, and Narrandera District Hospital. Griffith Base Hospital is closest to the project area.

Within the localities of Coleambally, Jerilderie, and Deniliquin there are three police stations and three ambulance stations. There are two fire and rescue stations located at Jerilderie and Deniliquin, and three rural fire service brigades scattered across the regional study area. During SIA engagement, conversations were held with residents of the local area who are volunteers at the local fire brigade (see Section 6).

There are three State and Emergency Service (SES) stations at Coleambally, Jerilderie, and Deniliquin. Other regional communities of Griffith and Wagga Wagga have a higher concentration of emergency services than the regional study area and likely service a greater portion of the study area.

As discussed in the BAR (Waratah Bushfire 2024), the area is also relatively well-served by fire response services. The nearest volunteer fire brigade is Goolgumbla East Rural Fire Brigade, which is within the project area and Argoon Rural Fire Brigade approximately 7 km south of the project area. Emery Rural Fire Brigade is 10 km north-east of the project area.

5.5.2 Community services

Community services include aged care and senior services, children's services, youth services, disability and accessibility services, housing and homelessness services, women's services and family services, Aboriginal services, employment services, and domestic violence services (Healthdirect 2021).

Community services are limited in the regional study area and there are no community services in the local study area. The majority of community services are located in the nearby regional community of Wagga Wagga, with some located in Griffith and Deniliquin. Residents from the local and regional study areas need to travel to access community services.

5.5.3 Education

Education institution attendance in the study area is presented in Table 5.6. Within the local study area, there was a higher proportion of persons attending preschool (11.4%) compared to the regional study area (6.7%), area of reference (7.2%), and NSW (6.8%). This is similar for persons attending infants/primary school with the local study area with 53.4% compared to the regional study area (25.7%), area of reference (27.2%), and NSW (26.5%). However, there are slightly less people attending secondary school in the local study area (20.5%) compared to NSW (20.9%).

In the local study area, only 9.1% of persons attend university or other tertiary institutions, and fewer in the regional study area (5.1%), which is comparatively lower than NSW (15.3%). Across the nearby regional communities, except for Wagga Wagga which has a good presence of tertiary education facilities, there were much lower rates of people attending University or other tertiary institutions compared to NSW. Across the nearby regional communities, Griffith, Wagga Wagga, and Deniliquin have higher rates of people attending technical or further educational institutions. This is an important consideration for identifying local workforce opportunities for the project.

Table 5.6 Education institution attendance, 2021

Area	Preschool	Infants/primary	Secondary	Technical or further educational institution	University or other tertiary institution	Other type of education institution
Local study area	**11.4%**	**53.4%**	**20.5%**	**5.7%**	**9.1%**	**0.0%**
Coleambally	9.8%	31.5%	18.9%	7.9%	4.4%	2.2%
Jerilderie	6.8%	22.4%	13.7%	5.7%	6.1%	1.5%
Wagga Wagga	7.6%	27.3%	21.2%	9.8%	15.0%	2.1%
Griffith	7.6%	28.4%	21.3%	8.5%	6.8%	2.5%
Deniliquin	5.9%	24.8%	19.9%	8.7%	5.6%	1.2%
Nearby regional communities total	**7.5%**	**27.4%**	**21.0%**	**9.4%**	**12.2%**	**2.1%**
Regional study area	**6.7%**	**25.7%**	**19.7%**	**7.8%**	**5.1%**	**1.7%**
Area of reference	**7.2%**	**27.2%**	**21.2%**	**8.6%**	**7.3%**	**2.1%**
NSW	**6.8%**	**26.5%**	**20.9%**	**8.5%**	**15.3%**	**3.0%**

Source: ABS 2021, Census of Population and Housing: General Community Profiles

i Primary and secondary

In 2021, there were 21 schools located within the regional study area. The majority of these were K-6, with six schools that included secondary school year levels. The schools that included secondary year levels are located in Coleambally, Deniliquin, and Griffith. This is consistent with the slightly lower high school attendance as demonstrated in Table 5.6. Information on primary and secondary schools in the regional study area is presented in Table 5.7.

Table 5.7 Schools in the regional study area

Area	School	Sector	Type	Year range	Student enrolments	Teaching staff (FTE)
Carrathool	Carrathool Public School	Government	Primary	K-6	9	1.3
Coleambally	Coleambally Central School	Government	Combined	K-12	163	24.2
Coleambally	St Peter's Primary School	Catholic	Primary	K-6	37	5.6
Deniliquin	Mayrung Public School	Government	Primary	K-6	27	2.6
Deniliquin	Deniliquin South Public School	Government	Primary	K-6	220	16
Deniliquin	Deniliquin North Public School	Government	Primary	K-6	169	11.8
Deniliquin	Edward Public School	Government	Primary	K-6	111	12.9
Deniliquin	Deniliquin High School	Government	Secondary	7-12	505	50.4

Table 5.7 Schools in the regional study area

Area	School	Sector	Type	Year range	Student enrolments	Teaching staff (FTE)
Deniliquin	St Michael's Parish School	Catholic	Primary	K-6	166	10.8
Deniliquin	Deniliquin Christian School	Independent	Combined	K-10	46	6
Griffith	Griffith Public School	Government	Primary	K-6	347	28.2
Griffith	Griffith North Public School	Government	Primary	K-6	432	28
Griffith	Griffith East Public School	Government	Primary	K-6	523	32.3
Griffith	Kalinda School	Government	Special	U	30	6.9
Griffith	St Patrick's Primary School	Catholic	Primary	K-6	457	27.2
Griffith	Marian Catholic College	Catholic	Secondary	7-12	712	58.5
Griffith	Verity Christian College	Independent	Combined	K-9	95	9.8
Griffith	Western Riverina Community School	Independent	Special	9-12	30	5.5
Griffith	Murrumbidgee Regional High School	Government	Secondary	7-12	1150	125.3
Jerilderie	Jerilderie Public School	Government	Primary	K-6	30	2.5
Jerilderie	St Joseph's Primary School	Catholic	Primary	K-6	42	5.1

Source: ACARA 2021, My School.

ii Tertiary and vocational

There are two tertiary or vocational institutions located in the regional study area, both in Deniliquin. These include a TAFE NSW facility and Riverina Community College. However, there are several institutions located in the adjacent regional communities of Griffith, Finley, Deniliquin, Leeton, Wagga Wagga and Narrandera, including:

- TAFE NSW (Griffith)
- TAFE NSW (Narrandera)
- TAFE NSW (Finley)
- TAFE NSW (Deniliquin)
- Riverina Community College (Deniliquin)
- University of NSW, Rural Medical School (Griffith)
- Countries Universities Centre (Western Riverina – Griffith).

5.6 Vulnerabilities

5.6.1 Significant events

The regional study area, as well as many of the nearby regional communities, have experienced several natural and other significant events within the last decade. The region experienced a prolonged period of drought, followed by a mouse plague and severe flooding. These events had notable impacts on the environment and regional economy, particularly for irrigated agriculture in the Murrumbidgee LGA. Additionally, the COVID-19 pandemic posed further challenges for the region, particularly for local businesses. Between 2018 and 2022, the region faced three disaster declarations and received $8.09 million in funding through disaster recovery grants to support recovery efforts (Department of Regional NSW 2023).

5.6.2 Vulnerable groups

Vulnerability relates to a group's capacity to adapt to, or cope with, changes to their social environment (Cutter, et al. 2008). In defining potential project impacts on surrounding communities, it is important to understand the presence of any vulnerable groups as they are likely to experience an impact differently, or may be less adaptable to changes, such as increased traffic associated with construction activity. There are certain demographic and social characteristics that may indicate some groups are more vulnerable than others. Broadly, social indicators associated with vulnerability include:

- age, such as the very young and the elderly who are more likely to require care and may by financially dependent on the working population (people aged 15 to 64)
- socio-economic status, such as people who are recipient of welfare, reside in social housing, or who are unemployed
- people with a need for assistance, such as those people requiring assistance in the core activities of self-care, mobility or communication because of disability, long-term health condition, or old age
- culturally and linguistically diverse (CALD) populations, such as those who live in households where a non-English language is spoken.

Using NSW and the area of reference as a comparison, Table 5.8 illustrates some key areas of vulnerability in the regional study area. These include people aged 14 years or under, people who need assistance, and people who reside in social housing.

When compared to the area of reference, key vulnerabilities in the regional area include a higher rate of:

- people aged 65 years or older
- people who need assistance (for Edward River LGA)
- rental households where rent payments are greater than or equal to 30% of household income (for Edward River LGA).

When compared to the area of reference, key vulnerabilities in the local study area include a higher rate of:

- people aged 14 years or under.

These groups are more likely to be more vulnerable to the impacts of the project.

Table 5.8 Indicators of potentially vulnerable groups in SIA study areas, 2021

Indicator	Local study area		Murrumbidgee LGA		Edward River LGA		Area of reference		NSW	
Population	407		3,353		8,456		123,552		8,072,163	
People aged 14 years or under	**22.9%**	93	**17.2%**	570	**17.6%**	1,481	**18.5%**	21,441	**18.2%**	1,470,012
People aged 65 years or older	**15.7%**	64	**21.4%**	729	**24.8%**	2,102	**21.3%**	24,711	**17.6%**	1,424,135
Youth (15 to 24 years)	**8.8%**	36	**10.2%**	339	**10.3%**	878	**11.4%**	13,219	**11.8%**	954,079
Renter households where rent payments are greater than or equal to 30% of household income	-	-	**13.9%**	41	**30.0%**	248	**29.5%**	3,719	**35.5%**	335,404
People who need assistance	**0.0%**	0	**5.6%**	188	**7.2%**	606	**5.8%**	6,695	**5.8%**	464,712
People who reside in social housing	**0.0%**	0	**9.8%**	29	**12.7%**	105	**31.0%**	3,171	**12.8%**	120,787
Unemployed	**1.2%**	3	**2.9%**	49	**3.6%**	140	**5.7%**	3,041	**4.9%**	84,732
Households where a non-English language is used	**0.0%**	0	**4.2%**	141	**3.0%**	255	**4.0%**	4,581	**22.4%**	2,126,268
Does not speak English well or at all	**0.0%**	0	**0.4%**	13	**0.3%**	28	**0.8%**	893	**4.5%**	361,688

Source: ABS 2021, Census of Population and Housing: General Community Profiles and QuickStats.

5.6.3 Homelessness

As explained by the Australian Human Rights Commission (AHRC), homelessness impacts on human rights to health, personal safety, privacy, education, work, non-discrimination and more (AHRC 2008). During SIA engagement, many members of the community, including those from the Aboriginal community, reported that homelessness was a key challenge within the regional study area, particularly within Darlington Point and Narrandera. It was also noted that many of those experiencing homelessness were from the local Aboriginal community. Homelessness was often linked to other social challenges and was viewed to be disruptive to education and employment (see Section 6).

According to the 2021 Census, rates of homelessness in Murrumbidgee LGA and Edward River LGA (14.9 and 33.1 per 100,000, respectively) were lower than NSW (43.4 per 100,000 people) (ABS 2021). These rates reflect expected rates of homelessness for an LGA with a relatively small population in a rural setting.

5.6.4 Socio-economic advantage and disadvantage

The Socio-Economic Indexes for Areas (SEIFA) provides indicators of relative disadvantage and advantage in the population. Using ABS Census data, these indexes measure a variety of socio-economic characteristics such as income, education, and employment to derive a relative score or ranking. SEIFA provides four summary measures:

- the Index of Relative Socio-Economic Disadvantage (IRSD)
- the Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD)
- the Index of Education and Occupation (IEO)
- the Index of Economic Resources (IER).

The SEIFA decile ranking system allocates the lowest 10% of areas to the decile number of 1 and the highest 10% of areas to a decile number of 10. While there are variations to interpreting the decile scores across the four indexes, generally a low decile rank is associated with disadvantage, and a high decile rank is associated with less disadvantage. SEIFA rankings are not provided for SA4 geographies or for NSW. This is because the decile score is relative to other comparable geographies (i.e. other SALs or LGAs), hence the score already represents a ranking (or position) within NSW. As such, in lieu of comparing ranking to the area of reference or NSW, these scores can be interpreted as their relative position in NSW.

The rankings recorded across nearby regional communities for each of the four summary measures is provided in Figure 5.3.[9]

Rankings across the nearby regional communities vary, where Coleambally experiences above average rankings across the indexes, and Jerilderie, Wagga Wagga, Griffith, and Deniliquin rank within the lowest 2 to 4 deciles across all indexes. This indicates relatively high levels of disadvantage in these areas. Rankings for Murrumbidgee LGA were at, or just above, the median and those for Edward River LGA at, or just below, indicating medium prevalence of relative disadvantage in these areas.

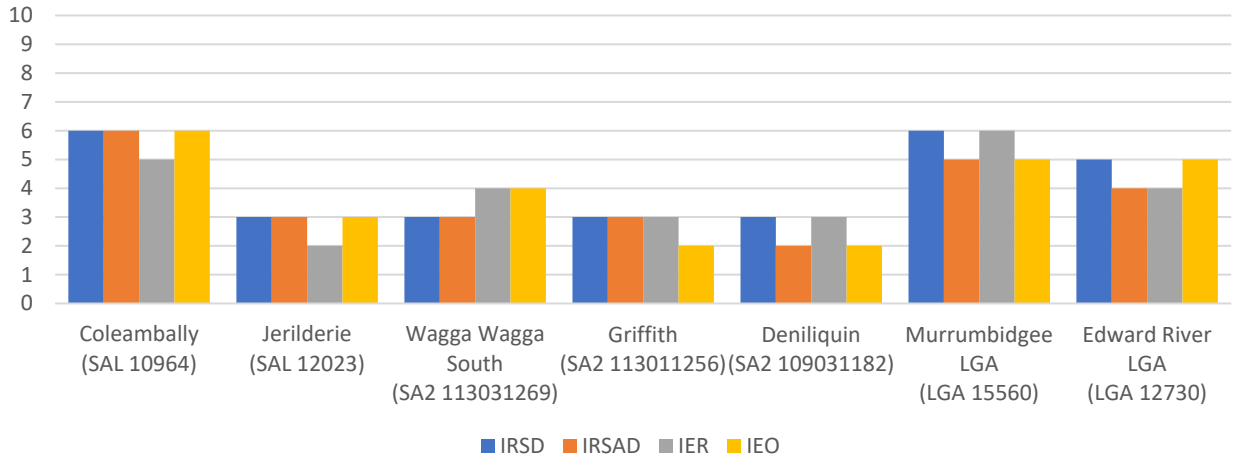


Figure 5.3 SEIFA deciles for nearby regional communities, 2021

5.6.5 Voluntary work

Volunteering rates can give an indication of social cohesion and resilience in a community, and the willingness of people to help each other. Higher rates of volunteerism are also associated with older age groups, households with higher incomes, and couples with children (AIHW 2021b).

Rates of volunteering work within the local study area (33.8%) and the regional study area (21.4%) were higher than that recorded for NSW (13.0%). Coleambally and Jerilderie have the highest rates of volunteering in the nearby regional communities group with 28.0% and 27.4%, respectively. These high rates of volunteerism across the local and regional study indicate a strong sense of community cohesion, which was also reported during SIA engagement (see Section 6). It also may be reflective of exposure to events that require ongoing community collaboration. As described in Section 5.6.1, the regional study area and many of the nearby regional communities have endured elongated periods of drought and floods, COVID-19, and a mouse plague (Department of Regional NSW 2023), which would likely increase the need for volunteers as well as the desire to be one (AIHW 2021b).

[9] SEIFA data was unavailable for Wagga Wagga SUA, where Wagga Wagga South SA2 (113031269) was used as a proxy. SEIFA data was unavailable for Murray SA4. No proxy has been adopted.

5.7 Labour market and income

According to the Murrumbidgee Council CSP, a key aspiration within the Murrumbidgee LGA is supporting local economic development and job creation, which has been challenged by factors such as drought and the COVID-19 pandemic (Murrumbidgee Council n.d.). Opportunities for economic investment and employment have been identified in emerging fields such as renewable energy (Murrumbidgee Council 2019).

Employment opportunities are also a key challenge for the Edward River community, which has been linked to a lack of "interesting" employment opportunities after high school, leading people to leave the area for employment (Edward River Council 2021). The community seeks economic diversity and entry level employment in the area to bring career gateways to the area and retain workers (Edward River Council 2021).

5.7.1 Labour force characteristics

As shown in Table 5.9, labour force participation within the regional study area is similar to that of the area of reference and the NSW average. Labour force participation rates were higher in Coleambally, Wagga Wagga, and Griffith. Jerilderie and Deniliquin had lower rates, which may be explained by higher median ages (see Section 5.2), meaning larger proportions of the population may be retired in theses localities.

Unemployment rates across the study areas and the nearby regional areas are either consistent or lower than the area of reference and the NSW average. This is similar for youth unemployment, with the exception of Griffith which has a lower rate (6.8%) compared to the area of reference (8.1%). For Aboriginal and/or Torres Strait Islander unemployment rates, there is also consistency across the study areas and the area of reference, with the exception of Coleambally and Jerilderie. However, it should be considered that small populations in these areas can result in greater statistical variability.

During SIA engagement, stakeholders reported labour shortages in the area, where agribusinesses were struggling to procure workers on farms (see Section 6).

Table 5.9 Unemployment and labour force participation rates, 2021

Area	Labour force (no.)	Labour force participation	Unemployed persons (no.)	Unemployed	Youth unemployment	Aboriginal and/or Torres Strait Islander unemployment
Local study area	**244**	**76.3%**	**3**	**1.2%**	**N/A**	**N/A**
Coleambally	639	67.8%	13	2.0%	8.4%	0.0%
Jerilderie	391	51.5%	14	3.6%	8.1%	3.6%
Wagga Wagga	28,811	63.2%	1,281	4.4%	8.4%	9.7%
Griffith	10,655	64.2%	352	3.3%	6.8%	11.7%
Deniliquin	3,170	53.9%	129	4.1%	9.4%	10.1%
Nearby regional communities total	**43,666**	**62.6%**	**1,789**	**4.1%**	**8.1%**	**7.0%**
Regional study area	**5,616**	**57.6%**	**280**	**4.8%**	**9.0%**	**8.5%**

Table 5.9 Unemployment and labour force participation rates, 2021

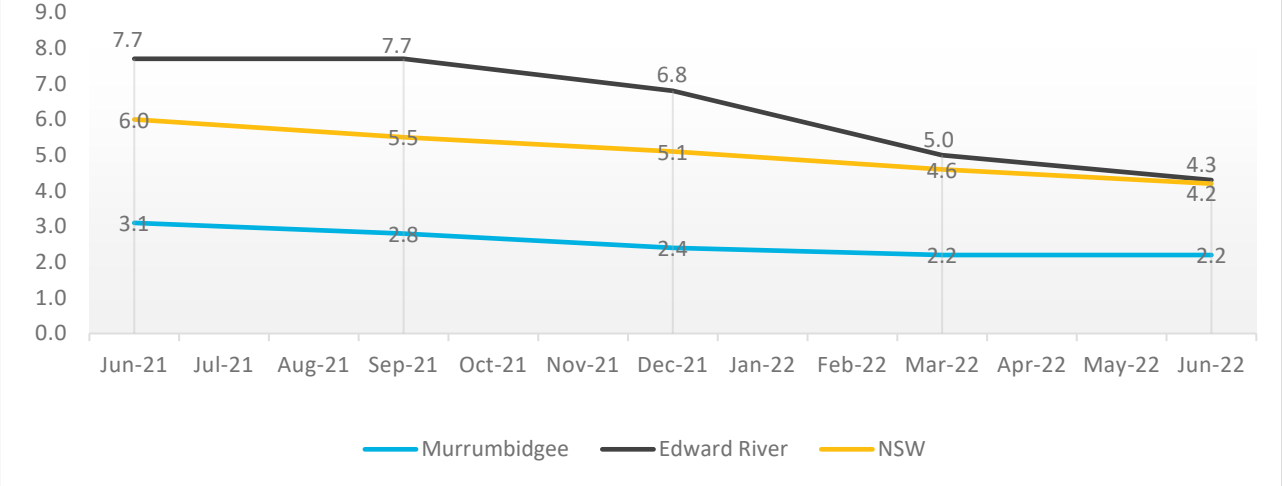
Area	Labour force (no.)	Labour force participation	Unemployed persons (no.)	Unemployed	Youth unemployment	Aboriginal and/or Torres Strait Islander unemployment
Area of reference	**57,892**	**57.2%**	**2,338**	**4.0%**	**8.1%**	**11.1%**
NSW	**3,874,012**	**58.7%**	**189,852**	**4.9%**	**9.8%**	**9.8%**

Source: ABS 2021, Census of Population and Housing: General Community Profiles.

Notes: 1. Youth refers to those aged 15 to 24 years.

2. Aboriginal and/or Torres Strait Islander unemployment data is not provided by the ABS for SA1 and SUAs, Wagga Wagga LGA used as a proxy for Wagga Wagga SUA.

Figure 5.4 shows unemployment rates for Murrumbidgee and Edward River LGAs (the regional study area) and NSW from June quarter 2021 to June quarter 2022. These rates over time show that Edward River LGA has experienced unemployment rates much higher than NSW, and Murrumbidgee LGA has seen much lower rates. In the last published quarter, June 2022, unemployment rates for Edward River LGA have decreased and are consistent with the NSW average. The Edward River CSP identifies that lack of employment opportunities within the LGA is a key concern amongst the community (Edward River Council 2022).



Source: Small Area Labour Market (National Skills Commission 2022).

Figure 5.4 Unemployment over time – LGAs

5.7.2 Occupation

Occupations within the study area are presented in Table 5.10. In the local study area, the most common occupations were managers[10] (53.8%), clerical and administrative workers (12.1%), and labourers (10.9%). This is similar for the regional study area where the most common occupations were managers (22.5%), labourers (12.5%), and clerical and administrative workers (11.3%). The area of reference differs slightly with the most common occupations being professionals (16.4%), managers (16.1%), and technicians and trades workers (14.2%).

[10] 'managers' include those managing farming operations

Table 5.10 Occupations, 2021

Location	Managers	Professionals	Technicians and trades workers	Community and personal service workers	Clerical and administrative workers	Sales workers	Machinery operators and drivers	Labourers
Local study area	**53.8%**	**5.7%**	**7.3%**	**2.8%**	**12.1%**	**1.6%**	**4.0%**	**10.9%**
Coleambally	36.1%	12.3%	9.0%	7.4%	11.8%	2.0%	8.5%	10.7%
Jerilderie	20.9%	10.2%	12.8%	8.4%	13.4%	8.1%	10.2%	12.0%
Wagga Wagga	10.9%	21.3%	14.4%	14.5%	11.7%	9.5%	5.4%	10.6%
Griffith	12.8%	14.1%	13.3%	9.8%	10.8%	9.0%	6.8%	20.9%
Deniliquin	12.2%	16.1%	14.4%	14.9%	11.8%	9.0%	7.2%	11.5%
Nearby regional communities total	**11.9%**	**18.9%**	**14.1%**	**13.2%**	**11.5%**	**9.2%**	**6.0%**	**13.2%**
Regional study area	**22.5%**	**13.1%**	**12.1%**	**11.7%**	**11.3%**	**6.8%**	**7.8%**	**12.5%**
Area of reference	**16.1%**	**16.4%**	**14.2%**	**12.4%**	**11.5%**	**8.4%**	**7.2%**	**12.0%**
NSW	**14.6%**	**25.8%**	**11.9%**	**10.6%**	**13.0%**	**8.0%**	**6.0%**	**8.2%**

Source: ABS 2021, Census of Population and Housing: General Community Profiles.

5.7.3 Income

Individual income data is one of many indicators of socio-economic wellbeing and resilience and is linked to factors such as employment status, age (i.e. students and pensioners often receive a lower income), qualifications and type of employment (.id Consulting 2021). At the time of the 2021 Census, the regional study area and area of reference had a median individual weekly income lower than the NSW average of $813. Deniliquin and Jerilderie recorded the lowest ($688 and $694 respectively), while the local area recorded the highest. It should be noted that income of agricultural producers is highly variable and closely linked to drought, seasonality, and commodity values.

For median weekly household income, all the study areas except for the local areas were lower than the NSW rate of $1,829. Deniliquin and Jerilderie have the lowest household median weekly incomes ($1,199 and $1,166 respectively) which are substantially lower than the NSW figures.

The lower median weekly incomes for Deniliquin are consistent with its SEIFA scores (shown in Figure 5.3) which may indicate higher levels of disadvantage.

5.8 Local business and industry

5.8.1 Industry of employment

Across the regional study area, the largest industry of employment is agriculture, forestry, and fishing (23.3%). The next largest industry is health care and social assistance, at a much lower rate of 13.2%, followed by education and training at 8.0%, and retail trade at 8.0%. The high proportion of employment in agriculture, forestry and fishing indicates a lack of economic diversity in the Murrumbidgee LGA, and a high degree of economic dependence on this sector.

Industries of employment relevant to the project are shown in Table 5.11. Across the study areas, there are low rates of employment in the electricity, gas, water, and waste services industry, as well as professional, scientific and technical services. There was a slightly higher rate across all areas for the transport, postal and warehousing sector. Of the industries relevant to the project, construction was the largest industry of employment across all study areas.

Table 5.11 Industry of employment, 2021

Industry	Coleambally	Jerilderie	Wagga Wagga	Griffith	Deniliquin	Regional study area	Area of reference	NSW
Electricity, gas, water, and waste services	1.6%	2.4%	1.3%	1.4%	3.0%	2.4%	1.0%	1.0%
Transport, postal and warehousing	4.9%	3.1%	3.6%	2.6%	3.9%	3.7%	4.4%	4.6%
Construction	6.9%	4.7%	8.7%	6.8%	7.9%	6.6%	9.4%	8.6%
Professional, scientific, and technical services	1.1%	1.8%	4.1%	3.5%	3.7%	2.8%	3.5%	8.9%

Source: ABS 2021, Census of Population and Housing: General Community Profiles.

5.8.2 Tourism

The local study area is predominately used for agricultural purposes, with limited tourism offerings. The nearest tourism feature in proximity to the project area is a small and basic overnight camping and caravan rest stop located approximately 7 km south of the project area, along Kidman Way at Yanco Creek. The creek is also used for recreational purposes such as kayaking and fishing. However, the Murrumbidgee River in the northern reaches of the regional study area, as well as the Murrumbidgee Valley National Park and Oolambeyan National Park to the north and north-west, respectively, are the more favoured tourist destinations. The regional study area also provides opportunities for agricultural tourism, such as farm and winery tours, while the township of Jerilderie is home to several popular historical sites associated with Ned Kelly.

In the regional study area, there are several natural features, such as the Edward River and Murray Valley National Park, which allow for recreational activities such as kayaking, hiking and bike trails, and fishing (visitdeni n.d.). There are also historic and cultural attractions with the Historical Society Museum and Yarkuwa Indigenous Knowledge Centre in Deniliquin (visitdeni n.d.). Finally, there are events in Deniliquin, such as the Deni Ute Muster, that attract tourists from across Australia and internationally (visitdeni n.d.).

5.9 Summary of key socio-economic baseline characteristics

Key socio-economic characteristics of the **local study area** include:

- very sparse population, comprising those who manage businesses, including agricultural operations
- very few short-stay accommodation options
- low unemployment rates and high labour force participation.

Key socio-economic characteristics of the **regional study area** include:

- population decline and a high median age, indicating an ageing population
- a higher proportion of Aboriginal and/or Torres Strat Islander people, compared to the area of reference
- an economy built on irrigated agriculture, where a lack of economic diversity indicates a high degree of dependence on this sector
- very low unemployment rates in Murrumbidgee LGA, with higher rates of unemployment in Edward River LGA compared to NSW
- low housing vacancy rates, low housing stock, and increasing house prices, indicating challenges with housing accessibility
- a small number of short-stay accommodation options
- low capacity of health services, including GPs, hospitals, and Aboriginal health services
- succession of significant events, including prolonged drought, mouse plague, and severe flooding.

Key socio-economic characteristics of the **nearby regional communities** include:

- Wagga Wagga and Griffith having larger, growing populations
- Coleambally, Jerilderie, and Deniliquin having smaller populations in comparison to Wagga Wagga and Griffith, and also experiencing population decline
- Coleambally, Wagga Wagga and Griffith having younger populations, with high levels of labour force participation
- Wagga Wagga and Griffith hosting key social infrastructure within the regional area, including for health services, where Coleambally, Jerilderie, and Deniliquin have far fewer services and facilities
- Jerilderie and Deniliquin having older populations, and fewer people active in the labour force
- Coleambally and Griffith having very low unemployment rates.

6 Community and stakeholder engagement

This section summarises engagement activities which have informed the EIS and the preparation of this SIA. Engagement activities include those that were carried out as part of EIS engagement, and those that were carried out directly to inform the SIA. SIA specific engagement allowed for in-depth discussion with key stakeholders, such as surrounding residents, local government, and First Nations stakeholders to understand project impacts and benefits from their perspective.

6.1 EIS engagement

Spark Renewables maintain an ongoing community and stakeholder engagement program relating to the project, which commenced in September 2021 as an integrated program for the Dinawan Energy Hub, inclusive of project and EIS specific engagement for the Dinawan Wind Farm and Dinawan Solar Farm.

Key themes raised during EIS engagement are provided in Table 6.1. The issues and concerns identified by specific stakeholder groups have been considered in the overall assessment of social impacts for the project. Full details of community and stakeholder engagement activities, and outcomes of this broader engagement program, are reported in Chapter 5 of the EIS.

A response to each of these matters can be found in Table 6.1 of the EIS.

Table 6.1 EIS engagement – community views relevant to this SIA

Key themes	Stakeholder group raising concern	Matter raised
Biodiversity	Broader community Nearby landholders	• Impacts to biodiversity due to loss of native flora and fauna during construction and operations
Bushfire	Members of Argoon Rural Fire Brigade Coleambally Irrigation Co-operative Limited (CICL) Broader community Nearby landholders	• Potential for the project to be an ignition source for grass fires which are common in the area. • Some positives for fire management also recognised including improved access, monitoring and local firefighting water sources being introduced.
Workforce accommodation	Murrumbidgee Council Edward River Council Broader community Community groups	• A common theme that came up during community engagement was the long term under supply of housing in the region. Stakeholders were concerned about the potential for the project to make the existing housing supply issue worse.
Limited health services	Murrumbidgee Council Edward River Council First Nations groups Community groups Broader community	• Several stakeholders identified limited health facilities and skilled workers in the region as a key issue for consideration by the project.
Community benefit sharing	Murrumbidgee Council Edward River Council Nearby landholders Broader community Community groups Local business and industry	• Stakeholders provided feedback on options for, and the approach to, community benefit sharing. • Key themes discussed included: community fund governance, community projects including proposed health and childcare facilities, upgrades to community infrastructure including telecommunications, recreational and accommodation facilities, funding for First Nations services and initiatives, community investment opportunities and opportunities to reduce community power costs by way of subsidising power bills.

Table 6.1 EIS engagement – community views relevant to this SIA

Key themes	Stakeholder group raising concern	Matter raised
Local procurement and employment opportunities	Murrumbidgee Council Edward River Council Nearby landholders Broader community Community groups Local business and industry	• Community members and stakeholders emphasised that the project should prioritise local procurement and employ local people.
Visual amenity	Murrumbidgee Council Edward River Council Nearby landholders	• Stakeholders were interested in where the project will be visible from and the magnitude of the visual impacts.
Groundwater	Nearby landholders	• Some nearby landholders raised concerns that the project could result in groundwater drawdown impacts and affect water availability on nearby properties.
Agricultural productivity	Murrumbidgee Council Edward Reiver Council Nearby landholders Local business and industry	• Some stakeholders queried what impact the project will have on agricultural productivity on land within the development footprint, as well as on neighbouring properties.
Traffic and transport	Murrumbidgee Council Edward River Council Nearby landholders Broader community	• Stakeholders expressed interest in the proposed site access points, transport route for construction deliveries and potential for traffic impacts to the local road network during construction. Murrumbidgee Council expressed a preference that transport of large loads would be from the north of the project to avoid interactions with nearby townships to the south.
First Nations engagement and cultural heritage	First Nations groups Local business and industry	• The need for meaningful engagement regarding the project's potential impacts on Aboriginal cultural heritage. • Opportunities for First Nations people to benefit from employment and training during construction. • The opportunities for the project's community benefit fund to support the interests of local First Nations people including the need for health services and cultural learning.
Cumulative impacts	Murrumbidgee Council Edward River Council Broader community Community groups	• Several stakeholders raised concerns about the number of concurrent projects that are proposed in the area and the risk of poorly coordinated construction and operation activities resulting in unexpected impacts on the community.
Decommissioning and rehabilitation	Murrumbidgee Council Broader community Nearby landholders	• Stakeholders wanted to understand what would be done to decommission the project and rehabilitate the area at the end of the project life.
Telecommunications	Murrumbidgee Council Broader community Nearby landholders	• Stakeholders identified existing issues with the telecommunications network (including blackspots in the area surrounding the project) and were concerned that the project will make these issues worse by overloading existing network capacity.

6.2 SIA scoping phase community survey (2021)

During the SIA Scoping phase, a community feedback survey and a community values survey were completed. The community feedback survey had a total of 29 respondents and the community values survey had a total of 14. While the response rates for each survey were relatively low, they have been presented here to contribute to understanding the sentiments of the broader community.

Of the 29 responses received for the community feedback survey:

- fourteen (48%) had a general interest in renewable energy projects
- ten (34%) had an interest in employment and procurement opportunities
- eight (28%) had an interest because they either live or own land near the project.

Fourteen respondents answered the community values questionnaire and their responses are outlined in Table 6.2 (project benefits) and Table 6.3 (project concerns).

Of the 14 responses received for the Dinawan Energy Hub community values survey, the top three potential project benefits were:

- investment in the local community (10 responses)
- road upgrades/better access to Rural Fire Services (8 responses)
- increased tourism (7 responses).

Of the 14 responses received for the Dinawan Energy Hub community values survey, the top three potential project impacts were:

- fire (8 responses)
- potential impacts to flora and fauna (6 responses)
- visual impacts and land use (3 responses each).

The feedback generated through the scoping survey was used to inform the preliminary identification of social impacts and benefits requiring detailed assessment within this SIA.

Table 6.2 Community values questionnaire– project benefits

Potential project benefit	Responses (%)	Total responses
Employment opportunities	46.15%	6
Investment in the local community	71.43	10
Road upgrades/better access to Rural Fire Services	61.54%	8
Land use diversification	23.08%	3
Community sponsorships	30.77%	4
Access to cheaper electricity	38.46%	5
Partnerships with Local Aboriginal Land Councils	7.69%	1
Increased tourism	7.69%	1
Clean energy	53.85%	7

Table 6.3 Community values questionnaire – project concerns

Project concern	Responses (%)	Total responses
Visual	23.08%	3
Traffic and road safety	23.08%	3
Potential impacts on flora and fauna	46.15%	6
Increased workforce in the area	7.69%	1
Land use	23.08%	3
Water	7.69%	1
Noise	15.38%	2
Fire	57.14%	8
No concerns	15.38%	2

6.3 SIA specific engagement

SIA engagement sought to gain in-depth insights into key socio-economic issues from the perspective of key stakeholders likely to experience project impacts and benefits. Table 6.4 below provides a summary of SIA engagement activities and participants.

Several stakeholders were invited to participate in SIA engagement activities, such as in-depth interviews, but either declined or did not respond after multiple attempts to initiate dialogue. These stakeholders include several landowners within the project vicinity, registered Aboriginal parties (RAPs), government services and community interest groups.

Responding to the interests of stakeholders to engage on the Dinawan Energy Hub as a whole, and with focused consideration of its wind and solar components, engagement for the SIA and EIS has been combined. This section summarises the SIA engagement activities and inputs relevant to the Dinawan Wind Farm, and in the context of the Dinawan Energy Hub.

Table 6.4 SIA specific engagement activities and participants

Stakeholder type	Stakeholder	Engagement activity	Number of participants	Date
Adjacent and nearby landowners	Landowner 1	Face-to-face interview	2	5 June 2023
	Landowner 2	Phone interview	1	6 June 2023
	Landowner 3	Phone interview	2	14 June 2023
First Nations stakeholders	RAP - individual	Group discussion	5	6 June 2023
	RAP - Bidya Marra Consultancy representative			
	Local Aboriginal community member	Group discussion	2	9 June 2023

Table 6.4 SIA specific engagement activities and participants

Stakeholder type	Stakeholder	Engagement activity	Number of participants	Date
	RAP – Griffith Local Aboriginal Land council (LALC) representative			
	Griffith Aboriginal Medical Service employee	Face-to-face interview	1	9 June 2023
	Bundyi Cultural Services	Phone conversation and written feedback	1	17 May 2023
Local Government	Murrumbidgee Council (MC)	Face-to-face interview	1	7 June 2023
	Edward River Council (ERC)	Video interview	1	15 June 2023
Local community	Coleambally local residents	Group discussion	7	7 June 2023
Business and service	Coleambally Irrigation Co-operative Limited (CICL)	Group discussion	4	6 June 2023
	Coleambally Chamber of Commerce	Face-to-face interview	1	8 June 2023
	Yanco Creek and Tributaries Advisory Council (YACTAC)	Attendance and discussion at YACTAC board meeting	10	7 June 2023
Community / special interest groups	Coleambally Club	Face-to-face interview	2	7 June 2023
	Coleambally Lions			

6.3.1 Key issues and themes

This section provides a summary of engagement outcomes from SIA specific engagement, showing key themes and issues that emerged for each stakeholder type. Notes have had names, addresses and other identifiers removed where necessary to preserve anonymity and privacy of the participants.

i Adjacent and nearby landowners – summary

Three interviews were held with adjacent and nearby landowners, involving a total of five participants. These interviews were carried out face-to-face or over the phone.

Table 6.5 Adjacent and nearby landowner SIA engagement outcomes

Theme/Issue	Notes
Sentiment towards renewable energy projects	• There were a mix of responses regarding support for the proposed Dinawan Energy Hub, including levels of support and objection for various aspects of the wind farm, solar farm, and a level of general interest. • One landowner expressed that they were "shattered and devastated" by the project, describing direct impacts, such as amenity changes, as the key reasons for this distress. • There was general support for the concept of renewable energy across all landowners interviewed.
Project decision-making and stakeholder engagement	• Spark Renewables was described as respectful and professional throughout engagement with landowners. • Some commented that Spark Renewables had heard concerns and addressed these in refinements to project design. • Landowners expressed value in continuing respectful communication and negotiation with Spark Renewables. • Engagement with other entities involved in nearby REZ projects has been a mixed experience for landowners, where landowners reported that some entities lacked communication or respect, while other entities demonstrated professionalism. • General frustration with the multitude of entities involved in the roll out of REZ projects, as well as the time burden associated with engagement across multiple REZ projects and entities. • Concerns around the legitimacy of some renewable energy developers, where some projects fail or assets sold, and landowners are tied to unknown entities.
Business and livelihoods	• Local hospitality and retail businesses would benefit from the presence of non-resident workers in the area. • Disruptions to commercial operations at nearby properties during construction was considered minimal.
Project employment, procurement, and training	• Employ local workers where possible.
Local characteristics and community values	• The area is described as a "pristine Riverina environment", "still", "quiet", and "untouched". • Population in the Murrumbidgee area is declining, attributed to out-migration, ageing population and the mechanisation of farming requiring less workers. • Many in the local area value the remoteness, due to its quiet character and privacy. • "We are here to be away from it all". • Landowners value the natural environment and rural-agricultural character of the local area. • Local community described as self-sufficient, resourceful and educated people. • "We help one another out". • "The spirit of the land will change".
Visual	• Concern raised regarding changed visual amenity and character of the local area. • Concern about visibility of wind turbines from residence.
Access and traffic	• Local roads are in poor condition and prone to flood damage. • Some landholders expressed concern about construction traffic worsening the condition of local roads. • Concern about people moving through area during construction and leaving gates open and stock getting out.
Safety, health, and wellbeing	• Many in the local area are volunteers for the local fire brigade. • Concerns expressed regarding the impact of wind turbines on air-controlled firefighting efforts. • Fire brigade would like to be involved in project emergency response planning.

Table 6.5 Adjacent and nearby landowner SIA engagement outcomes

Theme/Issue	Notes
Accommodation and housing	• Support expressed for a dedicated accommodation facility to host non-resident workers. • An accommodation facility should be designed to be suitable to a diversity of people, including women. • There is very little accommodation or rentals available in Jerilderie and Coleambally. • Lack of housing in the area impacts local farmers' ability to attract seasonal workers. • Concern regarding having accommodation available for tourists and seasonal pickers if all occupied by renewable energy project workers.
Community services and facilities	• Many residents in the local study area are "Jerilderie based", where they access most essential services in Jerilderie. • Telecommunications in the local area are unreliable, usually have to be at a residence to get mobile or internet coverage. • Concerns about the project workforce impacting access to medical services in the local area. • Local fire brigade is located in the local study area and is staffed by volunteers who live in the local community. • Concerns about presence of project infrastructure impeding emergency response, such as in the case of fire. • If the project attracted permanent residents and their families to the area, local schools would benefit from higher attendance rates.
Biodiversity	• Concerns about blade strike and impact on local birdlife.
Noise and vibration	• Concerns about vibrations emitted by the operation of wind turbines in relation to ear health and comfort. • Concerned about increase noise and traffic during construction.
Social cohesion	• Some landowners expressed that proposed REZ projects are "dividing the community" due to impacts and benefits being experienced unevenly across the local area. • Some landowners have discussed leaving the area after the announcement of REZ projects in the area.
Community benefit sharing suggestions	• Suggest providing energy to local residents to offset energy costs.
Mitigation measures	• Negotiate buffers between houses and project infrastructure.

ii First Nations stakeholders – summary

As specified in Table 6.4, two group discussions, one face-to-face interview, and one phone conversation were held with First Nations stakeholders, involving a total of nine participants. These participants involved RAPs, community members and a health professional.

Table 6.6 First Nations stakeholders SIA engagement outcomes

Theme/Issue	Notes
Project decision-making and stakeholder engagement	• Strong interest in being consulted and partnered with at various stages of project planning, construction and operation. • Important to provide culturally safe space for training and engaging with the Aboriginal community. • Building trust with non-Aboriginal people is still challenging for some individuals in the Aboriginal community.
Local characteristics and community values	• Concern about environmental impacts from the project, including flora and fauna, landscape changes. • Country is *"our safe space".* • Broadly speaking, the Aboriginal community are not compensated for the loss of land that gets developed on: – Being on Country provides benefits for mental health and physical health – *"We don't want to hand it* [Country] *over without a fight"* – The local Aboriginal community *"can't be bought"* [i.e. opportunities presented by the project don't outweigh the need to protect Country]. • There is a need to reconnect mob with culture: land, language, and community, noting the plethora of social challenges including impacts of colonisation, homelessness, and substance use. • Strong desire to cut the cycle of unemployment and substance use amongst the community.
Project employment, procurement, and training	• Important to train those in the local Aboriginal community in cultural heritage, as the knowledge holders in the area are getting older and are passing or less able to carry out the work. • Strong interest expressed in capacity building, project training and employment opportunities. • Important to have training and employment opportunities close to home. • Suggestions to partner with local training providers, including TAFE and local colleges, to provide training for construction roles as well as cultural heritage skills. • Barriers to employment and training include lack of transport, lack of engagement of school aged students, lack of engagement with girls and women, unstable housing, access to childcare, education costs, lack of opportunities close to home, coordinating various documentation (i.e. identification and certificates), and lack of ongoing/long-term opportunities, and substance use. • Stress importance of cultural awareness training for personnel involved in the project, and importance of cultural safety on-site. Sometimes construction sites are the first instance of people interacting with an Aboriginal person – there needs to be things in place to make sure this is not a negative experience for anyone. • Noted that Wiradjuri have a culture of matriarchy, yet women often are missing out on training and employment opportunities. Noted several male-based programs exist in the area to support training and employment, very few targeted at girls and women. • Feel like the project would benefit from having someone from the Aboriginal community employed across all stages of the project, for example from heritage survey work, construction phase (including managing incidental finds), to operational phase. • Training and employment benefits beyond the individual, it benefits their family and community, and acts to provide stability for the individual.
Business and livelihoods	• There are opportunities to involve Aboriginal owned businesses and individuals in the operation of a worker accommodation facility for the project.
Accommodation and housing	• There are issues of homelessness and housing insecurity amongst the Aboriginal community across Darlington Point, Griffith, and Narrandera. • Experience with other projects shows that there is a pattern of landlords increasing rental prices when fluctuations of workers need accommodation in town. This results in local people not being able to afford rentals and become homeless or rent elsewhere. There are very few rentals in the regional area – so can be very difficult to find a place nearby. • Social housing in the area has very long waiting lists. • Use of a worker accommodation facility is ideal to not add pressure on existing housing issues. • Couch-surfing is common in the area due to lack of services supporting those experiencing housing insecurity.

Table 6.6 First Nations stakeholders SIA engagement outcomes

Theme/Issue	Notes
Community services and facilities	• There is a lack of health and support services for Aboriginal people in the area. • Health and support services lack capacity to address social needs amongst the Aboriginal community, including for substance use, housing, and mental health.
Cultural heritage	• Strong interest in learning cultural heritage skills so knowledge can be carried on to next generation. • Importance of having local Aboriginal workers on-site to assist with incidental finds, and their management. • Strong value for embracing cultural heritage through connection with, and caring for, Country. • *"Coleambally is a word that is from derived our Wiradjuri language and means "fast bird" (Swift Parrot)".* • *"This area is a very spiritual place for my Wiradjuri people and as such has many special places, songlines and dreaming places that my people have cared for and continue to have connection too for over 80,000 + years".* • *"I also insist that if and when construction starts on this site, that at least 2 local RAP (Registered Aboriginal Parties) are employed to monitor the site for any "Unexpected Aboriginal Finds". One of these RAP should also be qualified to be able to identify and register any items found directly to the AHIMS site for protection".* • Cultural heritage knowledge supports connection with ancestors.
Biodiversity	• *"Whilst I was on country, I witnessed many Dinawan (Emu) Womboin (Kangaroo) Ngarung (Lizards) and Budyaan (Birds). The area also is home to Maliyan (Wedge Tail Eagle) and as such Maliyan has many extremely large nests in the area. The habitat for all these animals must be taken into consideration".*
Community benefit sharing suggestions	• Suggestions to support capacity building, training and employment: – paid incentives to attend training – scholarships and traineeships – especially for girls and women – use of local colleges and training facilities to minimise travel – carry out "ID days" to assist community to coordinate identification, certificates, licenses, confirmation of Aboriginality etc. – organise transportation to ensure attendance at training facilities – for example fund a bus – this would have legacy benefits beyond the project life – Support people in Aboriginal community to register a business (i.e. obtaining ABN, tax management). • Suggest that there could be a *"community alliance agreement"* or a *"partnership agreement"* – important to have commitments in writing – monthly or quarterly meetings to report back to the community on progress. • Other ideas for community benefit-sharing: – provide electricity discounts to people in the local Aboriginal community undergoing financial hardship – assist first homeowners – rent to buy – support/partner with drug and alcohol, housing and other support services to increase service provision/capacity – train local Aboriginal people to provide tourism services to promote culture locally.

iii Local Government – summary

As specified in Table 6.4, a face-to face interview was carried out with a representative from Murrumbidgee Council (MC), and a video interview with a representative from Edward River Council (ERC), totalling two participants from local government.

Table 6.7 Local government SIA engagement outcomes

Theme/Issue	Notes
Sentiment towards renewable energy projects	• Support the principle of renewable energy. • Frustration that there are off-take agreements in place with high energy consumers, and this will divert a lot of energy away from the local energy market, which is not conducive to lower energy costs locally.
Project decision-making and stakeholder engagement	• Important for Spark Renewables to engage with local council directly and frequently, to manage impacts and maximise benefits. • Local councils would benefit from renewable energy developers taking responsibility for providing council with information on proposed projects (including employment, energy security, coexistence with existing land use, etc) so they can answer questions from the community. • Suggest engaging the community widely as this will benefit the project in the future.
Land use	• Wind farms viewed as more ideal compared to solar in relation to land use impacts, i.e. wind farm heights do not constrict grazing. • There is room to improve education within the community about renewable energy infrastructure and technology, and the co-existence with agriculture.
Local characteristics and community values	• Murrumbidgee area is an agricultural based economy, characterised by broadacre farming and irrigation. • There are small sections of the Edward River community that are resistant to change in general, and this includes the introduction of REZ infrastructure to the area.
Access and traffic	• Concerns about construction vehicles on local roads and worsening conditions.
Project employment, procurement, and training	• Barriers to training locally include: slow internet speed, lack of suitable facilities, particularly Coleambally, Griffith TAFE highly under-resourced, under-utilised, and housing staff. • Other renewable energy projects have promised increased employment opportunities, but have not seen evidence of this. • Ideal to use as much labour as possible from local community. • Ideal to capacity build in the local community.
Accommodation and housing	• Large projects cannot rely on accommodation and housing in area, *"it simply isn't there"* [in reference to a lack of available housing and accommodation in towns close to the project to meet project need]. • Planned Coleambally housing subdivision is constrained by potential biodiversity impacts. • There are housing and accommodation shortages throughout Murrumbidgee LGA and Edward River LGA. • Rental prices are increasing in Jerilderie and Coleambally. • Demand for accommodation will bring both impacts and benefits to the local area: – landlords and accommodation providers will see increased revenue – reduced accommodation availability may impact tourism and agribusinesses (no availability for pickers). • There is a produce picker accommodation facility in Darlington Point that is now often occupied with renewable energy project workers, leaving no room for pickers. • Re-use of an existing, built for purpose accommodation facility is ideal.
Community services and facilities	• Murrumbidgee Council (MC) has experienced legacy issues with waste with other renewable energy projects. Waste depots in MC area do not have capacity to manage waste from project construction. • Concerns influx of workers may overload telecommunications services.

Table 6.7 Local government SIA engagement outcomes

Theme/Issue	Notes
Community benefit sharing suggestions	• There are uneven benefits and impacts felt across communities associated with renewable energy projects, where local communities tend to experience many negatives but gain very few benefits. • Frustration regarding the local area hosting energy generation infrastructure but do not benefit from energy security or decreased prices – keen to change this. • Community benefit funds from various entities are likely to have less of a positive impact compared to if they were pooled and able to be spent together. Suggest regulator or state government could manage these funds. • Ideas for community benefit sharing: – provide energy security and affordability to the local community – childcare centres in Darlington Point and Coleambally – medical centre in Jerilderie – to provide power to locations near farms so industry can afford to establish value adding facilities in the area – i.e., food processing plant – support “rent to buy” initiatives – an accommodation facility for non-local workers could be repurposed as a legacy housing facility after its use for project workers.
Mitigation measures	• There will be cumulative impacts experienced in the project area. • There should be a whole-of-industry approach to addressing and mitigating cumulative impacts.

iv Local community - summary

As specified in Table 6.4, seven members of the local community participated in an informal group discussion about the project, where suggestions and feedback were shared in relation to the Dinawan Energy Hub.

Table 6.8 Local community SIA engagement outcomes

Theme/Issue	Notes
Project decision-making and stakeholder engagement	• Coleambally residents are generally aware of and informed about proposed renewable energy projects in the region. • Strong value for engagement with First Nations community.
Community services and facilities	• Local sports teams in Coleambally will benefit from new people in the area to build up team members.
Community benefit sharing suggestions	• Community benefit sharing ideas: – fund art studio – which provides art programs to improve mental health for First Nations community members and those with disability – fund palliative care services.

v Business and service groups – summary

Various business and services stakeholders were engaged as part of SIA engagement, as specified in Table 6.4. This includes a group discussion with four representatives of Coleambally Irrigation Co-operative Limited (CICL), a face-to-face interview with a representative from Coleambally Chamber of Commerce, and attendance and discussion at a Yanco Creek and Tributaries Advisory Council (YACTAC) board meeting.

Table 6.9 Business and service SIA engagement outcomes

Theme/Issue	Notes
Sentiment towards renewable energy projects	• Experiences with other renewable energy developments have been mixed. • Pre-existing energy offtake agreements with large customers limits benefits of energy security and affordability for hosting communities.
Project decision-making and stakeholder engagement	• Hoping for a streamlined way to provide the same information to all the entities *"there is an expectation that we repeat ourselves".* • CICL would like to develop a good working relationship with Spark to help inform design through identifying constraints around their assets and water management. • Value for long-term investment in the community. • Importance of working closely with local councils to inform the project design and construction. • Importance of knowing who owns the infrastructure so an ongoing relationship can be built, and that way better manage any impacts throughout ongoing project phases.
Business and livelihoods	• Noted that there are labour shortages, and it is hard to get workers on farms, demand for labour on the project may exacerbate this.
Project employment, procurement and training	• Project training and employment opportunities will benefit many in the local community. • Opportunities to partner with existing local businesses, for example catering businesses to provide food for workers at an accommodation facility. • Suggestion to promote timelines for jobs, what skills needed etc.
Local characteristics and community values	• Jerilderie attracts more residents, compared to Coleambally.
Land use	• Coleambally Outfall Drain (a CICL asset) is the main supply point to the Yanco Creek System and runs through the project area. • There are some biosecurity issues relating to weeds, and cotton can have waterborne fungal and bacterial issues. • Delta Creek runs through southern portion of the project area – this flooded last year.
Access and traffic	• Overhead powerlines need to be high enough to allow clearance for use of plant and equipment (i.e. excavator) during usual CICL maintenance on the Coleambally Outfall Drain. • Mclennons Bore Road and Liddles Lane are in bad condition, 5 mm of rain is enough to damage road conditions along these roads. • Council and CICL are responsible for road infrastructure within the project area.
Safety, health and wellbeing	• One nearby renewable energy developer did not listen to advice from locals about needing a fire cart on site, there has now been several fires since operations commenced. • Need to ensure access and equipment ready for fires on site.
Community services and facilities	• Local sports teams would benefit from additional people in the area. • The area struggles to attract registered nurses, housing is one barrier. • Ambulance and police station in Coleambally are minimally staffed.
Biodiversity	• Concern about blade strike and impact to birdlife.

Table 6.9 Business and service SIA engagement outcomes

Theme/Issue	Notes
Social cohesion	• Coleambally community is generally welcoming of non-locals. • Concern about asymmetrical impact and benefits experienced by adjacent landholders compared to hosting landholders.
Community benefit sharing suggestions	• Suggestions for community benefits: – Local communities should benefit from hosting renewable energy infrastructure by being supplied more reliable and affordable energy. – Share information gathered for the project with council to assist their plans to build a lake. – Funding for aged care, specifically for palliative care.

vi Community/special interest groups – summary

As specified in Table 6.4, two representatives from community/special interest groups participated in a face-to-face interview, including a representative from Coleambally Club and a representative from Coleambally Lions. Table 6.10 provides a summary of community/special interest groups SIA engagement outcomes.

Table 6.10 Community/special interest groups SIA engagement outcomes

Theme/Issue	Notes
Sentiment towards renewable energy projects	• The project would benefit hosting landowners.
Project decision-making and stakeholder engagement	• Feels the Coleambally community are broadly aware of the project. • Suggest promoting project employment opportunities via having a public information session or having a shop front in town. Need to have ways of communicating with those without computer literacy.
Business and livelihoods	• The Coleambally Community are likely to benefit from extra activity in town, especially hospitality businesses.
Safety, health and wellbeing	• Acknowledge that fires are the biggest risk with renewable energy infrastructure: – Suggest Spark Renewables to be highly engaged with local fire brigade, noting many will live locally to the project area.
Accommodation and housing	• There is a “desperate shortage of accommodation for contractors”. • Housing shortages exist in Darlington Point, Coleambally, and Griffith.
Community services and facilities	• Other projects have pushed local fire brigade capacity. • If a fire breaks out on the western extent of the project area (Conargo area) there is less capacity to respond. • If project workers are accommodated nearby to Coleambally it would benefit local clubs/sports teams – boost participation and diversify population.

Table 6.10 Community/special interest groups SIA engagement outcomes

Theme/Issue	Notes
Community benefit sharing suggestions	• Community benefit sharing ideas: – resource fire brigade – staff and equipment (truck, shed) – provide nursing home funding in Coleambally – provide funding to staff a palliative care unit in Coleambally – currently state government cannot afford to staff – could collaborate and partner with the grants officer at MC to maximise community benefit sharing – fund mental health support programs/services for young adults with intellectual disability – subsidise energy for pumps on farms, many pumps are run on diesel because it is cheaper than electricity – Support Can Assist Leeton (cancer assistance network).

6.3.2 Summary of key findings

Key themes and findings emerging from all SIA engagement outcomes are summarised in Table 6.11.

Table 6.11 Summary of themes and key findings

Themes and key findings
Engagement and decision-making
• Being meaningfully engaged and involved in decision-making was a strong theme across all stakeholder types. • Stakeholders wanted to continue engagement with the proponent to optimise expected project benefits, develop appropriate mitigation measures, and to influence project design to avoid various expected impacts. • Broader engagement with other REZ entities is a time and energy burden across all stakeholder types. • Strong value for culturally safe engagement with First Nations stakeholders across all phases of the project. • A public information session would help promote project opportunities, including employment.
Cultural heritage
• Important to train those in the local Aboriginal community in cultural heritage so knowledge can continue to be passed down through generations. • Important to have an appropriate unexpected finds procedure, and ideally having a local Aboriginal cultural heritage knowledge holder (i.e. a RAP) on site to assist in identification and management. • First Nations stakeholders expressed a strong value for embracing cultural heritage through connection with, and caring for, Country.
Business and livelihoods
• There are opportunities to involve Aboriginal owned businesses and individuals in the operation of a worker accommodation facility for the project. • There are existing labour shortages which impact local agribusinesses, project demand for labour may exacerbate this. • Reduced accommodation availability for tourists and seasonal farm workers may reduce activity, and hence revenue, for tourism operators and local agribusinesses. • The Coleambally community are likely to benefit from extra activity in town, especially hospitality businesses.

Table 6.11 Summary of themes and key findings

Themes and key findings
Project employment, procurement, and training
• Hiring local workers where possible is ideal. • Training and employment opportunities on the project would benefit many in the Aboriginal community, and would benefit beyond the individual, it benefits their family and community, and acts to provide stability for the individual. • Suggestions to partner with local training providers, including TAFE and local colleges, to provide training for construction roles as well as Aboriginal cultural heritage skills. • Amongst the Aboriginal community there are a range of barriers to training and employment, especially for girls and women. These include transportation, stable housing, and access to childcare. • Cultural awareness training for personnel involved in the project is important. • Many suggestions were provided to support capacity building, training and employment amongst the Aboriginal community, including to provide paid scholarships and traineeships, holding "ID days" to organise documentation, and providing transportation.
Housing and accommodation
• Rental housing and short-term accommodation are in short supply in the Murrumbidgee LGA, as well as in Deniliquin and Griffith. • Concern that housing of non-local workers for the project may increase pressure on the existing housing issues. • Demand for accommodation will benefit landlords and accommodation facilities through increased revenue/income.
Services
• Health and support services lack capacity to address social needs amongst the Aboriginal community, including for substance use, housing, and mental health. • Health services, including GP and specialist services, are in short supply across the Murrumbidgee and Edward River LGAs, concern that presence of project workforce may place additional demand and exacerbate this. • Telecommunications in the local area are unreliable, concern that presence of project workforce may place additional demand and exacerbate this. • Waste depots in Murrumbidgee LGA do not have capacity to manage project construction waste. • Local sports clubs would benefit from new people in the area to build up team members. • Desire to engage with the local fire brigade in the management of fire risk within the project area or at surrounding properties, including impacts to air-controlled firefighting.
Traffic and access
• The condition of unsealed roads within the local area are poor and prone to flooding and flood damage. • Some stakeholders expressed concern that these road conditions would worsen with construction traffic. • Overhead powerlines need to be high enough to allow clearance for use of plant and equipment during usual maintenance on the Coleambally Outfall Drain.
Land use
• There is room to improve education within the community on how agriculture can co-exist with renewable energy infrastructure and technology. • Most stakeholder types felt wind farms were far less disruptive to agricultural use of land compared to solar farms.

Table 6.11 Summary of themes and key findings

Themes and key findings
Surroundings
• The local area is valued by residents for being quiet, private and remote, construction activities and traffic are expected to disrupt this. • Concerns about blade strike and impact on local birdlife • The local area is valued for wildlife, natural environment, and agricultural characteristics, this is expected to change with the presence of wind turbines. • Concern about environmental impacts from the project, including flora and fauna, landscape changes. • Risk of fire was a concern with many stakeholders.
Benefit sharing
• Optimising benefit sharing mechanisms is seen as an important way to offset the impacts expected to be experienced by those in the "hosting" community. • Pooling community benefit funds from various projects is seen to allow for more efficient use of funds. • There were many suggestions put forward for benefit sharing that relate to improving energy security and affordability for those in the local community, as well as the funding of key service gaps, including a childcare facility. • Some benefit sharing ideas sat outside the proponent's sphere of the influence, such as "rent-to-buy" initiatives.

7 Assessment of social impacts and benefits

This chapter discusses social impacts and benefits associated with project construction and operation and assesses the significance of potential changes to current baseline social conditions.

A risk-based framework (as outlined in Section 2.3 of the SIA Guideline Technical Supplement (DPE 2021b)) has been adopted for the assessment of social impacts. Findings from technical reports and stakeholder perceptions have been used to capture expert and local knowledge, and inform development of appropriate impact mitigation and enhancement strategies.

Assessment of social impacts is complex and as such requires the balancing of a range of factors and often competing interests. The impact assessment is reflective of this and has:

- assessed some aspects of the project as both negative and positive as they relate to different groups of people
- included negative impacts on local communities while documenting the benefits to the broader region
- considered impacts on vulnerable groups and provided management strategies which seek to ensure that any existing disadvantages are not exacerbated
- considered each community's access to critical resources, such as housing and health care.

Social impacts have been assessed on the maximum unmitigated effect (i.e. worst-case scenario) initially and then the residual significance is assessed on the basis that proposed mitigation and enhancement measures are effectively implemented. The assessment uses the terms unmitigated and mitigated when referring to negative impacts and un-enhanced or enhanced when referring to positive impacts.

The following data and information was drawn upon to identify impacts and benefits and assess their relative significance:

- data collected as part of the social baseline
- findings from community and stakeholder engagement activities
- findings from other EIS technical studies
- academic research
- relevant government and agency reports.

Application of the likelihood and magnitude framework as outlined in Section 3.1.2iv of this report, informs assessment of the level of significance of a social impact as being low, moderate, high, or very high. Identified social impacts and benefits are summarised in Table 7.1 below, as well as the relevant category as listed in the SIA Guideline.

Table 7.1 Impact themes

Social impact theme	ID	Impact on people	Timing[11]	SIA guideline impact category
Energy transition	T01	Positive influence on intergenerational equity	O	Way of life Health and wellbeing Decision-making systems
	T02	Improved project outcomes through participation in decision-making processes	PC C O	Decision-making systems Health and wellbeing
Employment, training, and business	EC01	Increased opportunities for employment and training	C O	Livelihoods
	EC02	Generation of income through procurement opportunities for local and regional businesses	C O	Livelihoods
	EC03	Generation of income through increased trade for retailers and hospitality businesses	C	Livelihoods Accessibility
	EC04	Increased competition for labour and services	C	Livelihoods Accessibility
	EC05	Land use impacts on agribusinesses.	O	Livelihoods Community Way of life
Housing and access to services	HS01	Reduced access to health services for residents due to increased demand	C	Accessibility Health and wellbeing
	HS02	Reduced capacity of local waste management facilities due to project demand	C O DC	Accessibility Surroundings
	HS03	Reduced availability of housing and accommodation	C	Accessibility
Local amenity	L01	Loss of amenity due to changes to the visual landscape	O	Surroundings Community
	L02	Increased noise from construction activities and traffic	C	Surroundings Health and wellbeing
	L03	Loss of amenity due to increased dust from construction activities and traffic	C	Surroundings Health and wellbeing
	L04	Ecological changes affecting cultural and community values	O	Surroundings Community

[11] PC = pre-construction; C = construction; O = operation, Dc = decommissioning

Table 7.1 Impact themes

Social impact theme	ID	Impact on people	Timing[11]	SIA guideline impact category
Cultural heritage	CH01	Increased opportunities for connection to Country	PC C O	Culture Community Decision-making systems
	CH02	Potential impacts to sites, items, or places of Aboriginal cultural significance.	C	Culture Community Decision-making systems
Community, safety, and wellbeing	CS01	Changes to local population dynamics due to the influx of workforces	C	Health and wellbeing Community Surroundings
	CS02	Perceived impact on safety due to generation of traffic	C	Surroundings Health and wellbeing Community
	CS03	Perceived increased fire safety risk from the project	O	Surroundings Health and wellbeing
	CSO4	Potential concerns related to operational noise and vibration impacting biodiversity and health and wellbeing	O	Surroundings Health and Wellbeing
	CSO5	Social cohesion and resilience arising from community benefit and investment	C O	Community

7.1 Project refinements

The findings of project scoping and EIS consultation (including SIA engagement) have informed refinements to the project description. Table 7.2 presents a summary of key project refinements during preparation of the EIS, which were informed by feedback from the local community. Matters considered during project refinement are discussed in further detail in Section 2.6.4 of the EIS.

Table 7.2 Summary of key project refinements

Project element	Refinement undertaken	Reason for refinement
Biodiversity	Significant refinements to the development footprint have been undertaken in response to the project's potential impacts on biodiversity (including threatened ecological communities and threatened species habitat).	Reduce potential impacts on biodiversity, which was raised as a concern by the broader community and nearby landowners during EIS and SIA engagement activities.
Non-resident workforce accommodation	The project was amended to include construction workforce accommodation facilities within the development footprint with capacity to support up to 450 workers.	In response to concerns raised by the community regarding the impact the project workforce would have on the availability of short-term accommodation and local housing, Spark Renewables amended the project to include an on-site accommodation facility for each construction stage, capable of hosting the project's non-local construction workforce.

Table 7.2 Summary of key project refinements

Project element	Refinement undertaken	Reason for refinement
Visual amenity	Reduce the visibility of project infrastructure by avoiding: • areas adjacent to Oolambeyan National Park, including an approximately 11 km setback to the nearest WTG • areas adjacent to Kidman Way, including a 3.3 km setback to the nearest WTG • a minimum 2 km setback between WTGs and non-associated residences.	In response to concerns raised by stakeholders on potential visual impacts, including nearby neighbours and Murrumbidgee Council.
Agricultural productivity	Sheep and cattle grazing is expected to continue within the development footprint during operations to mitigate potential impacts on agricultural productivity.	Some stakeholders, such as Murrumbidgee Council, nearby landholders, and local businesses queried the impact of the project on agricultural productivity within the development footprint, as well as on neighbouring properties.
Aboriginal cultural heritage	Avoidance of Aboriginal cultural heritage values have been a key aspect of the project refinement process, with the development corridor refined to avoid 15 sites. The project will adversely affect 17 Aboriginal sites	Reduce impacts on known Aboriginal heritage sites through avoidance of significant cultural areas and archaeologically significant sites within the development corridor and broader project area.

7.2 Energy transition

This section provides an assessment of project benefits relating to energy transition. This refers to the transition to low GHG emitting energy generation across NSW, and Australia more broadly, including wind and solar energy.

Benefits generated by the project include:

- positive influence on intergenerational equity
- improved project outcomes through participation in decision-making processes.

7.2.1 Intergenerational equity

Intergenerational equity relates to the idea of fairness and equal opportunity between generations. Intergenerational impacts refer to people's perceptions about their safety, the future of their community, and aspirations for their future and the future of their children (Queensland Government 2021).

Federal and NSW state initiatives to reach Net Zero by 2050 involve the decarbonisation of the energy market, including replacement of coal-fired energy generation. Achievement of these goals will require the roll-out of renewable energy generation infrastructure, as it produces fewer Greenhouse Gas emissions compared with coal-fired power generation and other common sources of energy.

The overall reduction in carbon emissions is a benefit to future generations by slowing the impacts of human activity induced climate change. Stakeholders interviewed for the SIA acknowledged the project will provide a cleaner way of producing electricity thereby potentially reducing damage to the environment.

Acknowledging the growing demand for electricity (AEMO 2020), the project is expected to have a positive impact on the growth of renewable energy generation capacity within NSW by providing generation capacity for 1,200 MW of clean energy. This contribution involves expanding renewable energy infrastructure to support state and federal initiatives to reduce GHG emissions whilst continuing to deliver a reliable energy system.

The unenhanced significance of the contribution to intergenerational equity is assessed as **medium**. The likelihood of the benefit occurring is assessed as **almost certain** and the magnitude of the benefit is assessed as **minor**.

There is no proposed enhancement to this benefit and therefore the residual significance remains **medium**.

A summary of the assessment is provided in Table 7.3.

Table 7.3 Positive influence on intergenerational equity

Social benefit	Matter	Affected parties	Duration	Extent	Unenhanced	Enhanced
Energy transition	Positive influence on intergenerational equity	The broader community	Life of project	Future generations	Medium (A2) **Benefit**	Medium (A2) **Benefit**

7.2.2 Improved project outcomes through participation in decision-making processes

Stakeholder participation in decision-making systems refers to the right of those who are affected by a decision to be involved in the decision-making process, and that decision-making processes actively identify and seek input from affected stakeholders (IAP2 2015).

Throughout SIA engagement, participation in decision-making in the project, and the roll out of renewable energy infrastructure across the South West REZ more broadly, emerged as a common theme amongst all stakeholder groups. Many stakeholders viewed participation in decision-making systems as a way to contribute to identifying key constraints at the project site, as well as identifying and managing local impacts. Many stakeholders, particularly Murrumbidgee and Edward River Councils and CICL, noted that they wished to be further consulted as the project progresses into operation and decommissioning.

Other sentiments that emerged during SIA engagement related to promoting and consulting on project opportunities and benefits, such as employment and businesses opportunities to achieve meaningful, and long-lasting economic outcomes for the community. This was a common theme as project workforce skills are viewed as transferable across other renewable projects in the South West REZ. Project employment and training opportunities are discussed further in Section 7.3 below.

During SIA consultation, some adjacent and nearby landowners expressed frustration regarding the time and energy burden associated with being consulted by multiple renewable energy proponents. However, it was acknowledged that Spark Renewables had been professional and responsive to matters raised, including adapting project design elements (see Section 6.3.1).

Spark Renewables has been consulting with stakeholders and building a local presence in the region since 2021. A range of engagement methods have been employed to consult with adjacent and nearby landholders, Murrumbidgee and Edward River Councils, First Nations stakeholders, community groups, and local service providers, as described in Chapter 5 of the EIS.

Engagement activities have been carried out to advise stakeholders how they can be involved with the project and the various platforms and opportunities to do so, as required by the *Undertaking Engagement Guidelines for State Significant Projects* (DPE 2022). EIS engagement activities to date include:

- Establishment of a project website – promoting regular project updates, key project documents, key engagement events, and employment opportunities on the project.
- Procurement and employment register – to record details of interested individual and businesses in project opportunities.

- Project email address and community info line – for community and stakeholders queries.
- Face-to-face meetings with key stakeholders, including neighbouring landowners, Murrumbidgee and Edward River Councils, and the First Nations community.
- Community information sessions – four rounds held since 2021.
- Community feedback survey – established during the scoping phase and promoted online and in person.
- Project newsletters – six project newsletters have been provided to keep key stakeholders, those on the project mailing list and the local community updated about the project and to promote upcoming consultation events.
- Media advertising to promote project related community events.

Information gathered from engagement activities has informed project planning, decision-making and project refinements such as the addition of an accommodation facility to relieve negative impacts to the local housing and short-term accommodation market. A summary of project refinements is provided in Table 7.2.

Continued meaningful engagement with stakeholders generates improved project support, fewer stakeholder complaints/grievances, and improved trust in the proper management/mitigation of project impacts during construction and operation.

Engagement also demonstrates a commitment to the community through identifying partnerships and benefit sharing opportunities. This has the potential to be empowering for some stakeholders, especially those experiencing disadvantage (i.e. long-term unemployed), or for those who may experience direct project impacts over a protracted period (i.e. nearby landholders).

The intensive and responsive engagement process utilised in determining community perceptions and sentiments, and the adaptive project response to feedback (per section 7.1) has reduced the chance of risks identified at the scoping stage of this project, including risks that "*Proposed development projects can be grounds for contestation within local communities, which can negatively impact on community cohesion*" (EMM 2022b).

The unenhanced significance of project outcomes through participation in decision-making processes is assessed as **medium**. The likelihood of the benefit occurring is assessed as being **likely** and the magnitude of the impact is assessed as being **minor**.

Spark Renewables will continue to engage stakeholders throughout EIS exhibition and subsequent phases of the assessment, including ongoing negotiations and consultation with Murrumbidgee and Edward River Councils, neighbouring landowners, First Nations stakeholders, local businesses, and the broader community.

The development and implementation of a Social Impact Management Plan (SIMP) prior to construction will allow an adaptive and proportionate response to social impacts. The SIMP will aim to:

- describe desired outcomes in social terms
- outline post-approval engagement activities, including timing and purpose
- describe a feedback procedure that will allow feedback and timely response throughout construction and operation
- define targets to monitor performance over time, identify monitoring responsibilities, and methods to share outcomes.

The SIMP will include methods for engaging various stakeholders on their key interests to manage impacts, enhance benefits, and provide suitable mechanisms for project feedback. Key stakeholders include Murrumbidgee and Edward River Councils, landowners, broader community, First Nations stakeholders, services and utilities, local businesses, and local workforces.

The feedback procedure for the construction and operational phases (including a dedicated project phone number and project email), will provide opportunity for stakeholders to raise complaints and grievances. The complaints and grievances mechanism will facilitate the timely response to stakeholder complaints and grievances to improve trust in the management of project impacts and enable monitoring/reporting of grievances and their response.

Spark Renewables have worked with Murrumbidgee Council and Edward River Council and the local community to develop a community benefit sharing program that will address local needs and ensure the benefits of the project are shared. Details of the benefit sharing program are reported in Chapter 5 of the EIS.

During SIA engagement, Murrumbidgee and Edward River Councils suggested that renewable energy developers provide more information (including employment, energy security, coexistence with existing land use, etc.) on proposed projects so they can answer questions from the community. The project will continue to provide Murrumbidgee and Edward River Councils project updates and project briefings as the project progresses.

There is also value in the project implementing an adaptive approach to engagement, as community sentiment may change and evolve over time, in response to this project and other projects in the region. Thus, it is proposed that the SIMP be reviewed annually during the construction period, and every 5 years during project operation to affirm it remains consistent with community needs. This will mitigate risks associated with stress and contention over the project, and community cohesion.

The enhanced significance of improved project outcomes through participation in decision-making processes is assessed as **high.** The likelihood of the benefit occurring is assessed as being **likely** and the magnitude of the benefit is assessed as being **moderate**.

A summary of the assessment is provided in Table 7.4.

Table 7.4 Improved project outcomes through participation in decision-making processes

Social impact theme	Impact on people	Affected parties	Project timing	Extent	Unenhanced	Enhanced
Energy transition	Improved project outcomes through participation in decision-making processes	Nearby and adjacent landholders Local councils Businesses The broader community First Nations stakeholders	Pre-construction Construction Operation Decommissioning	Local study area Regional study area Nearby regional communities	Medium (B2) **Benefit**	High (B3) **Benefit**

7.3 Employment, training, and business

This section provides an assessment of project benefits and impacts related to employment, training, and business. The discussion provides insights into employment and training opportunities and their potential to build the capacity of human capital in the region. This section also discusses commercial impacts on regional businesses relating to workforce and service demands, as well as benefits to retailers and hospitality businesses.

Lastly, acknowledging land use changes resulting from the project, this section considers changes to agricultural operations at the project site and surrounding properties, and how they may impact productivity.

Project related benefits and impacts relating to employment, training, and business include:

- increased opportunities for employment and training
- generation of income through procurement opportunities for local and regional businesses
- generation of income through increased trade for retailers and hospitality businesses
- increased competition for labour and services
- land use impacts to agribusinesses.

7.3.1 Increased opportunities for employment and training

The project will employ local people which will benefit the local economy. Local employment is particularly important as it could provide employment for vulnerable groups including youth, women, and those in the First Nations community. Studies show that ongoing employment creates a multitude of benefits, including continued provision of income for local workers, recirculation of a greater share per dollar into the local economy due to local supply chains and investment in local employees (Civic Economics 2012), as well as improved community well-being and resilience (Adams 2018).

Considering the size and characteristics of the regional labour force, it is assumed that 25% of the project construction workforce could be sourced from the regional study area and key regional communities. Based on an average construction workforce of 328 FTE, this equates to approximately 82 workers per year, across a 5 year construction program.

Occupations relevant to the project include technicians and trades workers, machinery operators and drivers, and labourers.

The labour force of the nearby regional communities such as Wagga Wagga, Griffith and Deniliquin comprise relatively high proportions of applicable skills such as labourers, technician and trades workers and machinery operators. Sourcing workers locally builds the skills and experience of the regional labour force which generates lasting economic and social benefits.

Economic diversification allows for a more stable economy that can absorb shocks and changes to the market (Climateworks Australia 2020). The project will contribute to regional economic diversity by providing benefits including construction employment, purchase of goods and materials and generation of indirect jobs. While the project does utilise grazing land, which presents a challenge for regional agriculture addressed in Section 7.3.5, the projects employment and training benefits enhance regional employment diversity and provide alternative sources of income within communities that can assist in sustaining them during times of stress, such as droughts.

However, availability of labour is constrained with unemployment rates in Murrumbidgee LGA being significantly lower than the NSW average. Unemployment rates in Edward River LGA, however, are similar to the NSW average. While unemployment across the Murrumbidgee LGA is lower than the NSW average, there is a small cohort of unemployed persons. It was reported by stakeholders during SIA engagement that, for this cohort, barriers to employment were linked to a lack of childcare services, intergenerational patterns, and a lack of skills attainment (see Section 6.3.1). A lack of designated girl's and women's training and skills programs in the area was reported by First Nations stakeholders as a barrier to entering employment (see Table 6.6). Across nearby regional communities, Griffith and Wagga Wagga recorded relatively low unemployment rates, however rates of Aboriginal and/or Torres Strait Islander unemployment was high compared to NSW. This, as well as very low SEIFA scores in Griffith, indicates the presence of potentially vulnerable groups who would benefit from increased employment opportunities.

A desire for local employment opportunities was reported by stakeholder engaged as part of the SIA. Sentiments regarding job opportunities included:

- local Aboriginal businesses and individual skills are not currently geared towards those needed for renewable energy projects
- the accommodation facility would provide good employment opportunities, including for the local Aboriginal community
- ideal to use as much labour as possible from the local community
- employment opportunities provide benefits beyond the individual, it benefits their family and community.

More specifically, interview participants highlighted vulnerable groups that would benefit most from project employment opportunities, particularly through capacity building and training. This included sentiments such as:

- women and girls tend to drop off from education and training earlier than boys and men
- women can struggle to remain in employment if they do not have access to childcare
- *"I would also ask that at least 10% of the needed workforce be from the local Wiradjuri/Aboriginal community"*
- homelessness and housing insecurity are barriers for many in the community to train and gain employment.

While project employment opportunities were generally regarded as positive throughout SIA engagement, it was considered dependent on meaningful and/or long-term benefits. Stakeholders regarded ongoing work or building transferable skills to be key to meaningful employment. For many First Nations stakeholders, building up cultural heritage knowledge within the local area was an important aspect of meaningful employment. Sentiment on meaningful employment opportunities reported during SIA engagement included:

- It is important to train people in Aboriginal cultural heritage to carry on the knowledge, as the knowledge holders in the area are getting older.
- Knowledge holders in the area are willing to pass on cultural heritage knowledge.
- Cultural heritage knowledge can support good mental health within the community.
- Opportunities for employment on site are ideal for those in the Aboriginal community so they can be on Country.

The unenhanced significance of increased opportunities for employment and training is assessed as **medium**. The likelihood of the benefit occurring is **possible** and the magnitude of the benefit is assessed as being **minor**.

During SIA engagement a number of suggestions were provided to enhance employment and training opportunities, including:

- when engaging with local Aboriginal community about employment opportunities, it is important to choose a culturally safe venue
- partner with local colleges and training centres to increase local job readiness
- organise transportation to ensure attendance at training facilities.

The use of culturally appropriate platforms to share and gather interest in project opportunities amongst the First Nations community would enhance the uptake of employment. This may be further enhanced through the provision of transportation options to incentivise training attendance, such as a van or small bus from key locations to training centres.

Additionally, Spark Renewables will seek to identify shared value opportunities with secondary and tertiary education institutions in the regional area, and employment and training agencies to support participation of locally based vulnerable groups, First Nations communities, and young people in project employment opportunities.

Development of an Aboriginal participation plan in consultation with First Nations stakeholders would optimise local capacity and aspirations through targeted participation initiatives within the regional area.

Such enhancement strategies could further increase the number of women, youth, and First Nations people from the regional area gaining employment for a temporary period. This would improve the wellbeing of those employed by providing financial and job security.

The enhanced significance of increased opportunities for employment and training is assessed as **high**. The likelihood of the benefit occurring is assessed as being **likely** and the magnitude of the benefit is assessed as being **moderate**.

A summary of the assessment is provided in Table 7.5.

Table 7.5 Increased opportunities for employment and training

Social impact	Matter	Affected parties	Duration	Extent	Unenhanced	Enhanced
Employment, training, and commerce	Increased opportunities for employment and training	Members of the regional labour force and their families Local businesses Vulnerable groups	Construction	Regional area Nearby regional communities	Medium (C2) **Benefit**	High (B3) **Benefit**

7.3.2 Generation of income for local and regional supply chain

Construction and operation of the project will require various goods and services, creating procurement opportunities that may benefit local and regional businesses. Procurement opportunities will include goods and services such as transportation, vegetation management, and provision of construction skills and materials.

The worker accommodation facility would be operated by a staff of about 5–10 including administration, cleaning, food preparation, maintenance and security staff. Where possible, local businesses will be engaged to supply goods and services to the facility, typically consisting of laundry, cleaning and catering.

Procurement of goods and services within the region injects wealth into local economies which can generate lasting benefits for business owners and residents.

As potentially one of the earlier renewable energy projects in the South West REZ, the project may provide local businesses an opportunity to invest in relevant capabilities and services to support the renewable energy sector. As reported in the Economic Assessment (Gillespie Economics 2024) completed as part of the EIS, the average annual construction impacts of the project on the NSW economy for the peak 12-months of construction are estimated to be up to:

- $351 M in annual direct and indirect output

- $148 M in annual direct and indirect value added
- $97 M in annual direct and indirect household income (Gillespie Economics 2024).

The Economic Assessment also estimates that broader economic stimulus would be generated in the region through a total of 486 direct and indirect full time equivalent (FTE) jobs through project activity at the construction stage (annually, at the peak of construction), and about 87 indirect and direct FTE jobs annually during operation. This economic activity would be a benefit to small and medium sized businesses across the regional study area, through increased trade and job creation.

The unenhanced significance of local procurement opportunities is assessed as **medium**. The likelihood of the benefit occurring is assessed as being **likely** and the magnitude of the impact **minor**.

Spark Renewables will prepare an Industry Participation Plan (IPP) prior to commencement of project procurement. The IPP will describe:

- opportunities to supply goods and services, local procurement commitments, local supply chain investment and innovation commitments and supporting strategies and actions
- employment and workforce development commitments and supporting strategies and actions
- First Nations participation
- commitments towards sustainable procurement throughout the supply chain.

Spark Renewables will develop an Aboriginal participation plan to optimise local capacity and aspirations through targeted participation initiatives within the regional area. The NSW First Nations Guidelines require energy infrastructure proponents to consult and negotiate with First Nations communities about opportunities for increasing employment and income (Office of Energy and Climate Change 2022). The Aboriginal participation plan will include one, or a combination of, the following:

- targets for the contract value to be subcontracted to Aboriginal-owned businesses
- targets for the contract's Australian-based workforce (FTE) that directly contributes to the contract to be Aboriginal or Torres Strait Islander peoples
- targets for the contract value to be applied to the cost of education, training or capacity building for Aboriginal staff or businesses directly contributing to the contract.

Spark Renewables is committed to ensuring that local businesses have the opportunity to be engaged to supply goods and services to the project provided reliability, quality and financial competitiveness requirements are met. Local businesses are likely to benefit from sub-contracting opportunities during construction and operations (i.e. fencing installation and maintenance, vegetation management and pest control), as well as indirect economic benefits for retail and services and local tradespeople (i.e. electricians and plumbers). This will also have a multiplier effect on economic activity as local businesses contracting or servicing the demand generated by the project will themselves require secondary and support services.

As the development progresses and the engineering, procurement, and construction contractor(s) are selected, Spark Renewables will hold information/introduction sessions or distribute engagement materials and updates to local businesses and residents to provide further details on employment and contracting opportunities.

The enhanced significance of local procurement opportunities is assessed as **high**. The likelihood of the impact occurring is assessed as being **likely** and the magnitude of the impact is assessed as being **moderate**.

A summary of the assessment is presented in Table 7.6.

Table 7.6 Generation of income through procurement opportunities for local and regional businesses

Social impact	Matter	Affected parties	Duration	Extent	Unenhanced	Enhanced
Local employment and business	Generation of income through procurement opportunities for local and regional businesses	Local and regional businesses	Construction	Local and regional area	Medium (C2) **Benefit**	High (B3) **Benefit**

7.3.3 Generation of income through increased trade for retailers and hospitality businesses

As outlined above, the construction workforce required for the project peaks at approximately 600, with an average of 328 workers across the 60-month construction phase. It is estimated that 75% of these workers will be sourced from outside the region. Non-resident workers will require goods and support services, which will be sought from nearby regional communities such as Coleambally and Jerilderie.

Non-resident workers may increase patronage at local businesses, particularly after shifts and on days off. This would provide increased revenue for some businesses in the local and regional area, particularly retail and hospitality businesses located in Coleambally and Jerilderie. It is also likely to lead to an increase in revenue for places of entertainment, recreation, and leisure, as many workers will be staying for protracted periods and are expected to access services on their days off. Stakeholders engaged as part of the SIA reported that such increased patronage and the associated injection of wealth into local and regional economies was a key project benefit, with sentiments including the following:

- The Coleambally community are likely to benefit from extra activity in town, especially hospitality businesses.
- Local food and accommodation businesses will experience a boost in sales.

The unenhanced significance of increased trade for retailers and hospitality businesses is assessed as **medium**. The likelihood of the benefit occurring is **possible** and the magnitude of the benefit is **minor**.

The project will continue to engage with local businesses to advise of construction periods and the potential increase in trade or patronage. This provides businesses with an opportunity to forward plan and maximise accrued benefits of increased demand and associated revenue.

The project may further enhance benefits to local businesses by encouraging the project workforce, particularly during the construction phase, to support and contribute to the local and regional community through local spending.

The enhanced significance of increased trade for retailers and hospitality businesses is assessed as **medium**. The likelihood of the benefit occurring is assessed as being **likely** and the magnitude of the benefit **minor**. A summary of the assessment is provided in Table 7.7.

Table 7.7 Generation of income through increased trade for retailers and hospitality businesses

Social impact	Matter	Affected parties	Duration	Extent	Unenhanced	Enhanced
Employment, training, and business	Generation of income through increased trade for retailers and hospitality businesses	Local and regional businesses	Construction Operation	Local and regional area Nearby regional communities	Medium (C2) **Benefit**	Medium (B2) **Benefit**

7.3.4 Increased competition for labour and services

Sourcing construction workers from the regional labour market has the potential to increase competition for workers, which would otherwise be available for businesses including local agribusinesses. While employment and business opportunities generated by the project were broadly considered by stakeholders engaged as part of the SIA to be a positive project outcome, it was also noted that there is an existing worker shortage in the Murrumbidgee LGA, which is impacting local agribusinesses (Section 6.3). Murrumbidgee LGA and surrounds utilises large numbers of seasonal workers, generally related to horticulture harvest/picking seasons (Murrumbidgee Council 2022b). Reported stakeholder sentiment included the following:

- There are labour shortages in the area.
- It is hard to get workers on farms, demand for labour on the project may exacerbate this.
- Housing is an issue, and as such people struggle to get workers in the area.

Without mitigation and management, the project's demand for workers and goods and services are expected to magnify competition in the regional market. Higher competition, while beneficial to workers and some supply chain businesses, may price-out smaller businesses also seeking these resources. This may impact the commercial viability of such businesses or reduce profitability. Smaller businesses would be disproportionately affected by economic disruptions, as they are more vulnerable to business failure, and can experience permanent changes such as business shut-down (Black, Lane and Nunn 2021).

The unmitigated significance of increased competition for workers and supply chain services is assessed as **medium**. The likelihood of the impact occurring is assessed as **possible** and the magnitude of the impact is **moderate**.

Impacts associated with increased competition for labour and services may be mitigated through the clear communication from Spark Renewables on the types of goods, services, and labour that will be sought by the project, when they will be required, and guidance on how such opportunities may be accessed by local businesses. Early identification of opportunities allows local businesses and subcontractors the time needed to plan for how they may grow to meet increased demand and maintain existing customers. If potential suppliers are aware of project needs, they can assess their options for managing their existing business.

The mitigated significance of increased competition for workers and supply chain services is assessed as **medium**. The likelihood of the impact occurring is assessed as being **possible** and the magnitude of the impact is assessed as being **minor**.

A summary of the assessment is provided in Table 7.8.

Table 7.8 Increased competition for labour and services

Social impact theme	Impact on people	Affected parties	Project timing	Extent	Unmitigated	Mitigated
Employment, training, and business	Increased competition for labour and services	Potential local labour force and their families Local businesses	Construction	Local and regional area	Medium (C3) **Impact**	Medium (C2) **Impact**

7.3.5 Land use impacts on agribusinesses

i Changes to adjacent agribusiness properties

During engagement, concerns were raised by some stakeholders, including nearby landholders, CICL, and Murrumbidgee Council regarding potential impacts on agricultural productivity on neighbouring properties. CICL, who own and manage irrigation infrastructure throughout the local study area, noted that there are some biosecurity issues in the area, which relate to weeds and waterborne fungal and bacterial issues (see Table 6.9).

As determined by the Land and Rehabilitation Assessment (LRA) for the project, potential impacts to adjacent lands could include increased biosecurity issues such as weeds and pests, as well as off-site impacts such as from erosion and sedimentation. Project impacts are anticipated to be limited primarily to the development footprint with minimal impact to adjacent lands (EMM 2024e). With no planned disturbance to areas outside of the development footprint, impacts to soil quality or land and soil capability (LSC) on adjacent lands are not anticipated.

ii Changes to land use within the project area

Agriculture has a long history in the regional study area and is a key feature of the local study area. Land within the project area is on predominantly private land zoned RU1 Primary Production with the exception of land within the Kidman Way road reserve. Within the project area (39,061 ha), approximately 717.2 ha is unavailable for agriculture. Of the remaining land, approximately 35,718 ha is utilised for grazing livestock and 2,541 ha is used for cropping (EMM 2024e).

The land within the development footprint will be temporarily unavailable for the current land use (i.e. predominantly sheep and cattle grazing with some cropping) during construction, removing up to $537,511 in annual agricultural productivity based on estimates on livestock and cropping land use and LGA productivity information.

Conservatively, it is assumed that the operation of the project will impact the same area of agricultural land that is impacted during construction (i.e. the development footprint). This is considered conservative as a significant portion of the project's development footprint is expected to become available for grazing again at the completion of construction. Assuming the removal of the development footprint from agricultural production, foregone agriculture local revenue during the operation of the project would be up to $537,511 per annum; however, lease arrangements with project landholders will provide an alternate source of income.

The development corridor and development footprint are proposed across two large landholdings. These landholdings have existing agricultural enterprises within them but due to the selective placement of the WTGs and other project infrastructure, it is unlikely that the project will result in any segmentation of the existing land uses. The existing agricultural land use will continue on land adjacent to the development footprint during construction and operations (EMM 2024e).

iii Social impact assessment of land use impacts on agribusinesses

The unmitigated significance of land use impacts on agribusinesses is assessed as **medium.** The likelihood of the impact occurring is assessed as being **possible** and the magnitude of the impact is **minor**.

The LRA, proposes a number of mitigation and management measure to support retention of as much existing agricultural land use as possible, to this end impacts to agricultural productivity during operations will be mitigated by the proposed continued use of the land for sheep and cattle enterprises (EMM 2024e). The Construction Environmental Management Plan (CEMP) will include weed and other biosecurity controls, and erosion prevention.

The LRA also notes that no agricultural landholdings will be fragmented as a result of the project, minimising risk of loss of land efficiency, productivity and sustainable management.

The mitigated significance of land use impacts on agribusinesses is assessed as **low**. The likelihood of the impact occurring is assessed as being **unlikely** and the magnitude of the impact is assessed as **minor**.

A summary of the assessment is presented in Table 7.9.

Table 7.9 Land use impacts on agribusinesses

Social impact theme	Impact on people	Affected parties	Project timing	Extent	Unmitigated	Mitigated
Employment, training, and commerce	Land use impacts on agribusinesses	Host landowner Neighbouring landowners	Operation	Project area Neighbouring land	Medium (C2) **Impact**	Low (D2) **Impact**

7.4 Access to services, housing, and accommodation

This section provides an assessment of project impacts on access to health and waste management services along with housing and short-term accommodation. This topic is discussed in relation to changed access for local residents due to the presence of the non-resident workforce over the construction period.

The following impacts are assessed below:

- reduced access to health services for residents due to increased demand
- reduced capacity of local waste management facilities
- reduced availability of housing and accommodation.

It is not expected the project will negatively affect capacity of other services in the region more broadly, as they are either unlikely to be affected to the project or have more capacity to accommodate additional demand. Effects of the project on the traffic network have been addressed in Section 7.7.2.

7.4.1 Reduced access to health services for residents due to increased demand

Construction workers temporarily residing in the project's worker accommodation facility would increase demand for some community services and facilities, particularly in the nearest towns of Coleambally and Jerilderie. As a result, residents may experience reduced access to and availability of key services such as health services.

As outlined in Section 5.5.1 health services are constrained in Coleambally and Jerilderie, as well as across the broader regional study area. Based on Stage 1 mapping, of the two hospitals in the regional study area, the closest is a 39-minute drive from the project, in Jerilderie. There are six GP services in the regional study area with standard GP services. The closest GP service to the project is located about a 30-minute drive away, in Coleambally. As outlined in Section 5.5.1, Wagga Wagga LGA has a higher rate of health professionals compared to the NSW average. Murrumbidgee, Edward River and Griffith LGAs all have rates much lower than the NSW average.

Stakeholders engaged as part of the SIA identified that access to health services was a key issue across the regional study area, including GPs, allied health and Aboriginal health services, and that many residents travel to Wagga Wagga for health services (see Section 6.3). During SIA engagement, access to health services was identified as a vulnerability by local stakeholders with sentiments including:

- Health and support services lack capacity to address social needs amongst the Aboriginal community, including for substance use, housing, and mental health.
- The area struggles to attract registered nurses.
- There are very few medical services in the area – Griffith has some specialist health services, but the doctors are fly-in, fly-out.
- The GP in Coleambally is always booked out.

Based on a workforce comprised of 75% non-resident workers, an average of 316 workers, and 450 at the peak, will temporarily reside at the project's on-site accommodation facility over the construction period. In particular, the peak period may generate substantial additional demand on the limited services available in nearby communities.

The unmitigated significance of reduced access to health services for residents is assessed as **medium.** The likelihood of the impact occurring is **possible,** and the magnitude of the impact is **moderate**.

It is proposed that Spark Renewables engages with Murrumbidgee and Edward River Councils to identify potential service limitations and implement measures such as provision of an on-site medic, to reduce demand on local health services. The provision of mental health services for the construction workforce should also be considered.

It is also proposed that Spark Renewables engage in regular communication with health care providers (hospital services, health and wellbeing services, and GPs) across the regional area to ensure they remain informed regarding the project schedule, workforce arrangements and workforce size.

Noting the significant disparity between health worker ratios in Wagga Wagga LGA, compared to Murrumbidgee, Edward River and Griffith LGAs, where safe to do so, non-local workers will be encouraged to travel to regional health centres with higher capacity (i.e. Wagga Wagga) on their days off, to relieve impacts on services closest to the site. Use of telehealth services should also be encouraged where safe and appropriate.

This would also reduce travel times to access health services and may enable workers to access their preferred or usual health practitioner.

The mitigated significance of reduced access to health services for residents is assessed as **medium**. The likelihood of the impact occurring is **unlikely,** and the magnitude of the impact is **moderate**. A summary of the assessment is provided in Table 7.10.

Table 7.10 Reduced access to health services for residents due to increased demand

Social impact	Matter	Affected parties	Duration	Extent	Unmitigated	Mitigated
Housing and access to services	Reduced access to health services for residents	Local residents Residents of key townships	Construction	Local area Nearby regional communities Regional area	Medium (C3) **Impact**	Medium (C2) **Impact**

7.4.1 Reduced capacity of local waste management facilities due to project demand

It is anticipated that the volumes of waste generated by the project may exceed the capacity of waste management facilities within the Murrumbidgee LGA and Edward River LGA (see Section 6.14 of the EIS) (EMM 2024a). Most waste associated with the project is expected to be generated in the construction and decommissioning phases and would require either recycling or disposal at an appropriate facility.

Unexpected fluctuations in demand for waste services may reduce availability for other waste service users, including residents and businesses. This can lead to the mismanagement of waste, which includes illegal dumping and littering (NSW EPA 2023).

During SIA engagement, Murrumbidgee Council noted that they have experienced challenges managing waste generated from the construction of other projects in the area which has left them with “legacy issues”. Murrumbidgee Council stated local waste facilities in Murrumbidgee LGA do not have the capacity to manage waste volumes associated with the construction of such infrastructure (Section 6.3).

The unmitigated significance of reduced capacity of local waste services is assessed as **medium**. The likelihood of the impact occurring is **possible,** and the magnitude of the impact is **minor**.

As outlined in Section 6.14 of the EIS, considering the expected volume of waste would exceed the capacity of waste facilities in the Murrumbidgee LGA and Edward River LGA, wastes will need to be managed by a commercial agreement between a contractor(s) appointed by Spark Renewables for the construction of the project, a licensed waste management company and the relevant local councils.

Further, a waste management plan (WMP) will be prepared in consultation with Murrumbidgee Council, Edward River Council and DPHI to further detail waste management strategies. A key objective of the WMP will be to ensure that any use of local waste management facilities does not disadvantage local businesses and, more generally, the local community, by exhausting available capacity at these facilities.

The mitigated significance of reduced capacity of local waste services is assessed as **low**. The likelihood of the impact occurring is **unlikely,** and the magnitude of the impact is **minimal**. A summary of the assessment is provided in Table 7.10.

Table 7.11 Increased demand on local waste management facilities

Social impact	Matter	Affected parties	Duration	Extent	Unmitigated	Mitigated
Housing and access to services	Reduced capacity of local waste management facilities due to project demand	Residents Councils	Construction	Regional area	Medium (C2) **Impact**	Low (C1) **Impact**

7.4.2 Reduced availability of housing and accommodation

Rental housing and short-term accommodation serve the needs of local residents along with seasonal workers and tourists. It also is relied upon by those needing to access health and other services and as emergency accommodation in times of high need and provides an important source of accommodation for vulnerable members of the community. The availability of rental housing and short-term accommodation for community and visitor use could be impacted by the accommodation requirements associated with the project construction workforce.

As discussed in Section 7.3.1, the peak construction of the project will require up to approximately 600 workers with an average of approximately 328 workers. Due to the constrained availability of labour in the local and regional area, it is estimated that around 25 % (up to approximately 150) workers will be able to be sourced within a daily safe commute distance of the project. The remainder will be sourced from outside of the region and will therefore require suitable accommodation. The project includes an on-site worker accommodation facility for each construction stage. Each facility will accommodate 450 workers, which is equivalent to approximately 75% of the peak workforce (based on the assumption that 25% of workers will be locally based and therefore will not require on-site accommodation (EMM 2024a). The inclusion of on-site accommodation minimises the potential for non-local project workers impacting the availability of rental housing and short-term accommodation; however, it is likely there will still be some personnel associated with the project who will choose to stay in nearby towns, which may have some effect on the availability for seasonal workers and other visitors.

The Murrumbidgee LGA and surrounds hosts large numbers of seasonal workers, who utilise short stay accommodation in the region during peak periods of agricultural activity, generally related to horticulture harvest/picking seasons (Murrumbidgee Council 2022b). As established in the LRA, there is a broad mix of agricultural commodities in the region, where crops make up the majority of local agricultural value, including broadacre cropping, hay, silage and horticultural (fruit and nuts, grapes, vegetables and nurseries, cut flowers or cultivated turf) produce (EMM 2024e). This indicates that demand for short-term accommodation for seasonal workers would occur most months of the year.

During SIA engagement, stakeholders reported that there are very few accommodation facilities in the local and regional study areas (see Section 6.3). From a web-based search it was estimated that there are a total of 74 accommodation facilities in the regional study area. These estimates show very few accommodation facilities (22 total) within a 60-minute drive of the project (see Section 5.4.5). Sentiments and comments arising from SIA engagement include the following:

- Large projects cannot rely on accommodation and housing in the area because *"it simply isn't there".*
- Housing is an issue and *"people struggle to get workers in the area".*
- Very little housing and accommodation in Jerilderie and Coleambally.

Through the provision of accommodation for up to 450 workers, the proposed worker accommodation facility will largely avoid the need for the project's non-local construction workforce to access rental housing or short-term accommodation. As such, housing and accommodation prices are unlikely to be affected.

The unmitigated significance of reduced availability of short-term accommodation is assessed as **low**. The likelihood of the impact occurring is assessed as being **unlikely** and the magnitude of the impact is assessed as being **minor**.

The project may also work with local accommodation providers to advise of the accommodation requirement in advance. This provides an opportunity for existing market to increase total supply (if necessary and possible) and also allows the project to schedule peak workforce requirements to avoid busy times due to tourism, community events and the like.

The mitigated significance of reduced availability of short-term accommodation is assessed as **low**. The likelihood of the impact occurring is assessed as being **unlikely** and the magnitude of the impact is assessed as being **minor**.

A summary of the assessment is presented in Table 7.12.

Table 7.12 Reduced availability of housing and accommodation

Social impact	Matter	Affected parties	Duration	Extent	Unmitigated	Mitigated
Housing and access to services	Reduced availability of rental housing and short-term accommodation	Residents of the local and regional area Project workforce	Construction	Local area Nearby regional communities Regional area (commutable distance)	Low (C1) **Impact**	Low (D1) **Impact**

7.5 Local amenity

This section provides an assessment of project impacts related to local amenity. The discussion addresses the value the community places in the surrounding rural landscape and how this contributes to the way of life. Consideration is given to how the project may contribute to a change to visual surroundings including the presence of heavy vehicles on local roads, and the noise and dust associated with construction activities and vehicles along traffic routes. While changes to amenity associated with the generation of construction traffic are discussed in this section, traffic condition changes that may contribute to a perception of increased risk of safety are discussed in Section 7.7.2.

Impacts related to local amenity include:

- loss of amenity due to changes to the visual landscape
- loss of amenity due to increased noise from construction activities and traffic
- loss of amenity due to increased dust from construction activities and traffic
- changes to the natural environment impacting on enjoyment of ecological values.

7.5.1 Loss of amenity due to changes to the visual landscape

During the construction and operation phase of the project, changes to the visual character of the landscape will occur. Nearby landowners with a line of sight to the development footprint may be impacted by these changes. Residents with views of project infrastructure may experience a changed landscape and shadow flicker from the wind turbines. Visual impacts to the local landscape may cause stress and anxiety for nearby residents and the broader community.

Local stakeholders identified the rural landscape is valued for its beauty and contribution to local identity, landscape changes may result in reduced enjoyment of surrounds and reduced sense of community.

Interviews conducted as part of SIA engagement found that some nearby landowners placed high value on the local environment and scenic quality of the landscape with sentiments including:

- “The spirit of the land will change”
- strong value for the natural environment
- “Pristine Riverina environment”

- "We are here to be away from it all"
- the local area is characterised by being isolated, quiet, still, and little traffic, this will change with the introduction of renewable energy infrastructure.

The following sections provide discussion of various potential changes to local visual amenity that may result from the project.

i Construction and operation

The Landscape and Visual Impact Assessment (LVIA) undertaken for the EIS (Moir Landscape Architecture Pty Ltd 2023) assessed the visual impact of the project during its construction and operation.

While the existing landscape quality and character is of high importance to local residents, the LVIA (Moir Landscape Architecture Pty Ltd 2024) determined the landscape is of low scenic quality and devoid of significant landscape features. Modification and clearing of the land for agricultural use combined with the flat topography results in the landscape being essentially a blank canvas. Any contrasting addition, particularly one of the scale of a wind farm, is likely to become a defining character element. The LVIA has identified that this will not diminish the existing agricultural character; however, it was noted that the project will impact the overall and broader landscape character.

The LVIA assessed the potential for visual impacts from various viewpoints around the development footprint encompassing road views and residential views. The LVIA concludes there are some opportunities to view the project from non-associated dwellings within 8 km of a WTG. The greatest visual effect is most likely to be felt by residents in the immediate vicinity of the project. Of the 22 non-associated dwellings within 8 km of the project that were assessed, 21 are likely to have a negligible - low visual impact due to existing vegetation screening reducing views of project infrastructure (Moir Landscape Architecture Pty Ltd 2024). The LVIA found that unmitigated impacts would be 'high' at one residence, R019 (see Figure 21 in the LVIA). This is due to the distance from the dwelling to project infrastructure, gaps in existing vegetation screening and the flat landscape. The LVIA also assessed impacts from public viewpoint locations, including Yanco Bridge Rest Area and Oolambeyan Homestead Picnic Area. Views of project infrastructure will be screened from both of these public viewpoints by existing vegetation (Moir Landscape Architecture Pty Ltd 2024).

As identified in Table 7.2, the development footprint has been refined in response to feedback received from the community to minimise visual impacts.

ii Shadow flicker assessment

As described in the LVIA (Moir Landscape Architecture Pty Ltd 2024), shadow flicker occurs when rotating turbines cause moving shadows as the blades pass in front of the sun. Modelling of shadow flicker has been conducted using specialist software (WindPro) to determine the hours in a year that the surrounding area will be impacted by shadow flicker.

No non-associated residences will be subject to shadow flicker. A number of roads in the region surrounding the project will experience shadow flicker. Shadow flicker has the potential to cause annoyance to commuters.

iii Night lighting

Due to the relatively isolated location of the project, there are few existing sources of lighting in the night-time landscape. Aviation hazard lighting has the potential to extend the visual effect of the project to night time and alter the character of the night landscape. If required, aviation hazard lighting will impact receptors that view the landscape at night, including photographers, star gazers, campers, and some landowners with potential visibility of the WTG hubs. If aviation hazard lighting is required, mitigation measures will be implemented to reduce the impact of aviation hazard lighting on nearby receptors (Moir Landscape Architecture Pty Ltd 2024).

iv Social impact assessment of visual impacts

Given the value placed on the visual character of the landscape by the local community and the potential for them to experience these changes from nearby roads, the unmitigated significance of changes to the visual character of the local landscape is assessed as **high**. The likelihood of the impact occurring is **likely**, and the magnitude is **moderate**.

Design considerations outlined in the LVIA involve consideration of the positioning of project elements to take advantage of existing vegetation for screening. Vegetation outside of the development footprint will be retained.

Mitigation methods in the form of supplementary planting will potentially reduce visual impacts at the non-associated dwelling (R019) identified as having a 'high' visual impacts rating. The provision of mitigation measures at R019 will be undertaken in consultation with the landowner (Moir Landscape Architecture Pty Ltd 2024).

A grievance mechanism used throughout construction and operation will also provide local stakeholders the opportunity to raise any concerns about changes to visual amenity that may result from the project.

The mitigated significance of changes to the visual character of the local landscape is assessed as **low**. The likelihood of the impact occurring is **possible**, and the magnitude of the impact is **minimal**.

A summary of the assessment of locality impacts is presented in Table 7.13.

Table 7.13 Loss of amenity due to changes to the visual landscape

Social impact	Matter	Affected parties	Duration	Extent	Unmitigated	Mitigated
Local amenity	Loss of amenity due to changes to the visual landscape	Local residents and visitors Motorists using nearby roads	Construction and Operation	Local area	High (B3) **Impact**	Low (C1) **Impact**

7.5.2 Increased noise from construction activities and traffic

There is potential for project activities to generate additional noise for neighbouring landowners, as well as along proposed haulage routes during construction. Construction noise is generated by activities such as earthworks, site levelling, laying of access tracks, drainage works and construction traffic. The social effect of impacts related to noise include disruptions to the quality of life enjoyed by nearby residents.

The Noise Impact Assessment (NIA) undertaken for the EIS (Echo Acoustic Consulting 2024) assessed the noise levels for construction activities, including: road upgrades and internal road establishment, site establishment and demobilisation, WTG foundation construction, electrical trenching and cabling, WTG installation, commissioning and testing of substation and electrical connection construction.

The assessment determined that for some construction stages and locations, if all activity were to occur concurrently under weather conditions which are most conducive to noise propagation, the noise affected level (45 dB(A)) defined by the *Interim Construction Noise Guideline* (DECC 2009)) may be exceeded at R019, R077 and R088. Results presented are a worst case (highest noise level), scenario. For most activities conducted during the construction program, noise levels will be significantly lower than have been predicted. It is likely that these three receptors will be subject to noise levels above the noise affected level for only a small percentage of the construction program, and then, only under specific scenarios which might not arise in practice. Construction noise management measures will be implemented during construction works in accordance with the ICNG requirements.

A road traffic noise assessment has predicted that traffic noise criteria will be achieved at residences close to local roads that will be used by project-related construction traffic.

The unmitigated significance of increased noise from construction activities and traffic is assessed as **medium**. The likelihood of the impact occurring is assessed as being **possible** and the magnitude of the impact is assessed as being **minor**.

Mitigations outlined in the NIA include the provision of timely information to potentially affected residents on:

- construction timing
- types and duration of works that are expected to be noisy
- measures to be implemented to minimise noise
- when respite periods will occur.

Mitigation measures (including amalgamating vehicle loads) will be implemented during construction to minimise traffic noise.

Spark Renewables will implement a complaints and grievance procedure for the construction and operation phases (including a dedicated project phone number and project email), which provides the opportunity for stakeholders to raise matters and feedback. The complaints and grievances mechanism will facilitate the timely response to stakeholder complaints and grievances and enable the monitoring and reporting of grievances and Spark Renewables response.

The mitigated significance of increased noise from construction activities and traffic is assessed as **low**. The likelihood of the impact occurring is assessed as being **possible** and the magnitude of the impact is assessed as being **minimal**.

Table 7.14 summarises locality impacts related to increased noise from construction activities and traffic.

Table 7.14 Increased noise from construction activities and traffic

Social impact	Matter	Affected parties	Duration	Extent	Unmitigated	Mitigated
Local amenity	Increased noise from construction activities and traffic	Nearby neighbours, residents of the local and regional area	Construction	Local area, haulage routes	Medium (C2) **Impact**	Low (C1) **Impact**

7.5.3 Loss of amenity due to increased dust from construction activities and traffic

The EIS identified that construction activities, principally earthworks and vehicle movements along unsealed roads, can give rise to temporary changes in air quality which has the potential to reduce amenity. Air quality and dust concerns were not raised throughout SIA engagement with nearby landholders or during EIS engagement activities. However, because the generation of dust can reduce air quality, any dust impacts may reduce amenity or be a nuisance for nearby receivers or road users along the local road network.

The mitigated significance of increased dust from construction activities and traffic is assessed as **low**. The likelihood of the impact occurring is assessed as being **possible** and the magnitude of the impact is assessed as being **minimal**.

Mitigations include use of water trucks for dust suppression and regular maintenance of unsealed road surfaces.

A complaints and grievances mechanism would also capture any feedback regarding amenity impacts resulting from dust generation. As described earlier, the complaints and grievances mechanism will facilitate the timely response to stakeholder feedback.

The significance of loss of amenity due to increased dust from construction activities and traffic is assessed as **low**. The likelihood of the impact occurring is assessed as being **unlikely** and the magnitude of the impact is **minimal**. Table 7.15 summarises locality impacts related to dust generation.

Table 7.15 Loss of amenity due to increased dust from construction activities and traffic

Social impact	Matter	Affected parties	Duration	Extent	Unmitigated	Mitigated
Local amenity	Loss of amenity due to increased dust from construction activities and traffic	Nearby neighbours, residents of the local and regional area	Construction	Local area, haulage routes	Medium (C2) **Impact**	Low (C1) **Impact**

7.5.4 Ecological changes affecting cultural and community values

In the course of SIA engagement a small number of participants, including nearby landholders and First Nations stakeholders, expressed concern in relation to how the project may change the natural environment and affect existing ecological values which in turn could impact how individuals experience their surrounds (see Section 6.2). Some concerns associated with the environment related to possible unforeseen negative impacts that would not necessarily be realised for some time in the future by which stage it would be too late. Sentiments arising from SIA engagement relating to environmental values included the following:

- The wind (and solar) farm will "change the character and amenity" of this location, more than just visually – environmental impacts of the infrastructure, including the cement and disturbance to the ground.
- Concern about environmental impacts from the project, including flora and fauna, landscape changes.
- *"Whilst I was on country, I witnessed many Dinawan (Emu) Womboin (Kangaroo) Ngarung (Lizards) and Budyaan (Birds) The area also is home to Maliyan (Wedge Tail Eagle) and as such Maliyan has many extremely large nests in the area. The habitat for all these animals must be taken into consideration…".*
- Country is "our safe space".

- Broadly speaking, the Aboriginal community are not compensated for the loss of land that get developed on:
    - Being on Country provides benefits for mental health and physical health
    - "We don't want to hand it over without a fight"
    - The local Aboriginal community *"can't be bought".*
- Concerns about blade strike and impact on local birdlife.

The EIS has assessed the potential impacts of the project on the natural environment. The biodiversity values of the development footprint are described in the Biodiversity Development Assessment Report (BDAR) (Biosis 2024). The BDAR found that vegetation within the subject land is dominated by native vegetation in varying conditions due to livestock grazing, installation of cropping bays and historical overstorey removal (clearance of taller, woody canopy), which has resulted in large areas of derived native grasslands, as well as large areas of natural grassland and woodland, with smaller sporadic wetlands scattered throughout (Biosis 2024).

The project design has avoided impacts to biodiversity as far as practicable; however, where impacts are unavoidable, biodiversity offsetting mechanisms will be implemented. The BDAR found that there is a prevalence of native vegetation in the South West REZ, and as such site selection for the project has focussed on avoiding higher quality woodland and forested areas as well as areas of threatened ecological communities and high quality habitat. Avoidance of native vegetation, threatened ecological communities and threatened species habitat have been undertaken to restrict impacts to approximately 1,145 ha of native vegetation within the development footprint, including three threatened ecological communities.

Threatened flora and fauna species were identified during field surveys. Iterative project design has avoided direct impacts to many of these species where possible, and as such has reduced impacts. Some impacts cannot be avoided by the project. Accordingly, residual impacts may occur to nine threatened flora species and five threatened fauna species which are either known to occur, or assumed to be present.

The BDAR assessed the risk of turbine strike for bird and bat species. The assessment considered the likelihood of each turbine resulting in potential strikes, largely dependent on surrounding habitat types, and the potential consequence on species utilising those habitats if they were to collide with a turbine (Biosis 2024). The assessment showed that 76% of the proposed turbines are within a low to moderate risk category, with 24% falling within a high to very high risk category (Biosis 2024). Further refinements to the development footprint will consider 'high' and 'very high' risk WTGs for removal and a Bird and Bat Adaptive Management Plan (BBAMP) will be developed prior to operation and will detail adaptive management measures that will be implemented in the event of significant collisions to threatened or 'at risk' bird and bat species (Biosis 2024).

Potential changes in surroundings due to the combined effect of any project induced changes in ecological values and the quality of natural assets will be experienced primarily by near neighbours to the project.

The unmitigated significance of ecological changes affecting cultural and community values is assessed as **high**. The likelihood of the impact occurring is assessed as being **likely** and the magnitude of the impact is assessed as being **moderate**.

Spark Renewables will implement the management, mitigation and offsetting measures proposed in the BDAR. This will include the establishment of local biodiversity stewardship sites and payments to the Biodiversity Conversation Trust. Local stewardship sites will provide long-term ecological conservation in the local area, which is likely to improve enjoyment of the environmental surrounds and wildlife for nearby residents, environmental groups, and other individuals with an attachment to the locality.

The mitigated significance of changes in ecological values and the quality of natural assets is assessed as **medium**. The likelihood of the impact occurring is assessed as being **likely** and the magnitude of the impact is assessed as being **minor**. Table 7.16 summarises locality impacts related to changes in ecological values and the quality of natural assets.

Table 7.16 Ecological changes affecting cultural and community values

Social impact theme	Impact on people	Affected parties	Project timing	Extent	Unmitigated	Mitigated
Local amenity	Ecological changes affecting cultural and community values	Residents of the local and regional area People with attachment to the locality Environmental groups and organisations.	Permanent for life of project	Within the development footprint	High (B4) **Impact**	Medium (B2) **Impact**

7.6 Cultural heritage

This section provides an assessment of project impacts related to cultural heritage. This discussion considers opportunities and challenges associated with management of cultural heritage items and sites. It also considers how enhanced access to privately-owned land may enable opportunities for connecting to Country.

Project related benefits and impacts related to cultural heritage include:

- increased opportunities for connection to Country
- potential impacts to unknown sites or items of Aboriginal cultural significance.

7.6.1 Increased opportunities for connection to Country

Through various aspects of project pre-construction, construction and operations, opportunities for connection to (and caring for) Country have been identified. Acknowledging that in recent history the project area has been privately held, access to this land for cultural sustenance has been restricted. The advancement of this project has consequently resulted in opportunities for members of the local First Nations community to access Country. For example, during fieldwork carried out for the Aboriginal Cultural Heritage Assessment (ACHA) prepared for the EIS (EMM 2024c), RAPs attended site to assist archaeologists in field surveys to identify sites and items of cultural significance.

Procurement targets will be implemented for First Nations people and businesses, as well as jobs for salvaging incidental finds. During operation, there will be opportunities for other skilled and unskilled positions, including in general and environmental management. These opportunities may provide First Nations employees time on Country, fostering connection to Country, and caring for Country.

During SIA consultation, First Nations stakeholders expressed value for cultural awareness on site throughout the project phases. It was expressed that cultural awareness would enhance opportunities for any First Nations personnel to share and express culture. Many stakeholders also expressed concerns regarding the sharing of local cultural heritage knowledge to the next generation. Sentiments shared by First Nations stakeholders included:

- strong interest in learning cultural heritage skills so knowledge can be carried on to next generation

- cultural heritage knowledge supports connection with ancestors.
- *"This area is a very spiritual place for my Wiradjuri people and as such has many special places, songlines and dreaming places that my people have cared for and continue to have connection to for over 80,000 + years"*
- important to train those in the local Aboriginal community in cultural heritage, as the knowledge holders in the area are getting older and are passing or less able to carry out the work
- stress importance of cultural awareness training for personnel involved in the project, and importance of cultural safety on-site
- the project would benefit from having someone from the Aboriginal community employed across all stages of the project, for example from heritage survey work, construction phase (including managing incidental finds), to operational phase.

The unenhanced significance of the increased opportunities for connection to Country is assessed as **medium**. The likelihood of the impact occurring is assessed as being **possible** and the magnitude of the impact is assessed as **minor.**

Enhancement measures established through the IPP and Aboriginal participation plan (as discussed in Section 7.3.1 above) would contribute to meaningful procurement opportunities for First Nations communities throughout the lifetime of the project. This may include employment of First Nations site personnel who can manage chance finds and salvage artefacts.

The project may also provide training for key site personnel to develop an awareness of significant cultural artefacts and understand who to contact if a chance find occurs. Additionally, cultural awareness training for key site personnel would enhance sharing of culture and respect for Country they are working on.

As established during SIA consultation, there is a preference to involve First Nations people in the operational environmental management, monitoring and assessment of unexpected finds. This may be addressed by the IPP and Aboriginal participation plan in subsequent project planning stages.

The project presents an opportunity for First Nations peoples to engage with historical cultural materials and be present on their ancestral lands. Furthermore, this initiative is anticipated to promote a deeper understanding of both past and present cultural values in the area, along with opportunities for sharing heritage insights and engaging both the First Nations community and the broader community.

The enhanced significance of increased opportunities for connection to Country is assessed as **medium**. The likelihood of the impact occurring is assessed as being **possible** and the magnitude of the impact is **moderate.**

Table 7.17 summarises locality impacts related to increased opportunities for connection to Country.

Table 7.17 Increased opportunities for connection to Country

Social impact theme	Impact on people	Affected parties	Project timing	Extent	Unenhanced	Enhanced
Cultural heritage	Increased opportunities for connection to Country	Local First Nations communities	Life of project	Regional study area	Medium (C2) **Benefit**	Medium (C3) **Benefit**

7.6.2 Potential impacts to sites, items, or places of Aboriginal cultural significance

Impacts experienced by Aboriginal stakeholders could include disturbances to culturally important places, sites, or artefacts. Aboriginal people often experience grief and loss due to the loss of cultural artefacts or sites.

The project area is situated within the Riverine Plains region, which is composed of three language groups; the Wiradjuri in the north and east, the Kulin language group (Mathi Mathi, Wathi Wathi, Nari Nari and Wemba Wemba) in the west, and the Murray River language group (Yita Yita, Yota Yota, and Pangerang/Bangerang) in the south (Pardoe and Martin 2011) (NOHC 2022). As described during SIA engagement the project area is a spiritual place for the Wiradjuri people, where there is a connection to Country through its many *"special places, songlines and dreaming places".*

The ACHA undertaken for the EIS (EMM 2024c) identified Aboriginal sites or places near or within the development footprint and assessed their cultural significance, which included field surveys and stakeholder engagement. The ACHA found that there were 227 Aboriginal Heritage Information Management System (AHIMS) registered Aboriginal heritage sites within a 6,900 km^2 search area centred on the project area prior to completion of field surveys for the project. Field surveys performed as part of the ACHA identified 32 sites and places along with a low-density distribution of predominantly surface and shallowly buried cultural materials distributed across the project area. Project refinement has resulted in the avoidance of 15 sites, with residual impacts to 17 sites.

Interviews with First Nations stakeholders including three RAPs established that there is a strong importance placed on the identification and management of Aboriginal heritage items at the project Site. SIA engagement also found that First Nations stakeholders expressed a high social value associated with building and passing on cultural heritage knowledge. Sentiments and comments relating to Aboriginal cultural heritage on the project site included:

- knowledge holders in the area are getting older and are "*passing on"* or *"unable to carry out the work"*
- strong value for the protection of the land and artefacts
- cultural heritage knowledge can support good mental health within the community
- there should be someone from the Aboriginal community with heritage experience on the site throughout construction works
- *"Many Aboriginal heritage items on the project site"*
- concern about who is going to teach the next generation to carry on culture.

During SIA engagement, First Nations stakeholders also expressed a strong value for embracing cultural heritage through connection to, and caring for, Country. Connection to Country was also linked to strengthen community ties and wellbeing within the local Aboriginal community. During SIA interviews, First Nations stakeholders shared sentiments relating to Country, such as:

- "Cultural heritage training as also a way to connect with Country and ancestors"
- the land is "our safe space"
- "Country provides benefits for mental health and physical health"
- opportunities for employment on site are ideal for those in the Aboriginal community so they can be on Country
- there is a "shortage of land for mob to connect with Country and with each other"

- lack of culturally safe space for cultural expression
- "Reconnect mob with culture, including land, language and community".

The unmitigated significance of potential impacts related to unknown items or sites of Aboriginal heritage is assessed as **medium**. The likelihood of the impact occurring is assessed as being **likely** and the magnitude of the impact is assessed as being **minor**.

Following the refinement of the development footprint, 17 Aboriginal sites have been assessed as being directly impacted by the project. Six sites of moderate significance are assessed being subject to **complete loss of value,** nine sites of varying significance are assessed as being subject to **partial loss of value** (four sites of high significance, four sites of moderate significance, one site of low significance) and two sites of moderate significance will experience **no loss of value (**as identified cultural materials that inform the sites' significance would remain outside the development corridor and/or development footprint even where the broad site listing is partially within the development corridor) (EMM 2024c).

While the project will result in intergenerational/cumulative loss to cultural materials, it is considered that there will be some cultural heritage benefits. These include the long-term curation of cultural material that may be submitted to future academic research and study; a greater understanding of the past and contemporary values in the region; and opportunities for heritage interpretation and public outreach.

The ACHA proposes the development of an Aboriginal Cultural Heritage Management Plan to provide the framework for Aboriginal heritage management during construction and operation.

The effectiveness of mitigation measures will be dependent upon thorough and ongoing stakeholder engagement with the local Aboriginal community. The effective implementation of the proposed Aboriginal Cultural Heritage Management Plan, as outlined in the ACHA, is key to effective mitigation of the disturbance to culturally important places, sites, or artefacts. Further, the project should ensure that the construction workforce have an awareness of chance finds of cultural artefacts and understand who to contact if a chance find occurs. This would be supported by cultural awareness training for key site personnel.

The mitigated significance of potential impacts related to unknown items or sites of Aboriginal heritage is assessed as **medium**. The likelihood of the impact occurring is assessed as being **possible** and the magnitude of the impact is assessed as being **minor**. A summary of the assessment is presented in Table 7.18.

Table 7.18 Potential impacts to unknown items or sites of Aboriginal cultural significance

Social impact	Matter	Affected parties	Duration	Extent	Unmitigated	Mitigated
Environmental and cultural values	Potential impacts to unknown items or sites of Aboriginal cultural significance	Local Aboriginal groups	Life of project	Local and regional area	Medium (B2) **Impact**	Medium (C2) **Impact**

7.7 Community, safety, and wellbeing

This section provides an assessment of project impacts related to safety and wellbeing. It considers the presence of a non-resident workforce in a sparsely populated regional setting and the effect this might have on local population dynamics and social cohesion.

This section also discusses road conditions as a key regional issue, and how stakeholders may perceive an increased risk to safety through project generated traffic. Perceived and actual bushfire risks are also discussed in relation to safety and wellbeing as well as local capacity to respond.

Benefits and/or impacts related to the project under the topic of safety and wellbeing include:

- changes to local population dynamics due to the influx of construction workforces
- perceived impact on safety due to generation of traffic
- perceived impact on safety due to increased bushfire risk
- potential concerns related to operational noise and vibration impacting biodiversity and health and wellbeing
- social cohesion and resilience arising from community benefits and investment.

7.7.1 Changes to local population dynamics due to the influx of the workforce

Whilst SIA engagement found that nearby landholders and the broader community are familiar with sudden and temporary increases in population, including other construction projects and seasonal agricultural workers, the presence of a 450-person temporary worker accommodation facility is likely to introduce changes to social cohesion and sense of safety in the local study area. The facility itself would be operated by a staff of about 5–10 and operated 24 hours a day, 7 days a week.

Impacts associated with an influx of temporary population can include perceived changes in safety and security within townships, increased occurrence of antisocial behaviour in public places, overcrowded living conditions with streets heavily utilised by parked vehicles, and considerable increases in traffic on the local road network.

The introduction of the accommodation facility concentrates the workforce to a more condensed area outside of the existing town centres. Issues related to social integration and cohesion will be focused on the adjoining landholders and services and facilities accessed by the workforce in nearby towns. This assessment focuses on related community safety concerns and the effect the new accommodation facility may have on adjoining and nearby landholders.

During SIA interviews, one nearby landholder raised concerns about social cohesion relating to the presence of large numbers of non-resident workers in the local study area throughout the construction period. This related to experiences with the construction of a nearby project where there was “theft and dodgy behaviour” from a very small number of workers. Overall, the presence of non-resident workers was not a strong concern amongst stakeholders interviewed as part of the SIA.

The unmitigated significance of the influx of workers changing local population dynamics is assessed as **medium**. The likelihood of the impact occurring is assessed as **possible** and the magnitude of the impact is **moderate**.

It is recommended that the project encourage operation workers to contribute to the local community through volunteerism or other initiatives. Further, the implementation of a comprehensive Community Engagement Plan and Worker Code of Conduct could mitigate perceived public safety risks. Lighting and security cameras will be installed where necessary for safety and security purposes.

The project would also consult with community services such as police and emergency services to familiarise relevant services with the project in case of an incident.

The mitigated significance presence of workers changing local population dynamics is assessed as **medium.** The likelihood of the impact occurring is assessed as **unlikely** and the magnitude of the impact is assessed as being **moderate**. A summary of the assessment is presented in Table 7.19.

Table 7.19 Changes to local population dynamics due to the influx of workforces

Social impact theme	Impact on people	Affected parties	Project timing	Extent	Unmitigated	Mitigated
Community, safety, and wellbeing	Changes to local population dynamics due to the influx of workforces	Nearby residents and landholders	Construction	Local area	Medium (C3) **Impact**	Medium (D3) **Impact**

7.7.2 Perceived impact on safety due to generation of traffic

Road users in the local area and along transport haulage routes may experience an actual or perceived increased risk to safety due to project-generated traffic during construction. Additional vehicles on the road associated with project construction may reduce public road safety which may be compounded by non-resident workers who are unfamiliar with the area.

Project generated traffic will travel along Kidman Way, Cadell Road (south), McLennons Bore Road, Fernbank Road, Wilson Road and Goolgumbla Road to access the development footprint. The Traffic Impact Assessment (TIA) reported crash statistics in the local area between 2018 and 2022 (inclusive), finding that were five crashes in total, none of which were fatalities (EMM 2024d). The TIA assessed that overall, these crashes do not indicate any significant road safety deficiencies along the transport routes within the locality. However, it should be noted that near misses are not reported.

Road condition was raised during SIA interviews, where road conditions and flood damage were reported as ongoing issues in the local and regional study area. Nearby landowners, business stakeholders, and Murrumbidgee Council expressed concerns about additional traffic utilising the road network without appropriate upgrades and maintenance. Stakeholder comments and sentiment included:

- local roads are in poor condition and prone to flood damage
- concerns about construction vehicles on local roads and worsening conditions.

Stakeholders also noted that there are specific hazards and considerations for construction traffic within the local road network. Comments included:

- overhead powerlines need to be high enough to allow clearance for use of plant and equipment (i.e. excavator) during usual maintenance on the Coleambally Outfall Drain
- Mclennons Bore Road and Liddles Lane are in bad condition *"5 mm of rain is enough to damage these roads"*
- concern about people moving through area during construction and leaving gates open and stock getting out
- we may need to be more *"vigilant about stock on roads".*

The TIA determined that daily traffic during the peak construction month is expected to reach 462 light vehicle movements and 176 heavy vehicle movements, totalling 638 vehicular movements. Oversize and over mass vehicles will also require access to the development for the delivery of substation and WTG components. The TIA found that all key intersections will (EMM 2024d)be capable of absorbing the project's construction traffic.

The unmitigated significance of perceived increased risk to road safety is assessed as **medium**. The likelihood of the impact occurring is assessed as **possible** and the magnitude of the impact is **minor**.

The TIA recommends that mitigation measures during the project's construction phase include a detailed construction traffic management plan (CTMP) to be developed in consultation with Transport for NSW, Murrumbidgee Council and Edward River Council.

Spark Renewables will provide a suite of intersection and road upgrades along the access route from Kidman Way to the project, including road widening along sections of McLennons Bore Road, Fernbank Road, Wilson Road and Goolgumbla Road. Existing intersections will also be upgraded to accommodate the project's construction traffic.

A road maintenance strategy will be developed in consultation with Murrumbidgee Council and Edward River Council and will include requirements for dilapidation surveys during construction.

The TIA expects that shuttle buses will be provided to transport workers from the accommodation facility to the various site access points, and vice versa. These shuttle buses will replace private vehicle trips and contribute to a lower increase in traffic volumes on the road network during the construction period.

In addition to the mitigations recommended in the TIA, it is proposed that the project enters into a Voluntary Planning Agreement in consultation with directly impacted councils, and engages with the local community to explain the findings of the TIA and mitigation measures being put in place to protect against any deterioration of public safety.

Whilst mitigation measures proposed in the TIA will reduce risk to public safety, perceptions of safety risks may remain amongst a small number of stakeholders. As such, the mitigated significance of perceived increased risk to road safety is assessed as **low**. The likelihood of the impact occurring is assessed as being **unlikely** and the magnitude of the impact is assessed as being **minor**. A summary of the assessment is presented in Table 7.20.

Table 7.20 Perceived increased public safety risk due to increased traffic

Social impact	Matter	Affected parties	Duration	Extent	Unmitigated	Mitigated
Community, safety, and well-being	Perceived impact on safety due to generation of traffic	Road users and pedestrians	Construction	Local area, along haulage routes	Medium (C2) **Impact**	Low (D2) **Impact**

7.7.3 Perceived increased fire safety risk from the project

The Bushfire Assessment Report (BAR) prepared for the project found that part of the project area and surrounding land is mapped as bush fire prone (Waratah Bushfire 2024). During SIA engagement, stakeholders emphasised concerns about fire risk, and the implications of wind turbine construction and operation for delivery of aerial firefighting services.

Stakeholders noted varying fire management practices, with feedback including:

- one nearby developer did not listen to advice from locals about needing a fire cart on site, since built there has been several fires
- need to ensure access and equipment ready for fires on site
- other projects have pushed local fire brigade capacity
- if a fire breaks out on the western extent of the project site (Conargo area) there is less capacity to respond.

During SIA engagement, landowners noted that the local fire brigade is staffed by volunteers from the local study area. These landowners noted that there were concerns about how the presence of project infrastructure may impede emergency response (Section 6.3).

As outlined in the BAR, the area is relatively well-served by fire response services. The nearest volunteer fire brigade is Goolgumba East Rural Fire Brigade within the project area, and Argoon Rural Fire Brigade is approximately 7 km to the south of the project area (Waratah Bushfire 2024). There are two fire and rescue stations located at Jerilderie and Deniliquin, and three SES stations at Coleambally, Jerilderie, and Deniliquin (Section 5.5.1).

The development footprint includes sufficient land to incorporate the required Asset Protection Zones (APZs) and on-site water storage will be provided to support firefighting.

The unmitigated significance of perceived increased fire safety risk from the project is assessed as **medium**. The likelihood of the impact occurring is assessed as being **possible** and the magnitude of the impact is assessed as being **minor**.

The BAR lists a variety of protection measures including establishing APZs for wind turbines, substations and the accommodation facility, landscaping (i.e. to manage fuel loads), building design (i.e. ember protection), water supplies (i.e. minimum dedicated water held), access (i.e. safe, reliable, and unobstructed), and development of a Bushfire Emergency Management and Evacuation Plan and Fire Management Plan in collaboration with the local fire brigade.

Regular and ongoing communication with surrounding landowners and emergency services to identify and address bushfire risks is also an important mitigation measure. Through engagement, the project can ensure local residents understand the risk and mitigation measures that will be implemented. Spark Renewables will consult with aerial firefighting operators to develop procedures for the safe operation of emergency aircraft in the vicinity of the project.

Whilst mitigation measures proposed in the BAR will reduce bushfire risk, perceptions of risk may remain amongst a small number of stakeholders. As such, the mitigated significance of perceived increased fire safety risk from the project is assessed as **low**. The likelihood of the impact occurring is assessed as being **unlikely** and the magnitude of the impact is assessed as being **minor**.

A summary of the assessment is presented in Table 7.21.

Table 7.21 Perceived increased fire safety risk from the project

Social impact	Matter	Affected parties	Duration	Extent	Unmitigated	Mitigated
Community, safety, and wellbeing	Perceived increased fire safety risk from the project	Local residents Emergency services	Operation	Regional area	Medium (C2) **Impact**	Low (D2) **Impact**

7.7.4 Potential concerns related to operational noise and vibration impacting biodiversity and health and wellbeing

In addition to noise impacts during construction, residents and local stakeholders also raised concerns regarding noise and vibrations emitted by the operation of wind turbines in relation to ear health and comfort. This concern predominantly relates to perceived risk of short and long term physical and mental health impacts for people, and may extend to effects on livestock and local biodiversity.

The NIA (Echo Acoustic Consulting 2024) confirms operational noise generated by the project can comply with the relevant assessment criteria. Due to the separation distance between the development footprint and closest residences, no vibration impacts are anticipated.

As identified in the project SIA scoping report (EMM 2022a) a condition that is perceived to potentially impact those living near wind farms, caused by the below human hearing noise called infrasound, is called wind turbine syndrome. This syndrome is often cited as causing headaches, dizziness, sleep disturbance and tinnitus. The 'Health Effects of 72 Hours of Simulated Wind Turbine Infrasound: A Double-Blind Randomized Crossover Study in Noise-Sensitive, Healthy Adults' study (N. S. Marshall 2023) found the sound that emanates from wind farms does not harm human health. The research found no evidence for the existence of wind turbine syndrome. Further, the *NHMRC Statement: Evidence on Wind Farms and Human Health* (NHMRC 2015) concludes that there is currently no consistent evidence that wind farms cause adverse health effects in humans.

The BDAR (Biosis 2024) identified that noise was assessed as a potential contributing factor to identified risks of:

- 'Reduced viability of adjacent habitat due to noise, dust or light spill' – assessed as a negligible potential and consequence during construction and operation, with near-normal levels during operation.
- 'Loss of breeding habitats' – assessed as a low potential and consequence, including loss of hollow-bearing logs during construction, as well as indirect impacts of noise, movement and potential air pressure changes surrounding turbines.
- 'Impacts to Oolambeyan National Park and the South West Woodland Nature Reserve (Kulki Precinct)' - the distance between the development footprint and the conservation reserves is great enough to prevent any impacts associated with construction and operation of the project, including noise.

The unmitigated significance of potential concerns related to operational noise and vibration impacting biodiversity and health and wellbeing is assessed as **low**. The likelihood of the impact occurring is assessed as being **Unlikely** and the magnitude of the impact is assessed as being **minor**.

Additional noise modelling will be undertaken prior to construction to reflect any changes that may occur to project design and confirm noise predictions satisfy the operational noise assessment criteria.

The Construction Environmental Management Plan (CEMP) and Construction Noise Management Plan (CNMP) will include noise management strategies that will be implemented to reduce noise impacts to local habitat and potential nesting sites.

Spark Renewables will implement a complaints and grievance procedure for the construction and operation phases (including a dedicated project phone number and project email), which provides the opportunity for stakeholders to raise matters and feedback. The complaints and grievances mechanism will facilitate the timely response to stakeholder complaints and grievances and enable the monitoring and reporting of grievances and Spark Renewables response.

The mitigated significance of potential concerns related to operational noise and vibration impacting biodiversity and health and wellbeing is assessed as **low**. The likelihood of the impact occurring is assessed as being **unlikely** and the magnitude of the impact is assessed as being **minimal**.

Table 7.22 Potential concerns related to operational noise and vibration impacts on biodiversity and health and wellbeing

Social impact theme	Impact on people	Affected parties	Project timing	Extent	Unmitigated	Mitigated
Surroundings, Safety and Wellbeing	Potential concerns related to operational noise and vibration impacting biodiversity and health and wellbeing	Local residents and regional community	Operation	Regional area	Low (D2) **Impact**	Low (D1) **Impact**

7.7.5 Social cohesion and resilience arising from community benefit and investment

Potential impacts to local population dynamics and cohesion resulting from project negotiations and construction are discussed at Section 7.7.1. The scope of project benefits also have the potential to contribute positively toward the local level social cohesion and community resilience. The potential for project benefits are derived from the workforce and economic stimulus potential, strategies for workforce integration and social impact management (including assured continuity of bushfire relief services), community benefit sharing arrangements and social investment.

Key interest areas for stakeholders during consultation identified the following matters that are expected to contribute positively to community dynamics, cohesion and resilience, and particularly in the broader context of REZ development. Areas of particular interest include:

- transparency of community fund governance
- community projects including proposed health and childcare contributions
- opportunities to upgrade community infrastructure including telecommunications, recreational and accommodation facilities
- funding for First Nations services and initiatives, and
- opportunities to reduce community power costs by way of subsidising power bills.

The significance of opportunity and benefit to social cohesion and resilience is assessed as **medium**. The likelihood of the impact occurring is assessed as being **likely** and the magnitude of the impact is assessed as being **minor**.

No additional mitigations are proposed in support of this benefit.

Table 7.23 Social cohesion and resilience arising from community benefit and investment

Social impact theme	Impact on people	Affected parties	Project timing	Extent	Unmitigated	Mitigated
Community	Social cohesion and resilience arising from community benefit and investment	Regional community	Construction and Operation	Regional area	Medium (B2) **Benefit**	-

7.8 Summary of social impacts and benefits

The key social impacts and benefits which were assessed as having a residual level of significance of **medium or higher** are presented in Table 7.24 and Table 7.25. There were five mitigated impacts which were assessed as having a residual significance of medium. There were two enhanced benefits which were assessed as having a residual significance of high, and three with a residual significance of medium.

Project impacts are largely associated with the demand for labour and the influx of the construction workforce which affects access to services, perceptions of safety and local community dynamics. Key social benefits are predominantly associated with project employment, training, and business opportunities relating to direct and indirect economic activity resulting from the project.

Table 7.24 Key social impacts

Social impact theme	ID	Matter	Significance (mitigated)
Employment, training, and business	EC04	Increased competition for labour and services	Medium (C2) **Impact**
Housing and access to services	HS01	Reduced access to health services for residents due to increased demand	Medium (C2) **Impact**
Local amenity	L04	Ecological changes affecting cultural and community values	Medium (B2) **Impact**
Cultural heritage	CH02	Potential impacts to sites, items, or places of Aboriginal cultural significance	Medium (C2) **Impact**
Community, safety, and wellbeing	CS01	Changes local population dynamics due to the influx of workforces	Medium (D3) **Impact**

Table 7.25 Key social benefits

Social impact theme	ID	Matter	Significance (enhanced)
Energy transition	T01	Positive influence on intergenerational equity	Medium (A2) **Benefit**
Employment, training, and business	EC01	Increased opportunities for employment and training	High (B3) **Benefit**
	EC02	Generation of income through procurement opportunities for local and regional businesses	High (B3) **Benefit**
	EC03	Generation of income through increased trade for retailers and accommodation providers	Medium (B2) **Benefit**
Cultural heritage	CH01	Increased opportunities for connection to Country	Medium (C3) **Benefit**
Community, safety and wellbeing	CS05	Social cohesion and resilience arising from community benefit and investment	Medium (B2) **Benefit**

8 Cumulative impacts

A community may experience cumulative impacts when multiple projects occur in a similar timeframe or located in a similar geography to other projects. Due to the number of renewable developments being advanced in the South West REZ, both planned and existing, it is important to understand and plan for cumulative impacts across a number of key impact areas. Studies carried out for the CWO REZ (see Table 4.3) demonstrate key considerations for the South West REZ, which include to identify and plan for cumulative social impacts such as construction workforce demand for housing and services and demand for local labour. Stakeholders engaged as part of the SIA highlighted that cumulative impacts are a key community concern. Likewise, there is a need to plan well in advance in order for communities to take full advantage of the cumulative benefits derived from multiple projects.

This section provides consideration of potential cumulative impacts and benefits in the region relevant to the project and in the context of existing trends within the local and regional study areas. Cumulative social impacts are assessed with consideration of other projects (on the DPHI Major Projects Planning Portal) that have the potential to interact with the project. Projects that are within an approximately 65 km distance from the project have been considered.

Transmission infrastructure to support the distribution of electricity generated by renewable energy developments in the South West REZ is currently either proposed (HumeLink and VNI West) or under construction (Project EnergyConnect). The approval and successful construction of this infrastructure, along with the outcomes of the competitive South West REZ access process, will dictate which of the projects considered in Table 7.1 will be built. It is highly unlikely that all of these projects will be approved and built and therefore, this assessment of cumulative impacts is considered conservative.

8.1 Summary of key project interactions

Projects considered to contribute to cumulative impacts and benefits are outlined in Table 7.1. To identify project overlap, the construction timeframes described in Section 2.4 are applied, noting commencement of construction from 2025 and continuing in two stages until 2030. Distance to nearby projects has been measured from the corner of McLennons Bore Road and Fernbank Road to map markers provided in major projects portal (NSWGovernment 2024).

The subsequent sections provide a discussion on the key cumulative project impacts and benefits.

Table 8.1 Cumulative impacts with other projects

Project	Distance from project	Project status	Indicative construction timing (overlap)	Indicative operational timing (overlap)	Indicative construction workforce (average & peak)	Indicative operational workforce (average & peak)	LGA	Accommodation strategy	Nearby regional communities	Potential project interactions
Dinawan Solar Farm – includes construction and operation of 800 MW solar farm and 600 MWh BESS	Included within project area (east)	Response to submissions.	36-month construction from 2025 (overlap).	25–30-year operational life (overlap)	Approx. 400 workers (peak)	Up to 10 FTE workers	Murrumbidgee	Construction of a temporary workforce accommodation facility within the project area for non-local employees. 25% of workers to be sourced from local areas.	Coleambally Jerilderie Wagga Wagga Griffith Deniliquin	Intergenerational equity Demand for labour and services Access to health services Visual amenity changes Aboriginal cultural heritage impacts Local population dynamics
Project EnergyConnect – includes construction and operation of 330 kV and 500 kV transmission line and Dinawan Substation.	Adjacent (north)	Approved September 2022 – construction in progress	24-month construction from 2022 (overlap unlikely).	2025 onward (overlap)	Approx. 500 workers (peak)	N/A	Murrumbidgee Edward River Hay Federation	Multiple construction camps (including at Dinawan Substation)	Wagga Wagga Mildura Hay Narrandera	Intergenerational equity Visual amenity changes Aboriginal cultural heritage impacts

Table 8.1 Cumulative impacts with other projects

Project	Distance from project	Project status	Indicative construction timing (overlap)	Indicative operational timing (overlap)	Indicative construction workforce (average & peak)	Indicative operational workforce (average & peak)	LGA	Accommodation strategy	Nearby regional communities	Potential project interactions
Yanco Delta Wind Farm – includes construction and operation of 1.5 GW wind farm, including approximately 208 WTGs across 24,000 ha.	12 km (south-west)	Approved December 2023	36-month construction from 2024/2025 (overlap).	End of 2025 (overlap).	Approx. 300 workers during peak construction Approx 150 workers outside of peak construction	Up to 30 workers	Murrumbidgee Edward River	Construction workers expected to commute daily to project from existing accommodation facilities in local townships. Workers would be sourced from towns and centres up to a 1.5-hour commute where possible.	Jerilderie Coleambally Darling Point Deniliquin	Intergenerational equity Demand for labour and services Access to health services Visual amenity changes Aboriginal cultural heritage impacts
Argoon Wind Farm – includes the construction and operation of 477 MW wind farm, including approximately 106 WTGs and a 477 MW BESS	7 km (south)	Proposed – EIS in preparation	Unknown	Unknown	Unknown	Unknown	Murrumbidgee	Unknown	Unknown	Intergenerational equity

Table 8.1 Cumulative impacts with other projects

Project	Distance from project	Project status	Indicative construction timing (overlap)	Indicative operational timing (overlap)	Indicative construction workforce (average & peak)	Indicative operational workforce (average & peak)	LGA	Accommodation strategy	Nearby regional communities	Potential project interactions
Pottinger Wind Farm – includes the construction and operation of 750 MW wind farm, including approximately 108 WTGs and a 500 MW BESS	60 km (west)	Proposed – EIS in preparation	24-month construction from between 2025 and 2026 (overlap).	35-year operational life form 2027 (overlap).	Approx. 450 workers (peak)	Up to 40 workers	Edward River Hay	Temporary workers accommodation may be located within the project rea or located offsite if it is determined to be required.	Hay Deniliquin Swan Hill Griffith	Intergenerational equity Demand for labour and services Access to health services Visual amenity changes Aboriginal cultural heritage impacts Local population dynamics
Pottinger Solar Farm – includes construction and operation of 300 MW solar farm and 500 MW BESS	55 km (west)	Proposed – EIS in preparation	24-month construction from 2026 (overlap).	50-year operational life from 2027 (overlap).	Approx. 220 workers (peak)	Up to 4 workers	Hay	Temporary workers' accommodation may be located within the project area or located offsite if it is determined to be required.	Hay Deniliquin Swan Hill Griffith	Intergenerational equity Demand for labour and services Access to health services Aboriginal cultural heritage impacts
Coleambally BESS – includes construction and operation of 100 MW capacity BESS across 4 ha.	40 km (northeast)	Approved September 2023	8–10-month construction from Quarter 2 2024 (overlap unlikely).	30–40-year operational life from Quarter 2 2025 (overlap).	Approx. 80 workers (peak)	One worker	Murrumbidgee	Combination of short-term accommodation and renting of houses, preferably in Coleambally, but also Darlington Point and Griffith	Coleambally Darlington Point Jerilderie Griffith Narrandera	Intergenerational equity

Table 8.1 Cumulative impacts with other projects

Project	Distance from project	Project status	Indicative construction timing (overlap)	Indicative operational timing (overlap)	Indicative construction workforce (average & peak)	Indicative operational workforce (average & peak)	LGA	Accommodation strategy	Nearby regional communities	Potential project interactions
Coleambally Solar Farm – 150 MW solar farm constructed on 570 ha formerly used to support irrigation cropping.	40 km (northeast)	Operating	Construction completed in 2018 (no overlap).	30-year operational life (overlap).	N/A	N/A	Murrumbidgee	N/A	N/A	Intergenerational equity
Bullawah Wind Farm – includes construction and operation of 1 GW wind farm, including approximately 170 WTGs across 33,000 ha.	46 km (north-west)	Proposed – EIS in preparation	24-month construction from mid-2025 (overlap).	30-year operational life from 2026 (overlap).	Approx. 400 workers (peak)	Up to 40 workers	Murrumbidgee Edward River Hay	Potential construction of temporary onsite accommodation camp if no capacity at accommodation facilities in local area	Jerilderie Hay Coleambally Griffith Deniliquin	Intergenerational equity Demand for labour and services Access to health services
Darlington Point Solar Farm – 275 MW solar farm (constructed) and 200 MW BESS (under construction) on 1,042 ha formerly used for grazing.	56 km (northeast)	Operating	Construction of solar farm complete (no overlap), construction of BESS from 2022 (overlap unlikely).	30-year operational life (overlap).	N/A	N /A	Murrumbidgee	N/A	N/A	Intergenerational equity

Table 8.1 Cumulative impacts with other projects

Project	Distance from project	Project status	Indicative construction timing (overlap)	Indicative operational timing (overlap)	Indicative construction workforce (average & peak)	Indicative operational workforce (average & peak)	LGA	Accommodation strategy	Nearby regional communities	Potential project interactions
Woodland BESS – includes construction and operation of 200 MW BESS across 16 ha.	53 km (north)	Proposed – EIS on exhibition	Six-month construction from 2023 and 2024 (overlap unlikely).	30-year operational life from 2024 (overlap).	Approx. 40 workers (peak)	N/A	Murrumbidgee	Accommodation in local towns (Darlington Point, Griffith, Leeton, and Narrandera)	Darlington Point Griffith Leeton Narrandera	Intergenerational equity
Yarrabee Solar Farm – includes construction and operation of 900 MW solar farm and BESS on approximately 2,600 ha	63 km (north-east)	Approved December 2018 – not constructed	Proposed to be constructed in 18-month stages (overlap possible).	30–50-year operational life (overlap).	Approx. 450 workers (peak) Approx. 150 workers (average)	Between 10 to 15 workers	Narrandera	Accommodation in local towns – project specific accommodation strategy to be developed early in project planning/pre-construction phase	Narrandera Wagga Wagga Griffith	Intergenerational equity Demand for labour and services Access to health services

Notes: 1. It is noted that two new projects were added to the Major Projects Planning Portal, Booroorban (Saltbush) Wind Farm (43 km west) and Conargo Wind Farm (33 km south), after completion of the assessment of impacts.

8.2 Intergenerational equity

The production of energy from renewable sources that have low carbon emissions aligns with state and federal initiatives to reach net zero emissions by 2050. While the project alone will contribute 1,200 MW to the energy market, the projects to be developed within the South West REZ could provide up to 3.98 GW of new network capacity (EnergyCo 2023). As outlined in Section 7.2.1, transitioning to renewable energy generation would assist in reducing electricity market emissions, contributing to the initiative to reach net zero by 2050 (OEH 2016). Such a transition will have a positive influence on the confidence held by current and future generations that they will have ongoing access to a relatively stable, nurturing and productive global environment.

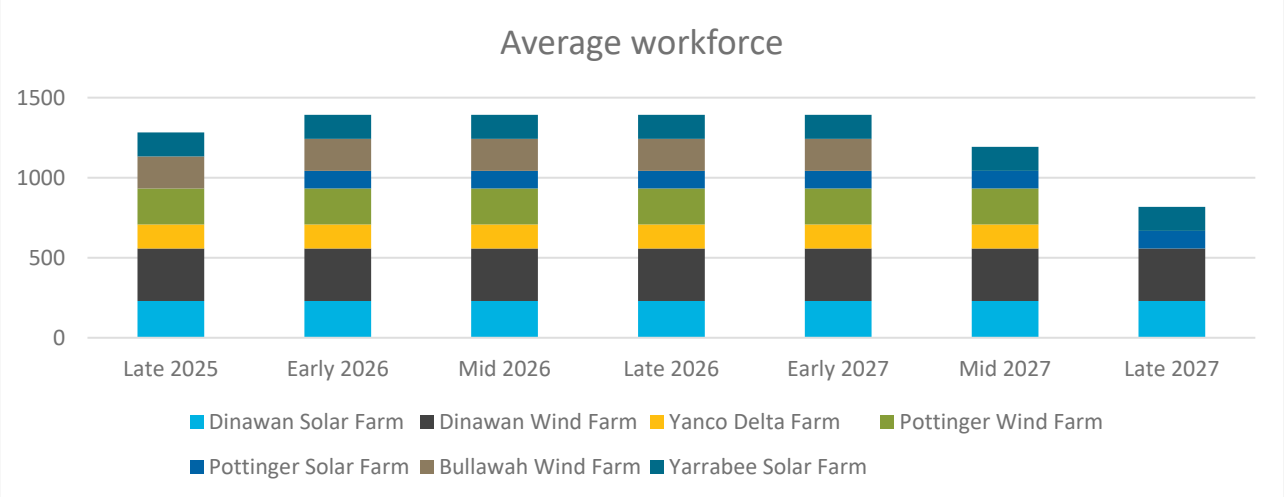
8.3 Demand for labour and services

8.3.1 Increased opportunities for employment and training

To predict cumulative construction worker demand which may intersect with the construction period of the project, 'peak' and 'average' workforce scenarios have been developed. The 'peak' workforce considers the peak requirement of each project listed in Table 8.1, as determined by the most recent available public information. Likewise, the 'average' workforce scenario utilises the average workforce numbers. It should be noted that publicly available information on average workforces is not available for three of the seven projects listed in Table 8.1, as such, average workforces have been estimated at 50% of the quoted peak workforce.

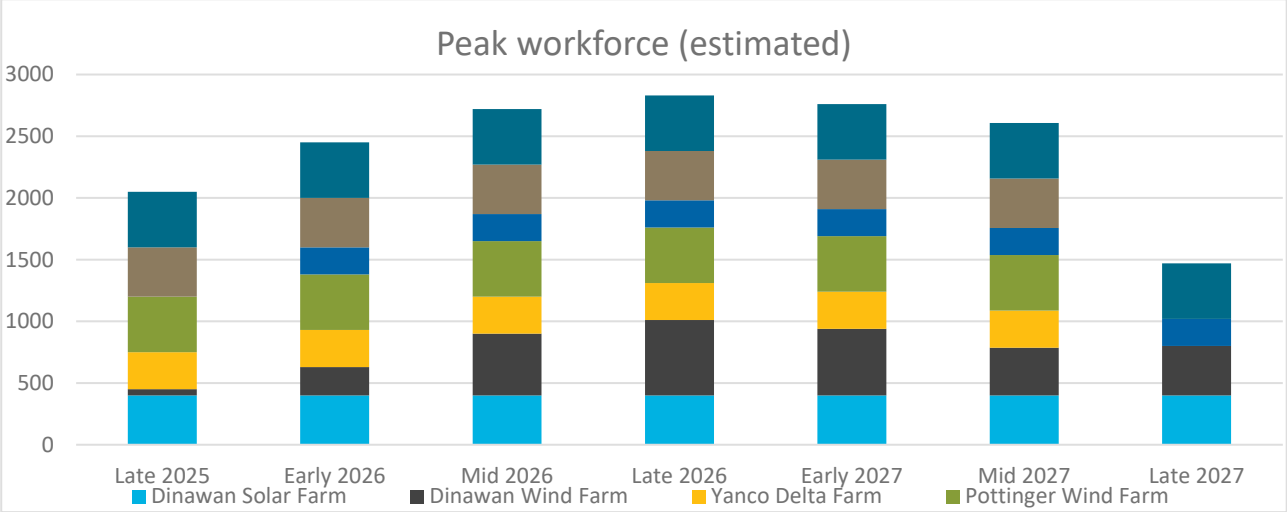
There was also limited available information on the duration of peak workforce periods, and as such, durations of peak workforce presented below have factored in peak workforce for the first two years of construction.

Cumulative workforce estimates beyond 2028 are limited, and it is anticipated that additonal development proposals will be lodged throughout the project's planning and construction period. As such, analysis beyond 2028 is unlikely to be accurate, and an updated assessment of cumulative project demands will be required on approval of this project, and updated annually.



Notes: Information taken from publically available documents at the time of writing.

Figure 8.1 Estimated cumulative construction worker demand – 'average' workforce scenario



Notes: Information taken from publically available documents at the time of writing.

Figure 8.2 Estimated cumulative construction worker demand – 'peak' workforce scenario

Distribution of workforce demand across the construction period indicates that there is likely to be significant demand for workers from mid-2026 through to mid-2027. The 'average' scenario shows that demand for workers is anticipated to reduce to 478 personnel by late 2027. For the 'peak' workforce scenario, the first two years of the construction period build to a peak demand for 2,831 workers in late 2026; however, the demand lowers to 850 workers by late 2027.

The projects considered and potential cumulative construction scenarios are subject to a range of factors that will determine whether they progress to construction, and the timing at which this occurs. However, the workforce anticipated for 2026–2027 period will be substantial, and is likely to be noticeable across the region. Those seeking employment in the region would benefit from the opportunity to gain employment. This could promote lasting socio-economic benefits for the region however this will only be realised with proponent and government investments made in training and skills development at an early stage and time provided to build on the job skills and experience. This would especially benefit those who struggle to gain and retain employment.

8.3.2 Increased demand for labour and services

The cumulative peak demand for up to 2,831 construction workers between 2026 and 2028 could affect existing businesses and initiatives which require similar skills. Businesses may be impacted as a result of:

- labour drawn from other businesses and industries who are dependent on construction labour and skills
- competition for construction labour affecting construction schedules of other projects in the region.

These projections pose a challenge for sourcing labour for the project, and for other projects in the region. It also poses a challenge to source suitable labour without introducing artificial influences on the market through rapid peaks and troughs for demand. Cumulative changes to worker demand may affect the viability of some existing businesses in the local and regional study area and, and consequently, the livelihoods which they support.

8.4 Access to health services

Local population growth (temporary or permanent) associated with local and regional development can increase the need for funding and presence of local social and health services due to increased pressures and demand from the workforces of concurrent construction projects. Temporary population growth associated with the proposed renewable development workforces may increase demand for health services including specialists.

This will be particularly significant to the nearby regional communities that are situated near multiple, concurrent projects, as outlined in Table 8.1. From the timing and workforce estimate provided, Coleambally, Jerilderie, Griffith and Deniliquin are likely to experience an increase in demand for health services over the 2026-2028 period.

Projects that intend to connect to energy network infrastructure would be subject to a REZ access scheme that requires proponents to seek access rights through a competitive tender process. Those granted access rights are charged yearly access fees by EnergyCo, with a component of this access fee to be dedicated to community or employment investments. Community investment initiatives will be guided by stakeholder and community consultation, and may range from employment programs to public and community services. Combined access fees for the multiple energy projects in the region could be used to provide additional capacity for social infrastructure and services, including health and emergency services.

8.5 Way of life and local character

Multiple projects in one locality can result in cumulative visual impacts on how the landscape is experienced. Cumulative visual impacts can arise from the presence of similar projects that may have a low impact individually, but when viewed together, can have a significant visual impact on the landscape.

There are multiple renewable energy projects, both existing and proposed, in the surrounding area including a mix of solar and wind projects. Each of these projects will result in changes to the regional landscape which will likely affect how people experience current rural surroundings.

The LVIA conducted for the EIS identified the potential for cumulative impacts from surrounding projects proposed within the South West REZ. Cumulative visual impacts were noted as a key concern by landholders and the community during SIA community engagement. The LVIA acknowledges that the re-occurrence of wind farms within the region has the potential to alter the perception of the overall landscape character.

Community sentiment suggests that the number of development projects occurring in the local area will impact on people's perception of the environment and landscape surrounding them. The sense of place held by communities is likely to be altered over time, leading to concerns for future changes and increased levels of development occurring within their surroundings.

8.6 Aboriginal cultural heritage

8.6.1 Increased opportunities for connection to Country

Nearby projects considered in terms of cumulative impacts encompass a very large area of land which has been held privately for many years in recent history. These projects would also provide opportunities for First Nations communities to access the land, and enable them to build a broader understanding of the local area.

Encouraging First Nations community members and RAPs to be engaged in multiple projects in the area will facilitate a more meaningful understanding of cultural values of the area and opportunities for heritage interpretation.

8.6.2 Impacts to unknown sites or items of Aboriginal cultural significance

With the development of multiple renewable energy projects in the form of solar and wind farms in the South West REZ, there is likely to be a cumulative impact on Aboriginal heritage in the region. This is due to the extensive area of land affected by renewable energy projects likely to be developed in the region, coupled with other projects (for example, transmission line infrastructure projects). As such, multiple projects in the region would have some cumulative impact to Aboriginal cultural heritage.

8.7 Local population dynamics

As discussed in Section 8.3, this assessment has estimated that, based on projects identified in the DPHI Major Projects Planning Portal, in the order of 2,831 construction workers may be required during concurrent peak construction periods for projects in the region. If this scale of cumulative construction workforce occurs, it is likely to cause considerable impacts on the local population composition and may have implications to the general feeling of safety, wellbeing, and local identity amongst existing residents. Due to the limited supply of accommodation, it is assumed that many of the renewable energy proponents will adopt temporary accommodation facilities to house non-resident workers throughout construction.

9 Mitigation and management

This section provides a summary of the identified social impacts and benefits associated with development of the project. The corresponding significance is derived for each impact and benefit by considering the consequence and likelihood of each, using the framework provided in the SIA Technical Supplement (DPE 2021b). Mitigation, management, and enhancement measures are proposed for each impact and benefit, and the residual significance of each is reassessed assuming the effective implementation of these measures. Suggestions for the ongoing monitoring and management of these measures is also provided.

Not all potential impacts will be the responsibility of the proponent to mitigate or manage. Their role may be to cooperate or inform mitigation, provide data and information, or initiate partnerships with other stakeholders, through to direct responsibility for implementation of mitigation and management measures.

The development and implementation of a Social Impact Management Plan (SIMP) prior to construction would allow an adaptive and proportionate response to social impacts. The SIMP would aim to:

- describe desired project social outcomes
- outline post-approval engagement activities, including timing and purpose
- describe a feedback procedure that will allow feedback and timely response throughout construction and operation
- define targets to monitor performance over time, identify monitoring responsibilities, and methods to share outcomes.

The SIMP would include methods for engaging various stakeholders on their key interests to: manage impacts, enhance benefits, and provide suitable mechanisms for project feedback. Key stakeholders include Murrumbidgee and Edward River Councils, landowners, broader community, First Nations stakeholders, services and utilities, local businesses, and local workforces. Findings from the SIA have been informed by a robust and integrated consultation program, residual risks identified in Table 9.1 will form the basis of further engagement as outlined in Table 9.1.

An adaptive management approach to the implementation the SIMP is proposed, allowing Spark Renewables to manage and respond to changing circumstances and new information through ongoing monitoring and periodic review of mitigation strategies allowing for modification if required.

Provided in Table 9.1 is an overview of each social impact and benefit, associated mitigation and enhancement measures and the corresponding residual impact significance.

Table 9.1 Mitigation, management and enhancement measures and residual significance

Social impact theme	ID	Matter	Timing[12]	Perceived impact (unmitigated/ unenhanced)	Proposed mitigation, management, and/ or enhancement measures	Residual impact significance
Energy transition	T01	Positive influence on intergenerational equity	O	Medium (A2) **Benefit**	NA	Medium (A2) **Benefit**
	T02	Improved project outcomes through participation in decision-making processes	PC C O	Medium (B2) **Benefit**	The SIMP will include: • measures to ensure continued engagement with nearby and adjacent landholders, Murrumbidgee and Edward River Councils and other key stakeholders. Communicate and promote how input from stakeholders influences project planning, and ongoing mitigation/management measures • a complaints and grievance procedure • adaptive management of risks associated with changing views and sentiments over time.	High (B3) **Benefit**
Employment, training, and business	EC01	Increased opportunities for employment and training	C O	Medium (C2) **Benefit**	Develop and implement an industry participation plan (IPP), which will identify: • the approach to opportunities for supply of goods and services, employment and training, including Aboriginal participation, as well as sustainable procurement • metrics to track goals and requirements for each identified opportunity • engagement with Murrumbidgee and Edward River Councils, local businesses and the Coleambally Chamber of Commerce to inform an understanding of opportunities and limitations for procuring local goods and services, as well as aspirations amongst local businesses • online and offline methods to share and register interest in project opportunities. Develop an Aboriginal participation plan in consultation with First Nations stakeholders to optimise local capacity. Agreed commitments would be measurable, and a report of progress to the local First Nations community would contribute to the measurement of outcomes.	High (B3) **Benefit**
	EC02	Generation of income through procurement opportunities for local and regional businesses	C O	Medium (C2) **Benefit**		High (B3) **Benefit**

[12] PC = pre-construction; C = construction; O = operation, Dc = decommissioning

Table 9.1 Mitigation, management and enhancement measures and residual significance

Social impact theme	ID	Matter	Timing[12]	Perceived impact (unmitigated/ unenhanced)	Proposed mitigation, management, and/ or enhancement measures	Residual impact significance
	EC03	Generation of income through increased trade for retailers and hospitality businesses	C	Medium (C2) **Benefit**	Regular engagement (to be defined in the SIMP) with local businesses will advise of construction periods and the potential increase in trade or patronage. This will allow businesses with planning to maximise benefits of increased demand, and associated revenue. Encourage the project workforce, particularly during the construction phase, to support and contribute to the local and regional community through local spending. This may be done through project provided vouchers at local businesses, and promoting the local offering, such as on notice boards at the accommodation facility.	Medium (B2) **Benefit**
	EC04	Increased competition for labour and services	C	Medium (C3) **Impact**	As part of the IPP, engage with Murrumbidgee and Edward River Councils, local businesses and the Coleambally Chamber of Commerce to inform an understanding of opportunities and limitations for procuring local goods and services, as well as aspirations amongst local businesses.	Medium (C2) **Impact**
	EC05	Land use impacts on agribusinesses.	O	Medium (C2) **Impact**	Develop a Construction Environmental Management Plan (CEMP) to include weed and other biosecurity controls, and erosion prevention. Continuation of sheep and cattle grazing within the development footprint during operations.	Low (D2) **Impact**
Housing and access to services	HS01	Reduced access to health services for residents due to increased demand	C	Medium (C3) **Impact**	Regular engagement (t be defined in the SIMP) with the Murrumbidgee and Edward River Councils will identify potential service constraints. Measures such as provision of on-site medical facilities and identification of preferred telehealth providers will be implemented to prevent excessive demand on GP services closest to the site.	Medium (C2) **Impact**
	HS02	Reduced capacity of local waste management facilities due to project demand	C O DC	Medium (C2) **Impact**	Develop a WMP, identifying potential service limitations and implement measures for waste management.	Low (C1) **Impact**

Table 9.1 Mitigation, management and enhancement measures and residual significance

Social impact theme	ID	Matter	Timing[12]	Perceived impact (unmitigated/ unenhanced)	Proposed mitigation, management, and/ or enhancement measures	Residual impact significance
	HS03	Reduced availability of housing and accommodation	C	Low (C1) **Impact**	Temporary worker accommodation facilities will be used in preference to local short-term and rental accommodation. Local residents will be recruited for the construction workforce as far as possible.	Low (D1) **Impact**
Local amenity	L01	Loss of amenity due to changes to the visual landscape	O	High (B3) **Impact**	Subject to consultation with the landowner, supplementary planting at R019 will be implemented to reduce visual impacts at the dwelling.	Low (C1) **Impact**
	L02	Increased noise from construction activities and traffic	C	Medium (C2) **Impact**	Establish a complaints and grievance procedure. Implement construction noise mitigation measures.	Low (C1) **Impact**
	L03	Loss of amenity due to increased dust from construction activities and traffic	C	Medium (C2) **Impact**	Implement dust suppression measures. Establish a complaints and grievance procedure.	Low (C1) **Impact**
	L04	Ecological changes affecting cultural and community values	O	High (B4) **Impact**	Implement mitigation and offset measures identified in the BDAR.	Medium (B2) **Impact**
Cultural heritage	CH01	Increased opportunities for connection to Country	PC C O	Medium (C2) **Benefit**	Develop an Aboriginal participation plan in consultation with First Nations stakeholders to optimise local capacity and aspirations through targeted participation initiatives within the regional area. This would include setting targets for First Nations participation in the project workforce and procurement. Provide cultural awareness training to key site personnel. Implement the mitigation measures outlined in the ACHA including salvage requirements and monitoring of unexpected finds.	Medium (C3) **Benefit**

Table 9.1 Mitigation, management and enhancement measures and residual significance

Social impact theme	ID	Matter	Timing[12]	Perceived impact (unmitigated/ unenhanced)	Proposed mitigation, management, and/ or enhancement measures	Residual impact significance
	CH02	Potential impacts to sites, items, or places of Aboriginal cultural significance.	C	Medium (B2) **Impact**	Undertake ongoing stakeholder engagement with the local Aboriginal community and project RAPs. Implement the ACHMP which includes protocols for the ongoing care of salvaged Aboriginal objects and measures to ensure ongoing consultation and involvement of project RAPs, cultural awareness training and workforce awareness of the chance finds of significant cultural artefacts and protocols in the event of a find.	Medium (C2) **Impact**
Community, safety, and wellbeing	CS01	Changes local population dynamics due to the influx of workforces	C	Medium (C3) **Impact**	Encourage operation workers to contribute to the local community through volunteerism or other initiatives. A Community Engagement Plan and Worker Code of Conduct (as part of the SIMP) will be developed and implemented to address perceived public safety risks. The plan will include engaging with community services, such as police and emergency services, so that they are familiar with the project in case of an incident.	Medium (D3) **Impact**
	CS02	Perceived impact on safety due to generation of traffic	C	Medium (C2) **Impact**	Implement measures identified in the TIA including preparation of a Construction Traffic Management Plan and road upgrades. Community engagement to explain traffic impacts and proposed mitigation measures. Regular communication with nearby residents	Low (D2) **Impact**
	CS03	Perceived increased fire safety risk from the project	O	Medium (C2) **Impact**	Implement mitigation measures identified in the BAR. Engage with local residents to inform the community of the risk and mitigation measures that will be implemented.	Low (D2) **Impact**
	CS04	Potential concerns related to operational noise and vibration impacting biodiversity and health and wellbeing	O	Low (D2) **Impact**	Implement measures identified in the NIA and BDAR. Establish a complaints and grievance procedure.	Low (D1) **Impact**

Table 9.1 Mitigation, management and enhancement measures and residual significance

Social impact theme	ID	Matter	Timing[12]	Perceived impact (unmitigated/ unenhanced)	Proposed mitigation, management, and/ or enhancement measures	Residual impact significance
	CS05	Social cohesion and resilience arising from community benefit and investment	C, O	Medium (B2) **Benefit**	None proposed	Medium (B2) **Benefit**

10 Conclusion

This SIA supports the planning and approval process for the project. It has been prepared in accordance with the SEARs for the project as well as relevant regulatory assessment requirements, guidelines, and policies, including:

- the *Social Impact Assessment Guideline for State Significant projects* (DPE 2021a)
- the *Technical Supplement: Social Impact Assessment Guideline for State Significant Projects* (DPE 2021b)
- the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPE 2021d).

The SIA study areas were defined to reflect the geographic distribution of different types of social impacts and benefits. The local study area includes communities which directly surround the project and are most likely to experience direct social impacts. The regional study area was identified as the area which may experience broader socio-economic effects (Murrumbidgee LGA and Edward River LGA), and nearby regional communities of Coleambally, Jerilderie, Wagga Wagga, and Griffith are expected to experience service impacts and increased employment and business opportunities. Through primary and secondary research, this SIA has sought to identify social impacts and benefits associated with the construction and operation of the project across the social study areas.

The identified social impacts are largely associated with the demand for labour and the influx of the construction workforce which affects access to services, perceptions of safety and local community dynamics. Key social benefits are predominantly associated with project employment, training, and business opportunities relating to direct and indirect economic activity resulting from the project.

This SIA has also considered potential cumulative impacts. Acknowledging the significant increase in planned and existing projects in the South West REZ, there is a focus on understanding and planning for cumulative impacts across a number of key impact areas. This includes demand for labour and services, social infrastructure capacity, local housing, and accommodation capacity, as well as visual impacts contributing to a change in amenity in the local area.

Additional project design refinements have occurred as a result of stakeholder feedback and other studies undertaken for the EIS (see Table 7.2 of this report and Section 2.7.4 of the EIS). While these refinements have been made in consideration of respective study outcomes, they contribute to reducing potential social impacts (including avoidance of impacts to biodiversity and Aboriginal cultural heritage to the extent practicable and inclusion of an on-site accommodation facility to reduce demand on local housing and accommodation). As outlined in Section 9, an adaptive management approach is proposed, allowing Spark Renewables to manage and respond to changing circumstances and new information over time through ongoing monitoring and periodic review of mitigation strategies allowing for modification if required.

Abbreviations

Abbreviation	Meaning
ABS	Australian Bureau of Statistics
AC	alternating current
ACHA	Aboriginal Cultural Heritage Assessment
AHIMS	Aboriginal Heritage Information Management Information System
AHRC	Australian Human Rights Commission
AIHW	Australian Institute of Health and Welfare
APP	Aboriginal participation plan
BAR	Bushfire Assessment Report
BDAR	Biodiversity Development Assessment Report
BESS	battery energy storage system
CALD	culturally and linguistically diverse
CEMP	Construction Environmental Management Plan
CICL	Coleambally Irrigation Co-operative Limited
CSP	community strategic plan
CTMP	construction traffic management plan
CWO	Central-West Orana
DC	direct current
DPE	NSW Department of Planning and Environment
DPHI	NSW Department of Planning, Housing and Infrastructure
EIS	environmental impact statement
EMM	EMM Consulting Pty Limited
EnergyCo	Energy Corporation of NSW
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
ERC	Edward River Council
FTE	full-time employment
GHG	greenhouse gas
GP	general practitioner
GW	gigawatts
ha	hectares
IAIA	International Association for Impact Assessment
IPP	Industry participation plan

Abbreviation	Meaning
IEO	Index of Education and Occupation
IER	Index of Economic Resources
IFC	International Finance Corporation
IRSAD	Index of Relative Socio-Economic Advantage and Disadvantage
IRSD	Index of Relative Socio-Economic Disadvantage
km	kilometres
kV	kilovolts
LALC	Local Aboriginal Land Council
LEP	local environmental plan
LGA	local government area
LRA	Land and Rehabilitation Assessment
LSC	land and soil capability
LVIA	Land and Visual Impact Assessment
m	metres
MC	Murrumbidgee Council
MW	megawatts
MWh	megawatt hours
NSW	New South Wales
NRM	natural resource management
NIA	Noise Impact Assessment
O&M	operations and maintenance
PHA	Preliminary Hazards Assessment
Planning Systems SEPP	State Environmental Planning Policy (Planning Systems) 2021
PV	photovoltaic
RAP	registered Aboriginal party
REZ	renewable energy zone
SA1	Statistical Area 1
SA2	Statistical Area 2
SA3	Statistical Area 4
SAL	Suburbs and Localities
SEARs	Secretary's Environmental Assessment Requirements
SEIFA	Socio-Economic Indexes for Areas
SES	State Emergency Service

Abbreviation	Meaning
SIA	social impact assessment
SIA Guideline	Social Impact Assessment Guideline for State Significant Projects
SIA Technical Supplement 2021	Technical Supplement: Social Impact Assessment Guideline for State Significant Projects
Spark Renewables Pty Limited	Spark Renewables
SSD	State significant development
STE	State and Territory
SUA	Significant Urban Area
TEC	threatened ecological community
TIA	Traffic Impact Assessment
WMP	Waste Management Plan
WRA	Water Resources Assessment
WTG	wind turbine generator
YACTAC	Yanco Creek and Tributaries Advisory Council

Glossary

- **Project area**: The project area is the maximum area considered for the project based on the extent of land where Spark Renewables holds landholder agreements. The project area is approximately 39,061 ha and encompasses 349 land parcels (Figure 1.2). The majority of the land within the project area is privately owned, and can be considered as two distinct areas, the eastern wind area and the western wind area.

- **Development corridor:** The development corridor is the land within the project area where project components may be placed, providing the necessary flexibility for component placement during detailed design (i.e. micro-siting). The development corridor is wholly within the project area.

- **Development footprint**: The indicative extent of the project's ground disturbance area, including earthworks, associated with permanent infrastructure and temporary construction facilities. The development footprint will be within the development corridor; however, its exact location will be confirmed following detailed design.

- **Site access point**: The proposed locations where all construction and operation traffic will access the development footprint. Access across the development footprint will be possible via internal tracks.

- **Associated residence:** A dwelling whose owners have parts of their property included in a land agreement with Spark Renewables for the project (i.e. host landholder dwellings).

- **Non-associated residence**: A dwelling whose owners do not have parts of their property included in a land agreement with Spark Renewables for the project.

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Appendix A
SIA Guideline Response

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A.1 SIA Guideline Response

The SIA review questions as outlined in the SIA Guideline (DPE 2021a) and corresponding responses are presented in Table A.1.

Table A.1 Responses to SIA Guideline review questions

Reference number	SIA Guideline review question	Response
General		
1	Does the lead author of the SIA Report meet the qualification and experience requirements?	Yes – Section 1.2.1 and Appendix B
2	Has the lead author of the SIA Report provided a signed declaration certifying that the assessment does not contain false or misleading information?	Yes – Section 1.2.1
3	Would a reasonable person judge the SIA Report to be impartial, rigorous, and transparent?	Yes.
Project's social locality and social baseline		
4	Does the SIA Report identify and describe all the different social groups that may be affected by the project?	Yes – Sections 2.5 and 5
5	Does the SIA Report identify and describe all the built or natural features that have value or importance for people, and explain why people value those features?	Yes – Sections 2.1 and 5.1
6	Does the SIA Report identify and describe historical, current, and expected social trends or social changes for people in the locality, including their experiences with this project and other major development projects?	Yes – Sections 5 and 8
7	Does the social baseline study include appropriate justification for each element, and provide evidence that the elements reflect both relevant literature and the full diversity of views and potential experiences?	Yes – Sections 4.2, 5 and 6
8	Does the social baseline study demonstrate social-science research methods and explain any significant methodological or data limitations?	Yes – Sections 3 and 5
Identification and description of social impacts		
9	Does the SIA Report adequately describe potential social impacts (whether negative, positive, tangible, intangible, perceived, and/or cumulative) from the perspectives of how people may experience them, and explain the research used to identify them? Where the assessment is partially complete, and expected to be completed in Phase 2 SIA, has this been explained?	Yes – Sections 7 and 8
10	Does the SIA Report apply the precautionary principle to social impacts, and consider how they may be experienced differently by different people and groups (i.e. distributive equity)?	Yes – Sections 7 and 8
11	Does the SIA Report describe how the preliminary analysis influenced both the project design and EIS Engagement Strategy?	Yes – Section 4.3

Table A.1 Responses to SIA Guideline review questions

Reference number	SIA Guideline review question	Response
Community engagement		
12	Were the extent and nature of engagement activities appropriate and sufficient to canvass all relevant views, including those of vulnerable or marginalised groups?	Yes – Section 6
13	How have the views, concerns, and insights of affected and interested people influenced both the project design and each element of the SIA Report (i.e. the social baseline, predicting impacts, and mitigation/enhancement measures)?	Section 6 provides a discussion of impacts in context of who may be likely to experience them, and how/if this was informed by data gathered during SIA engagement
Predicting and analysing social impacts		
14	Does the SIA Report impartially focus on the most material social impacts at all stages of the project life cycle, without any omissions or misrepresentations?	Yes – Sections 6, 7 and 8
15	Does the SIA Report identify the matters to which the precautionary principle could or should be reasonably applied?	Yes – Section 9
16	Does the SIA Report analyse the distribution of both positive and negative social impacts, and the equity of this distribution?	Yes – Sections 7 and 8
17	Does the SIA Report identify its assumptions, and include sensitivity analysis and alternative scenarios (including 'worst-case' and 'no project' scenarios where relevant)?	Yes – Sections 7 and 8
Evaluating significance		
18	Do the evaluations of significance of social impacts impartially represent how people in each identified social group can expect to experience the project, including any cumulative effects?	Yes – Sections 6, 7, and 8
19	Are the evaluations of significance disaggregated to consider the potentially different experiences for different people or groups, especially vulnerable groups?	Yes – Sections 6, 7, and 8
Responses, monitoring and management		
20	Does the SIA Report propose responses (i.e. mitigations and enhancements) that are tangible, deliverable by the proponent, likely to be durably effective, and directly related to the respective impact(s)?	Yes – Section 9
21	How can people be confident that social impacts will be monitored and reported in ways that are reliable, effective, and trustworthy?	See Section 9
22	How will the proponent adaptively manage social impacts and respond to unanticipated events, breaches, grievances, and non-compliance?	See Section 9

Appendix B
Authors Curriculum vitae

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Chris Mahoney

Associate Director, National Technical Leader
EMM Consulting Pty Limited

Professional Overview

Chris is one of Australia's most experienced social analysts. With over 25 years' professional experience, Chris has delivered social and economic assessments, social analysis and advice for a multitude of major projects and policy initiatives.

Chris focusses is on providing practical, grounded research to find solutions to complex social problems and enable social opportunities to be realised. He is highly adept at managing the interface between governments, industry and the community to derive the best possible outcomes. He has had the opportunity to work in a diverse range of social settings, having led projects throughout Australia, the Pacific and Asia. As a qualified land use and social planner Chris has contributed to major infrastructure plans, development plans and land use planning policy. Chris also maintains operation of a family farm and is passionate about social opportunities for residents of rural and regional Australia.

Chris possesses exceptional social research skills which have been refined in the course of delivering over 150 complex social impact assessments and other forms of social analysis. He brings a technically skilled yet pragmatic approach which focuses on the realisation of optimal solutions for complex social problems. Chris fosters a highly collaborative approach to development and implementation of social risk mitigation and management and the adaptive management of social risk and opportunity.

Qualifications and licences

Master of Urban and Regional Planning (Environmental Planning), Griffith University

Bachelor of International Economic Relations, Griffith University

Member of the International Association of Impact Assessment (IAIA): Social Impact Assessment Group

Member of the Planning Institute of Australia (PIA)

Specialisation

Provision of Social Performance specialist advice

Delivery of Impact Assessments (SIA) for large projects

Provision of community engagement programs

Design and delivery of community development initiatives

Representative experience

- **Hunter Valley Operations (HVO) project,** Chris provided technical oversight across the SIA process as part of the EIS for continued operation and expansion of Glencore's HVO mine. The SIA included extensive engagement with a broad range of stakeholders including landholders, Aboriginal groups, nearby residents, horse studs and other agricultural enterprises. To understand the social impacts which would occur if HVO were to cease operations, research was undertaken with the existing operations workforce and local and regional businesses which provide goods and services to the project. The SIA was delivered in accordance with the NSW SIA Guideline.
- **Cowal Gold Open Pit Continuation project,** Chris provided oversight in the delivery of all aspects of the SIA for the continuation of open pit mining at Cowal Gold mine which is located near West Wyalong and Forbes in southern NSW. Chris designed and delivered the engagement program that underpinned the SIA which included extensive liaison with neighboring landholders, interviews with elected representatives, peak industry bodies, Aboriginal groups, service providers, environmental and other special interest groups. A focus of the SIA was impacts on the availability of accommodation during peak construction. Chris undertook extensive engagement with accommodation providers to derive an accommodation strategy which met the requirements of the project and benefited local accommodation providers, whilst maintaining availability for community and tourism purposes.
- **Winchester South project,** lead author and project manager of the social impact assessment and social impact management plan for a proposed coal project involving developing comprehensive suite of management plans relating to housing and accommodation, workforce management, local industry procurement and community health and wellbeing, Central Queensland (Whitehaven Coal).
- **Meadowbrook project**, lead author and project manager for delivery of the social impact assessment and social impact management plan for the underground expansion of the existing Lake Vermont coal mine. A focus of the SIA was analysis of the social opportunity cost of the project not proceeding and the subsequent closure of open cut operations. Project included a targeted program of stakeholder engagement informed the development of social commitments measures formalised through the social impact management plan, Central Queensland (Jellinbah Resources).
- **Valeria project,** Chris provided technical oversight of the social impact assessment and associated social impact management plan along with strategic communications and engagement support to the project. Completion of a detailed assessment of housing and accommodation options including potential utilization of the Glencore occupied township of Tieri. Implementation of an engagement program which included requirements for the Progressive Rehabilitation and Closure Plan (PRCP). Central Queensland (Glencore).
- **Isaac Downs Coal project**, author of the social impact assessment and social impact management plan in the EIS for a greenfield coal project, competed a detailed assessment of land use compatibility and potential conflict, Central Queensland (Stanmore Coal).

- **The Oven Mountain Pumped Hydro Energy Storage** project is situated in the New England Renewable Energy Zone and will provide reliable energy generation and storage capability with reservoirs able to store water for up to 12 hours of energy generation. Chris provided technical oversight of the Social Impact Assessment (SIA). This was informed by an extensive community and stakeholder engagement program which included two public surveys and interviews with over 50 key stakeholders. The SIA met all requirements of the NSW Social Impact Assessment Guideline (2021).
- **Warragamba Dam project,** Chris was the lead author of the Socio-economic Impact Assessment (SEIA) for this contentious project. Chris designed and delivered a stakeholder engagement program to inform the SEIA involving 9 local government authorities, more than 80 different business interests and 250 representatives of community interests. The SEIA included a rigorous assessment of social vulnerability across a study area of more than 2 million people. NSW (Water Infrastructure NSW).
- **The McPhillamys Gold project** was approved by the NSW Independent Planning Commission in 2023. The project includes a proposed open cut gold mine, associated mine infrastructure, and a water supply pipeline. Chris provided expert peer review to support the SIA. The main source of stakeholder concern was the proximity of the proposed mine to a number of rural residential properties in the locality of Kings Plains, immediately south of the proposed mine site. In the course of the assessment process, the project design was altered significantly to reduce amenity related impacts on the residents of Kings Plains which was instrumental in the project gaining regulatory approval.
- **Muswellbrook Solar project,** ESCO Pacific in partnership with Idemitsu Australia is developing a large-scale solar photovoltaic generation facility and associated infrastructure. The site is located approximately 2.5 km east of Muswellbrook, adjacent to the Muswellbrook Coal Mine, on land owned by Idemitsu, Chris was the technical lead for the Social Impact Assessment (SIA) completed as part of the Environmental Impact Statement (EIS). The SIA was delivered in full accordance with the requirements of the *NSW Social Impact Assessment Guideline (2021*. With the completion of coal mining the Muswellbrook Solar Project provides an opportunity to redevelop the site and generate post-mine investment and employment in the region.
- **Ravenswood Gold project**, update and revision of the social impact management plan to align with the requirements of the Queensland Social Impact Assessment Guideline (2018) and document the current social context and community sentiment towards the project's planned transition. A primary objective was to design a SIMP which is a useable adaptive management tool, providing the rationale and schedule of delivery for investments in community infrastructure and other initiatives which serve to ensure the ongoing sustainability of the Ravenswood township, Central Queensland (Ravenswood Gold).
- **ARTC Inland Rail project**, provided specialist technical assessments and expert advice as lead advisor, review of social and economic impact assessments, community development and social management plans, overseeing the development of frameworks supporting the projects monitoring and evaluation program, National (ARTC).
- **MacIntyre Wind Farm**, the MacIntyre Wind Farm is one of the largest onshore wind farms in the world. With a total investment of AU$1.96 billion, the 1,026 MW MacIntyre Wind Farm Precinct is Acciona's biggest renewable energy facility. Chris was commissioned to complete a full technical review of the Social Impact Assessment and Social Impact Management Plan (SIMP) which comprised sub-plans dedicated to Workforce Management, Local Industry and Procurement, Community Health and Wellbeing, Housing and Accommodation and Community and Stakeholder Engagement. Chris also participated in the establishment of the MacIntyre Community Consultative Committee.
- **Telfer Mine**, socio-economic baseline assessment of Traditional Owners of lands surrounding the mine which involved primary data collection in remote Aboriginal communities, included the preparation of a business development plan to assist in meeting ILUA obligations, Pilbara Region WA (Newcrest Mining).
- **Wafi Golpu project**, lead social performance advisor for the approvals phase of the project, responsible for the delivery of the Socio-economic Baseline and Socio-economic Impact Assessment in accordance with national and international standards, development of social management plans relating to community development, in-migration management and re-settlement, Papua New Guinea (Newcrest/Harmony Gold).
- **Salisbury to Beaudesert Corridor Protection Study**, project manager for the delivery of engineering design and consultation programs to support the gazettal of a transport and infrastructure corridor of 70 km connecting Brisbane to high population growth which stretch to the south through to Beaudesert. Delivery of the project involved development of innovative engagement mechanics such as interactive web-based tools and collateral and direct engagement methods to refine project design and enable gazettal of the corridor (Department of Transport and Main Roads).
- **Coal Infrastructure Masterplan**, Chris was the author of the 'social effects' chapter in the coal infrastructure master plan, Queensland (Department of the Coordinator General).
- **Cross River Rail project** – community infrastructure assessments, Chris was the lead social planner advising on the community infrastructure elements of the project precincts, preparation of detailed baseline assessments and negotiation with stakeholders, Brisbane Queensland (Cross River Rail Development Authority).
- **South East Queensland Priority Infrastructure Plan**, preparation of policy guiding the delivery of essential infrastructure to service a region comprising 2.5 million people, involved extensive population modelling and collaborative policy development (Queensland Department of Planning).
- **Moreton Bay Regional Public Transport Strategy**, Chris provided expert social opinion and advice along with facilitating workshops and other stakeholder engagement activities which informed development of the Moreton Bay Regional Public Transport Strategy (Moreton Bay Regional Council).
- **Social Infrastructure Model**, development of a GIS-based social infrastructure model to determine social infrastructure gaps and the prediction of social infrastructure requirements in line with growth across the Mackay Regional Council area. Included the prediction of costs and an outline of delivery options (Mackay Regional Council).

- **North Coast Connect Faster Rail**, Chris was the Social Technical Lead for the North Coast Connect Consortium which delivered the Business Case for a fast rail service between Brisbane and the Sunshine Coast. He was responsible for the delivery of the Service Needs and Social Risk Assessment, the Social chapter of the Feasibility Study and Business Case along with technical oversight across all social inputs to options assessments and design considerations. (NCC Consortium).

Myf Jagger

Associate Director – Social Scientist
EMM Consulting Pty Limited

Professional Overview

Myf is a highly credentialed Social Sustainability Lead with well-established analytical, advisory, and engagement expertise earned on a range of complex projects across Queensland and New South Wales. For over 15 years, Myf has worked with client and project teams to deliver a range of social and health technical assessments. Myf has worked with multi-nationals, major infrastructure projects, government agencies, first nations organisations and non-profits.

Her services include Social Impact Assessment, Social Impact Management Plans, Community Needs and Population Health Assessments, Social Compliance Reports, First Nations Participation Plans, Community Wellbeing Plans, and Workforce and Accommodation Management Plans. Myf continues to deliver a broad range of qualitative research programs, including social scoping surveys, community liveability and workforce surveys; semi-structured interviews; focus groups; and workshops and other tailored strategies to inform project planning assessment and approvals.

As Social Performance Principal with Inland Rail, Myf had oversight of five Social Impact Assessments for major projects in Queensland and NSW. She led a team of Social Performance and First Nations Engagement Advisors to integrate social impact management and First Nations participation strategies across Inland Rail's EIS, Project Delivery, Contractor Management, and corporate functions.

Qualifications and licences

Master of Environment (Education for Sustainability), Griffith University 2011

Bachelor of Arts (Film/Media Analysis), Griffith University 2008

Community Development in the Resources Sector, 2010, CSRM

IAP2 Engagement Essentials, 2019

New Leader, Australian Institute of Mana gement 2023

Specialisation

SIA & SIMP development

Social performance management

Community & stakeholder engagement

Social research, evaluation and advisory

Representative experience

Social impact assessment and social impact management planning

- NSW Hunter Valley Underground Mining Projects, Social Impact Assessment and Social Impact Management Plan, 2015 and 2019 – baseline and consultation (including workforce and community liveability surveys), community wellbeing plans. In 2019, Myf worked with Malabar Coal to develop the baseline, engagement program and preliminary impact assessment (Malabar Coal).
- NSW Gunnedah Basin Mining (and Rail) Projects, Social Impact Assessment and Social Impact Management Plan – social baseline and impact assessment, landholder and community consultation, development of mitigations, and updates to an operational SIMP (Whitehaven).
- NSW Dendrobium Mine Expansion – social research and consultation for mine expansion proposal (South32).
- Inland Rail North Star to Kagaru, SIA Consultant – SIA development, community and stakeholder consultation and design of social impact mitigation and enhancement strategies.

Social Performance

- Inland Rail Social Performance Program (north of Narromine) – oversight of seven Major Project Social Impact Assessments, negotiation of Contractor Delivery Plans and targets and SIMP Design of social monitoring frameworks and commissioning of independent liveability surveys. Myf also delivered workforce and business development programs, First Nations Engagement Strategies and brokered strategic partnerships in readiness for project delivery.
- QLD New Hope Group Social Performance Consultant – social performance advisory and reporting services. Key deliverables included regulatory Social Impact Management Reports for New Acland Stage 3 Project (NAC03 Project), a tracking and reporting system for the Project's EIS approval conditions and commitments, analysis for NAC03 Community Needs and Resources Assessment, SIMP implementation plans, social policy standards and ongoing social impact and risk assessment for emerging projects.
- Jabree Ltd and Njamal People's Trust, Social Performance & Comms – provided communication and social performance support to Njamal People of the Pilbara Region and Yugambeh People of Gold Coast Region including development of newsletters, annual reports, websites, branding, grant administration, business capability support, and community events.
- Coopers Gap Wind Farm Project, Senior Consultant – developed the Project's Community Health and Wellbeing Plan involving workforce and housing data analysis and informed by agency consultation. Myf also prepared the Project's first regulatory Social Impact Management Report.
- Queensland Curtis LNG, Land and Social Performance Advisor – supported SIMP implementation through integrated Land and Social Performance Advisory services to Project and Asset management teams (BG Group/QGC).

Other projects

- Population Health and Comprehensive Needs Assessment – triangulating quantitative and qualitative data to deliver the 2014/15 Comprehensive Needs Assessment. Working with the Medicare Local to develop a social indicator project to monitor change in social determinants of health in the Metro North Brisbane region (Brisbane North PHN / Medicare Local).

- Mental Health and Alcohol and Other Drugs Service Needs Assessment – triangulating quantitative and qualitative data to deliver service needs assessments.

Appendix C
Social impact significance rating

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C.1 Social impact significance rating

Likelihood level	Meaning
Almost certain	Definite or almost definitely expected (e.g. has happened on similar projects)
Likely	High probability
Possible	Medium probability
Unlikely	Low probability
Very unlikely	Improbable or remote probability

Source: SIA Guideline Technical Supplement, Social impact significance matrix

Figure C.1 Defining likelihood levels of social impacts

Dimensions		Details needed to enable assessment
Magnitude	**Extent**	Who specifically is expected to be affected (directly, indirectly, and/or cumulatively), including any vulnerable people? Which location(s) and people are affected? (e.g. near neighbours, local, regional, future generations).
	Duration	When is the social impact expected to occur? Will it be time-limited (e.g. over particular project phases) or permanent?
	Intensity or scale	What is the likely scale or degree of change? (e.g. mild, moderate, severe)
	Sensitivity or importance	How sensitive/vulnerable (or how adaptable/resilient) are affected people to the impact, or (for positive impacts) how important is it to them? This might depend on the value they attach to the matter; whether it is rare/unique or replaceable; the extent to which it is tied to their identity; and their capacity to cope with or adapt to change.
	Level of concern/interest	How concerned/interested are people? Sometimes, concerns may be disproportionate to findings from technical assessments of likelihood, duration and/or intensity.

Source: SIA Guideline Technical Supplement, Social impact significance matrix

Figure C.2 Dimensions of social impact magnitude

Magnitude level	Meaning
Transformational	Substantial change experienced in community wellbeing, livelihood, infrastructure, services, health, and/or heritage values; permanent displacement or addition of at least 20% of a community.
Major	Substantial deterioration/improvement to something that people value highly, either lasting for an indefinite time, or affecting many people in a widespread area.
Moderate	Noticeable deterioration/improvement to something that people value highly, either lasting for an extensive time, or affecting a group of people.
Minor	Mild deterioration/improvement, for a reasonably short time, for a small number of people who are generally adaptable and not vulnerable.
Minimal	Little noticeable change experienced by people in the locality.

Source: SIA Guideline Technical Supplement, Social impact significance matrix

Figure C.3 Defining magnitude levels for social impacts

Appendix D
Baseline study indicators

EMM
creating opportunities

D.1 ABS 2021 census data tables, study area

Table D.1 Study area ABS Census Data, 2021

Indicator	Local study area	Coleambally	Jerilderie	Wagga Wagga	Griffith	Deniliquin	Nearby regional communities total	Regional study area	Area of reference	New South Wales
POPULATION										
2021 population	407	1152	922	57003	20569	7038	86,684	11,809	123,552	8,072,163
2016 population	427	1331	1029	54411	19144	7434	83,349	12,687	115,803	7,480,228
2011 population	553	1311	1070	52042	17900	7120	79,443	12,417	110,317	6,917,658
Population change 2016–2021	-4.7%	-13.4%	-10.4%	4.8%	7.4%	-5.3%	4.0%	-6.9%	6.7%	7.9%
Population change 2011–2021	-26.4%	-12.1%	-13.8%	9.5%	14.9%	-1.2%	9.1%	-4.9%	12.0%	16.7%
Indigenous status (#)	407	49	49	3976	1195	383	5,652	700	5,002	278,043
Indigenous status (%)	5.2%	4.3%	5.3%	7.0%	5.8%	5.4%	6.5%	5.9%	4.0%	3.4%
Same address 1 year ago	87.5%	82.2%	74.6%	77.9%	80.1%	77.5%	78.4%	78.3%	78.2%	79.4%
Same address 5 years ago	50.0%	63.1%	57.8%	50.2%	53.5%	56.9%	51.8%	58.7%	54.3%	14.8%
Different address 1 year ago	0.0%	9.7%	12.0%	16.6%	12.7%	12.4%	15.2%	11.5%	13.7%	53.9%
Different address 5 years ago	0.0%	28.7%	28.7%	43.8%	38.8%	32.0%	41.3%	30.4%	37.2%	39.9%
AGE AND SOCIO-CULTURAL CHARACTERISTICS										
Males	54.8%	51.7%	51.3%	48.1%	49.6%	48.3%	48.6%	50.1%	49.3%	49.4%
Females	47.2%	47.9%	48.7%	51.9%	50.4%	51.7%	51.4%	49.9%	50.7%	50.6%
Median age (2021)	-	43	51	36	37	47	-	-	44	39
0–14 years (children)	22.9%	18.8%	16.7%	20.0%	19.3%	16.4%	19.5%	17.4%	18.0%	18.2%

Table D.1 Study area ABS Census Data, 2021

Indicator	Local study area	Coleambally	Jerilderie	Wagga Wagga	Griffith	Deniliquin	Nearby regional communities total	Regional study area	Area of reference	New South Wales
15–24 years (youth)	8.8%	10.6%	6.7%	14.1%	11.6%	10.7%	13.1%	10.3%	10.8%	11.8%
25–64 years (adult)	51.4%	51.0%	45.6%	48.4%	52.4%	46.3%	49.2%	48.4%	47.8%	45.1%
65+ years (elderly)	15.7%	19.8%	28.6%	17.5%	16.6%	26.3%	18.2%	24.0%	23.4%	17.6%
Married	37.5%	53.8%	48.4%	44.0%	49.8%	43.3%	45.5%	46.3%	47.4%	47.3%
Couple Families with children	53.6%	41.3%	29.8%	41.1%	44.3%	33.2%	41.1%	35.7%	37.2%	44.7%
Families without Children	43.8%	45.8%	52.2%	38.7%	37.8%	49.5%	39.6%	48.7%	46.1%	37.9%
One parent families with Children	2.7%	11.0%	12.7%	18.6%	16.1%	15.5%	17.6%	14.1%	15.5%	15.8%
Other families	0.0%	1.3%	2.2%	1.6%	1.6%	1.8%	1.6%	1.5%	1.3%	1.6%
Family households	89.6%	69.2%	62.0%	66.9%	70.6%	62.4%	67.4%	64.8%	66.8%	71.2%
Group households	0.0%	0.9%	3.3%	3.9%	3.3%	2.5%	3.6%	2.3%	2.8%	3.8%
Lone person households	10.4%	31.2%	35.0%	29.2%	26.1%	34.9%	29.0%	33.0%	30.4%	25.0%
English only spoken at home	87.5%	89.3%	84.4%	85.2%	65.8%	87.5%	80.8%	87.4%	86.9%	67.6%
Non-English language spoken at home	0.0%	3.7%	4.0%	9.9%	27.6%	3.2%	13.4%	3.4%	5.8%	22.4%
Speaks English not well or not at all	0.0%	0.3%	0.7%	1.7%	5.8%	0.4%	2.6%	0.3%	0.9%	4.5%

Table D.1 Study area ABS Census Data, 2021

Indicator	Local study area	Coleambally	Jerilderie	Wagga Wagga	Griffith	Deniliquin	Nearby regional communities total	Regional study area	Area of reference	New South Wales
LABOUR MARKET AND INCOME										
Labour force characteristics										
Labour force count	244	639	391	28,811	10,655	3,170	43,666	5,616	57,892	3,874,012
Labour force participation rate	76.3%	67.8%	51.5%	63.2%	64.2%	53.9%	62.6%	57.6%	57.2%	58.7%
Youth	0.0%	8.4%	8.1%	8.4%	6.8%	9.4%	8.1%	9.0%	8.1%	59.3%
Unemployment characteristics										
Unemployment count	3	13	14	1281	352	129	1,789	189	2,338	189,852
Unemployment rate	1.2%	2.0%	3.6%	4.4%	3.3%	4.1%	4.1%	3.4%	4.0%	4.9%
Youth	0.0%	8.4%	8.1%	8.4%	6.8%	9.4%	8.1%	9.0%	8.1%	9.8%
Occupations										
Managers	53.8%	36.1%	20.9%	10.9%	12.8%	12.2%	11.9%	22.5%	16.1%	14.6%
Professionals	5.7%	12.3%	10.2%	21.3%	14.1%	16.1%	18.9%	13.1%	16.4%	25.8%
Technicians and trades workers	7.3%	9.0%	12.8%	14.4%	13.3%	14.4%	14.1%	12.1%	14.2%	11.9%
Community and personal service workers	2.8%	7.4%	8.4%	14.5%	9.8%	14.9%	13.2%	11.7%	12.4%	10.6%
Clerical and administrative workers	12.1%	11.8%	13.4%	11.7%	10.8%	11.8%	11.5%	11.3%	11.5%	13.0%
Sales workers	1.6%	2.0%	8.1%	9.5%	9.0%	9.0%	9.2%	6.8%	8.4%	8.0%
Machinery operators and drivers	4.0%	8.5%	10.2%	5.4%	6.8%	7.2%	6.0%	7.8%	7.2%	6.0%
Labourers	10.9%	10.7%	12.0%	10.6%	20.9%	11.5%	13.2%	12.5%	12.0%	8.2%

Table D.1 Study area ABS Census Data, 2021

Indicator	Local study area	Coleambally	Jerilderie	Wagga Wagga	Griffith	Deniliquin	Nearby regional communities total	Regional study area	Area of reference	New South Wales
Industry of employment										
Agriculture, forestry and fishing	0.0%	45.8%	30.4%	2.1%	9.8%	7.8%	5.3%	23.3%	10.2%	0.0%
Mining	0.0%	0.9%	0.0%	0.3%	0.2%	0.1%	0.3%	0.2%	0.4%	0.0%
Manufacturing	0.0%	3.6%	3.1%	6.0%	19.7%	5.4%	9.3%	5.4%	7.9%	0.0%
Electricity, gas, water and waste services	0.0%	1.6%	2.4%	1.3%	1.4%	3.0%	1.4%	2.4%	1.0%	0.0%
Construction	0.0%	6.9%	4.7%	8.7%	6.8%	7.9%	8.1%	6.6%	9.4%	0.0%
Wholesale trade	0.0%	1.6%	1.8%	2.3%	2.7%	2.4%	2.4%	2.2%	2.3%	0.0%
Retail trade	0.0%	2.7%	11.8%	10.2%	10.3%	10.0%	10.1%	8.0%	9.3%	0.0%
Accommodation and food services	0.0%	3.8%	3.1%	7.2%	5.3%	7.2%	6.7%	5.8%	7.2%	0.0%
Transport, postal and warehousing	0.0%	4.9%	3.1%	3.6%	2.6%	3.9%	3.4%	3.7%	4.4%	0.0%
Information media and telecommunications	0.0%	0.0%	0.0%	0.8%	0.5%	0.7%	0.7%	0.6%	0.6%	0.0%
Financial and insurance services	0.0%	1.3%	0.0%	1.6%	1.2%	1.7%	1.5%	1.3%	1.3%	0.0%
Rental, hiring and real estate services	0.0%	0.5%	0.0%	1.0%	0.8%	0.6%	0.9%	0.6%	1.0%	0.0%
Professional, scientific and technical services	0.0%	1.1%	1.8%	4.1%	3.5%	3.7%	3.9%	2.8%	3.5%	0.0%
Administrative and support services	0.0%	1.4%	1.3%	3.3%	2.7%	2.5%	3.0%	2.1%	2.7%	0.0%
Public administration and safety	0.0%	1.7%	11.0%	8.5%	4.1%	7.1%	7.2%	6.1%	6.2%	0.0%
Education and training	0.0%	10.2%	5.0%	11.0%	6.4%	8.8%	9.6%	8.0%	8.9%	0.0%

Table D.1 Study area ABS Census Data, 2021

Indicator	Local study area	Coleambally	Jerilderie	Wagga Wagga	Griffith	Deniliquin	Nearby regional communities total	Regional study area	Area of reference	New South Wales
Health care and social assistance	75.0%	6.6%	10.5%	19.0%	12.1%	17.5%	16.9%	13.2%	15.0%	75.0%
Arts and recreation services	0.0%	0.0%	1.3%	0.8%	0.8%	1.2%	0.8%	0.8%	1.0%	0.0%
Other services	0.0%	2.4%	3.1%	4.4%	3.5%	4.1%	4.1%	3.4%	3.5%	0.0%
Income										
Individual median weekly income ($)	-	841	694	814	833	688	-	-	724	813
Household median weekly income ($)	-	1,555	1,166	1,574	1,699	1,199	-	-	1,341	1,829
EDUCATIONAL ATTAINMENT AND QUALIFICATIONS										
Highest year of school completed										
Year 12 or equivalent	31.1%	41.9%	39.3%	52.2%	47.9%	38.7%	46.6%	35.9%	41.0%	63.3%
Year 11 or equivalent	15.9%	9.0%	12.8%	7.4%	7.0%	11.8%	7.3%	10.2%	11.8%	5.3%
Year 10 or equivalent	35.8%	34.9%	29.6%	28.2%	29.1%	30.7%	26.9%	27.6%	25.2%	21.2%
Year 9 or equivalent	14.6%	9.3%	9.7%	6.6%	6.5%	10.9%	6.6%	8.9%	7.7%	5.1%
Year 8 or below	0.0%	3.8%	7.8%	4.5%	7.6%	7.4%	5.1%	6.2%	5.1%	3.9%
Did not go to school	0.0%	0.4%	0.0%	1.0%	2.0%	0.6%	1.1%	0.5%	0.6%	1.3%
Education institution attendance										
Preschool	11.4%	9.8%	6.8%	7.6%	7.6%	5.9%	7.5%	6.7%	7.2%	6.8%
Infants/Primary	53.4%	31.5%	22.4%	27.3%	28.4%	24.8%	27.4%	25.7%	27.2%	26.5%
Secondary	20.5%	18.9%	13.7%	21.2%	21.3%	19.9%	21.0%	19.7%	21.2%	20.9%

Table D.1 Study area ABS Census Data, 2021

Indicator	Local study area	Coleambally	Jerilderie	Wagga Wagga	Griffith	Deniliquin	Nearby regional communities total	Regional study area	Area of reference	New South Wales
Technical or further educational institution	5.7%	7.9%	5.7%	9.8%	8.5%	8.7%	9.4%	7.8%	8.6%	8.5%
University or other tertiary institution	9.1%	4.4%	6.1%	15.0%	6.8%	5.6%	12.2%	5.1%	7.3%	15.3%
Other type of education institution	0.0%	2.2%	1.5%	2.1%	2.5%	1.2%	2.1%	1.7%	2.1%	3.0%
Qualifications										
Postgraduate Degree Level	0.0%	3.7%	3.2%	6.5%	5.2%	3.1%	5.9%	3.0%	4.2%	11.5%
Graduate Diploma and Graduate Certificate Level	0.0%	4.3%	1.7%	3.7%	2.2%	3.0%	3.3%	2.9%	3.3%	3.2%
Bachelor Degree Level	14.7%	18.5%	16.5%	22.6%	20.6%	14.9%	21.4%	16.2%	18.3%	28.8%
Advanced Diploma and Diploma Level	7.7%	13.1%	13.6%	13.7%	12.9%	13.2%	13.5%	13.5%	14.3%	14.6%
Certificates	14.4%	42.1%	36.7%	39.7%	38.9%	41.4%	39.7%	40.6%	40.8%	28.3%
Fields of study										
Natural and Physical Sciences	0.0%	2.1%	0.0%	2.2%	2.3%	0.7%	2.1%	1.1%	1.3%	2.9%
Information Technology	0.0%	0.8%	0.0%	1.8%	2.5%	0.8%	1.8%	0.8%	1.3%	4.0%
Engineering and Related Technologies	0.0%	17.0%	15.8%	12.1%	14.5%	13.9%	12.8%	14.2%	13.9%	12.9%
Architecture and Building	0.0%	3.9%	2.7%	6.1%	5.8%	5.4%	5.9%	4.4%	5.8%	5.3%
Agriculture, Environmental and Related Studies	0.0%	11.3%	8.5%	3.6%	3.5%	5.2%	3.8%	8.7%	5.2%	1.8%
Health	0.0%	8.4%	10.9%	13.5%	9.2%	10.3%	12.2%	9.8%	11.3%	9.5%
Education	0.0%	12.3%	7.8%	9.7%	7.6%	8.6%	9.1%	8.7%	9.0%	7.4%

Table D.1 Study area ABS Census Data, 2021

Indicator	Local study area	Coleambally	Jerilderie	Wagga Wagga	Griffith	Deniliquin	Nearby regional communities total	Regional study area	Area of reference	New South Wales
Management and Commerce	0.0%	12.5%	12.9%	17.6%	17.3%	13.7%	17.1%	13.7%	15.0%	21.8%
Society and Culture	0.0%	7.0%	6.3%	11.2%	8.9%	10.0%	10.5%	8.8%	10.1%	11.8%
Creative Arts	0.0%	1.6%	1.0%	2.6%	1.7%	1.6%	2.3%	1.5%	1.9%	4.2%
Food, Hospitality and Personal Services	0.0%	4.5%	4.6%	5.6%	5.6%	5.5%	5.6%	5.0%	5.9%	4.4%
Mixed Field Programmes	0.0%	0.0%	0.0%	0.3%	0.2%	0.1%	0.3%	0.1%	0.2%	0.2%
Field of study inadequately described	0.0%	0.6%	0.7%	1.3%	1.9%	1.0%	1.4%	1.0%	1.2%	1.4%
Field of study not stated	0.0%	17.9%	26.0%	12.4%	19.0%	23.5%	15.0%	22.6%	18.0%	12.4%
HOUSING AND SHORT-TERM ACCOMMODATION										
Dwellings										
Private Dwellings	132	495	424	23,129	7,773	3,235	35,056	5,345	54,003	3,199,988
Occupied Dwellings (#)	127	439	363	21,419	7,182	2,854	32,257	4,622	47,684	2,900,468
Unoccupied Dwellings (#)	5	52	65	1,705	592	391	2,805	714	6,322	299,524
Occupied Dwellings (%)	96.2%	88.7%	85.6%	92.6%	92.4%	88.2%	92.0%	86.5%	88.3%	90.6%
Unoccupied Dwellings (%)	3.8%	10.5%	15.3%	7.4%	7.6%	12.1%	8.0%	13.4%	11.7%	9.4%
Tenure										
Owned outright	44.1%	41.2%	47.1%	29.4%	31.3%	40.4%	31.2%	40.4%	37.8%	31.5%
Owned with a mortgage	22.8%	23.7%	25.6%	32.7%	27.9%	29.3%	31.1%	28.1%	30.7%	32.5%
Rented	8.7%	24.6%	19.3%	34.5%	36.3%	26.5%	33.9%	24.3%	26.4%	32.6%

Table D.1 Study area ABS Census Data, 2021

Indicator	Local study area	Coleambally	Jerilderie	Wagga Wagga	Griffith	Deniliquin	Nearby regional communities total	Regional study area	Area of reference	New South Wales
Other tenure type	15.0%	8.4%	2.8%	2.0%	2.2%	1.2%	2.1%	4.6%	2.9%	1.9%
Social housing (based on number of rented private dwellings)	0.0%	5.6%	21.4%	14.6%	14.1%	13.9%	14.4%	11.9%	10.8%	12.8%
Dwelling Structure (% total occupied dwellings)										
Separate house	0.0%	91.8%	92.0%	83.9%	80.4%	88.4%	83.7%	91.0%	86.1%	65.6%
Semi-detached, row or terrace house, townhouse etc. with:	0.0%	0.7%	4.1%	5.4%	5.7%	9.8%	5.7%	6.5%	11.8%	11.7%
Flat or apartment:	0.0%	4.8%	2.8%	10.3%	12.4%	0.6%	9.7%	1.3%	1.1%	21.7%
Other dwelling:	0.0%	1.6%	0.0%	0.3%	1.1%	0.5%	0.5%	0.4%	0.6%	0.7%
Housing affordability										
Median mortgage repayment ($/monthly)	-	867	842	1,517	1,500	1,083	-	-	1,300	2,167
Median rent ($/weekly)	-	180	175	300	300	230	-	-	250	420
Households earning less than $650 per week	8.1%	11.4%	24.5%	16.4%	14.9%	21.8%	16.6%	20.1%	20.0%	15.3%
HEALTH AND COMMUNITY WELLBEING										
Arthritis	8.3%	12.2%	12.7%	9.6%	7.9%	13.0%	9.5%	12.3%	11.3%	8.4%
Asthma	10.8%	11.5%	13.2%	11.4%	8.8%	10.4%	10.8%	10.9%	10.0%	7.8%
Cancer (including remission)	0.9%	3.7%	2.9%	3.2%	2.6%	3.6%	3.1%	3.4%	3.6%	2.8%
Dementia (including Alzheimer's)	0.0%	0.3%	0.0%	0.9%	0.9%	1.3%	0.9%	0.9%	0.9%	0.8%

Table D.1 Study area ABS Census Data, 2021

Indicator	Local study area	Coleambally	Jerilderie	Wagga Wagga	Griffith	Deniliquin	Nearby regional communities total	Regional study area	Area of reference	New South Wales
Diabetes (excluding gestational diabetes)	2.2%	4.7%	5.7%	4.9%	4.8%	6.0%	5.0%	5.6%	5.3%	4.8%
Heart disease (including heart attack or angina)	2.0%	3.9%	5.9%	4.0%	3.3%	5.6%	4.0%	5.0%	5.2%	3.9%
Kidney disease	0.7%	1.0%	1.3%	1.3%	0.7%	1.2%	1.1%	1.1%	1.2%	1.0%
Lung condition (including COPD or emphysema)	2.0%	2.0%	3.6%	2.3%	1.6%	2.9%	2.2%	2.9%	2.4%	1.7%
Mental health condition (including depression or anxiety)	4.6%	6.2%	7.4%	10.7%	7.2%	10.5%	9.8%	9.4%	10.2%	8.0%
Stroke	0.0%	0.6%	0.9%	1.0%	0.9%	1.2%	1.0%	1.2%	1.2%	0.9%
Any other long-term health condition(s)	4.0%	6.7%	6.3%	7.9%	5.9%	8.0%	7.4%	7.3%	7.6%	7.8%
No long-term health condition(s)	54.2%	53.6%	50.7%	56.1%	61.1%	49.4%	56.6%	51.1%	53.4%	61.0%
Has need for assistance	0.0%	5.0%	6.1%	6.4%	5.5%	7.9%	6.3%	6.7%	6.7%	5.8%
Does not have need for assistance	87.5%	87.5%	82.8%	88.4%	87.5%	82.8%	87.6%	83.8%	85.7%	88.3%
Did voluntary work through an organisation or group (last 12 months)	33.8%	28.0%	27.4%	15.9%	12.7%	19.3%	15.7%	21.4%	18.2%	13.0%
INFRASTRUCTURE AND SERVICES										
Only travelled by car (driver or passenger)	47.8%	55.9%	64.1%	76.2%	83.7%	76.9%	77.7%	69.7%	47.8%	46.3%
Used public transit as at least one method of travel	0.0%	0.8%	0.0%	0.7%	0.3%	0.1%	0.4%	0.1%	0.0%	3.8%

Appendix E
Cumulative impacts

EMM
creating opportunities

E.1 Cumulative impacts

Table E.1 Known projects with potential for cumulative impacts

Project	Reference	Type	LGA	Description	Status
Project EnergyConnect	SSI-9172452	Electricity transmission	Murrumbidgee, Edward River, Hay, Federation	New overhead transmission line, substations and accommodation facilities.	Approved – under construction
Dinawan Solar Farm	SSD-50725959	Solar farm and BESS	Murrumbidgee, Edward River	Construction and operation of 800 MW solar farm and 300 MW BESS.	Proposed – responding to submissions
Argoon Wind Farm	SSD-64935522	Wind farm and BESS	Murrumbidgee	Construction and operation of 480 MW wind farm - up to 106 WTGs and 477 MW BESS.	Proposed – EIS in preparation
Victoria to NSW Interconnect (VNI) West	Not yet on planning portal	Electricity transmission	Murrumbidgee, Edward River, Murray	New overhead transmission line connecting the high voltage electricity grids in NSW and Victoria.	Proposed – pre-scoping phase
Yanco Delta Wind Farm	SSD-41743746	Wind farm and BESS	Murrumbidgee, Edward River	Construction and operation of 1.5 GW wind farm - up to 208 WTGs.	Approved
Pottinger Wind Farm	SSD-59235464	Wind farm and BESS	Edward River, Hay	Construction and operation of a wind farm with up to 108 wind turbines, battery storage and associated infrastructure.	Proposed – EIS in preparation.
Pottinger Solar Farm	SSD-59254709	Solar farm and BESS	Hay Shire	Development of a 300 MW solar farm and associated infrastructure, including battery storage facility.	Proposed – EIS in preparation.
Coleambally Solar Farm	SSD-8208	Solar farm	Murrumbidgee	150 MW solar farm.	Operating
Coleambally BESS	SSD-23368211	BESS	Murrumbidgee, Edward River, Hay	Construction and operation of 100 MW BESS.	Approved
Bullawah Wind Farm	SSD-50505215	Wind farm and BESS	Murrumbidgee	Construction and operation of 1 GW wind farm - up to 170 WTGs.	Proposed – EIS in preparation.

Table E.1 Known projects with potential for cumulative impacts

Project	Reference	Type	LGA	Description	Status
Darlington Point Solar Farm	SSD-8392	Solar farm and BESS	Murrumbidgee	275 MW solar farm (constructed). 200 MW BESS (under construction)."	Operating; however, BESS under construction.
Woodland Battery Energy Storage System	SSD-30526266	BESS	Murrumbidgee	Construction and operation of 200 MW/800 MWh BESS.	Proposed – under assessment.
Yarrabee Solar Farm	SSD-9237	Solar farm and BESS	Narrandera	Construction and operation of 900 MW solar farm and BESS.	Approved – not constructed.
Billabong Creek Environmental Water Regulators	SSI-50831979	Water storage or treatment facilities	Edward River	Replacing four existing weirs along Billabong Creek with four new environmental water regulators.	Proposed – EIS in preparation.
Currawarra Solar Farm	SSD-8437	Solar farm and BESS	Edward River	Construction and operation of 195 MW solar farm and BESS.	Approved – not constructed.
Tarleigh Park Solar Farm	SSD-8436	Solar farm and BESS	Edward River	Construction and operation of 90 MW solar farm and BESS.	Approved – not constructed.
The Plains Solar Farm	SSD-51219280	Solar farm and BESS	Hay	Construction and operation of 500 MW solar farm and 400 MW / 1.6 GWh BESS.	Proposed – EIS on exhibition
The Plains Wind Farm	SSD-50629707	Wind farm	Edward River	Construction and operation of 1.8 GW wind farm - up to 226 wind turbines.	Proposed – EIS on exhibition
Tchelery Wind Farm	SSD-59701722	Wind farm	Edward River	Construction and operation of a wind farm with up to 120 wind turbines and associated infrastructure.	Proposed – EIS in preparation.
Baldon Wind Farm	SSD-40138508	Wind farm	Edward River, Hay, Murray River	Construction and operation of 1 GW wind farm - up to 162 WTGs.	Proposed – EIS in preparation.

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