Appendix O Socio-Economic Impact Assessment

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Socio-Economic Impact Assessment

Daroobalgie Solar Farm

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Terms and definitions

Term	Meaning
Access tracks	Access tracks are preferred to describe the project's on-site vehicular access (as opposed to "access roads")
Daroobalgie Solar Farm	Daroobalgie Solar Farm comprises the solar farm site, the ETL and switchyard site
ETL	Electricity transmission line
kV	Kilovolts
LGA	Local Government Area
MW	Megawatts
Pacific Hydro Australia Developments Pty Ltd	Pacific Hydro
PV	Photovoltaic
SEARs	Secretary's Environmental Assessment Requirements
SEIA	Socio-Economic Impact Assessment
Solar farm site	The solar farm site is approximately 300 hectares on land legally described as Lot 77 in Deposited Plan 750183. The solar farm site will comprise the solar photovoltaic arrays, substation, battery storage area, inverters, power cabling, site offices, car parking, and new access tracks
Substation	This refers to the substation within the solar farm site
Switchyard	This refers to the switchyard infrastructure at the point where the transmission line will connect into the existing Parkes-Forbes 132KV line

Executive summary

This Socio-Economic Impact Assessment (SEIA) has assessed the positive and negative socio-economic impacts that are predicted to occur during the construction and operation of the project. Construction related impacts are anticipated to be localised to the project with changes predominantly around land use, visual amenity, and access and connectivity.

Traffic movements generated during the construction phase are expected to include around 5,775 (one-way) heavy vehicle movements and about 167 (one-way) light vehicle movements. Traffic generated during the operational phase is expected to be minimal in comparison to the construction phase. Operation is not expected to generate significant traffic and will be comparable to the traffic generated by existing and surrounding rural land uses.

Works at the solar farm site during construction are not expected to impact surrounding receivers. During construction of the electricity transmission line (ETL), six receivers located less than 1.5 km from the ETL would likely be adversely impacted as construction of the ETL moves along the easement. Based on the noise criteria exceedance of potential construction activities, additional noise management and mitigation measures during the ETL construction would need to be implemented to reduce the noise impacts. Two receivers nearest to the switchyard site are also likely to experience noise impacts that exceed standard construction hours criteria. As such, additional noise management and mitigation measures during the construction of the switchyard site would need to be implemented to reduce noise impacts. Noise impacts are not expected during operation of the project.

Project construction, and to a lesser extent operation, will generate employment opportunities in the local and regional area. Income derived from employment can directly shape life experiences and opportunities, enhancing socio-economic wellbeing and prosperity for individuals and communities. Indirect economic benefits will also be generated for local businesses due to local discretionary/incidental spending by the project's construction workforce with flow on distribution of wealth throughout the local economy.

Once operational, the primary activities conducted on site will include day-to-day routine operations, maintenance of infrastructure, general site maintenance and security. The proposed use of the project as a solar farm would not preclude the co-location of compatible agricultural land uses. The operation of the project will require from 4 to 6 full time equivalent operational roles to be located onsite, as well as contractors travelling to site from time to time to undertake maintenance activities.

Once operational, potential impacts to surrounding sensitive receptors may include changes to existing rural views. Changes to visual characteristics might result in reduced enjoyment of the natural and rural landscape. However, whether these impacts are perceived as being adverse, positive, or neutral is subjective and influenced by the unique perspectives of individual receptors.

Potential impacts and site-specific management measures to avoid, minimise or manage identified social and economic impacts during the project's pre-construction, construction and operational phases have been identified in this SEIA and other technical assessments undertaken for the project. With the implementation of these mitigation and management measures along with the Community Investment Fund, it is not anticipated that construction and operation of the Daroobalgie Solar Farm will have any substantial effect on the socio-economic well-being of surroundings communities whilst delivering economic benefits in the form of employment and procurement.

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1 Introduction

1.1 Background

Daroobalgie Solar Farm is a renewable energy project being proposed by Pacific Hydro Australia Developments Pty Ltd (Pacific Hydro). The Daroobalgie Solar Farm comprises a solar farm site, an electricity transmission line (ETL) and switchyard site (the project).

The project is proposed to comprise the installation of approximately 420,000 solar photovoltaic (PV) panels, associated infrastructure, and an electricity transmission line (ETL) and switchyard to connect the solar farm to an existing 132kV powerline west of Newell Highway. The Project will have an estimated capacity of approximately 100 megawatts (MW) and will provide enough electricity to power up to the equivalent of 34,000 homes each year

1.2 Purpose of socio-economic impact assessment

The purpose of this socio-economic impact assessment (SEIA) is prepare an assessment of the likely impacts on the local community, demands on Council infrastructure and a consideration of the construction workforce accommodation. The detailed requirements of SEARs are further discussed in Section 2.3.

1.3 The project

1.3.1 Project location

The solar farm site is located approximately 11 kilometres (km) north east of Forbes. The site is approximately 300 hectares (ha) on land legally described as Lot 77 in Deposited Plan 750183. The solar farm site will be accessed by Troubalgie Road to the north of the proposed site.

The ETL connects the solar farm site to the proposed switchyard site located near the existing Forbes-Parkes 132 kilovolts (kV) transmission line. The ETL easement is approximately 8.5 km long and approximately 45 metres (m) wide. The easement traverses a number of private properties, road reserves and crown land (i.e. – travelling stock route).

The switchyard site is located approximately 5.5 km north of Forbes on Lot 14 in Deposited Plan 750158. The switchyard site is adjacent to the existing Forbes-Parkes 132 kV transmission line located approximately 500 m west of the Newell Highway. It will be accessed from Daroobalgie Road.

The location of the project is shown in Figure 1-1 below.

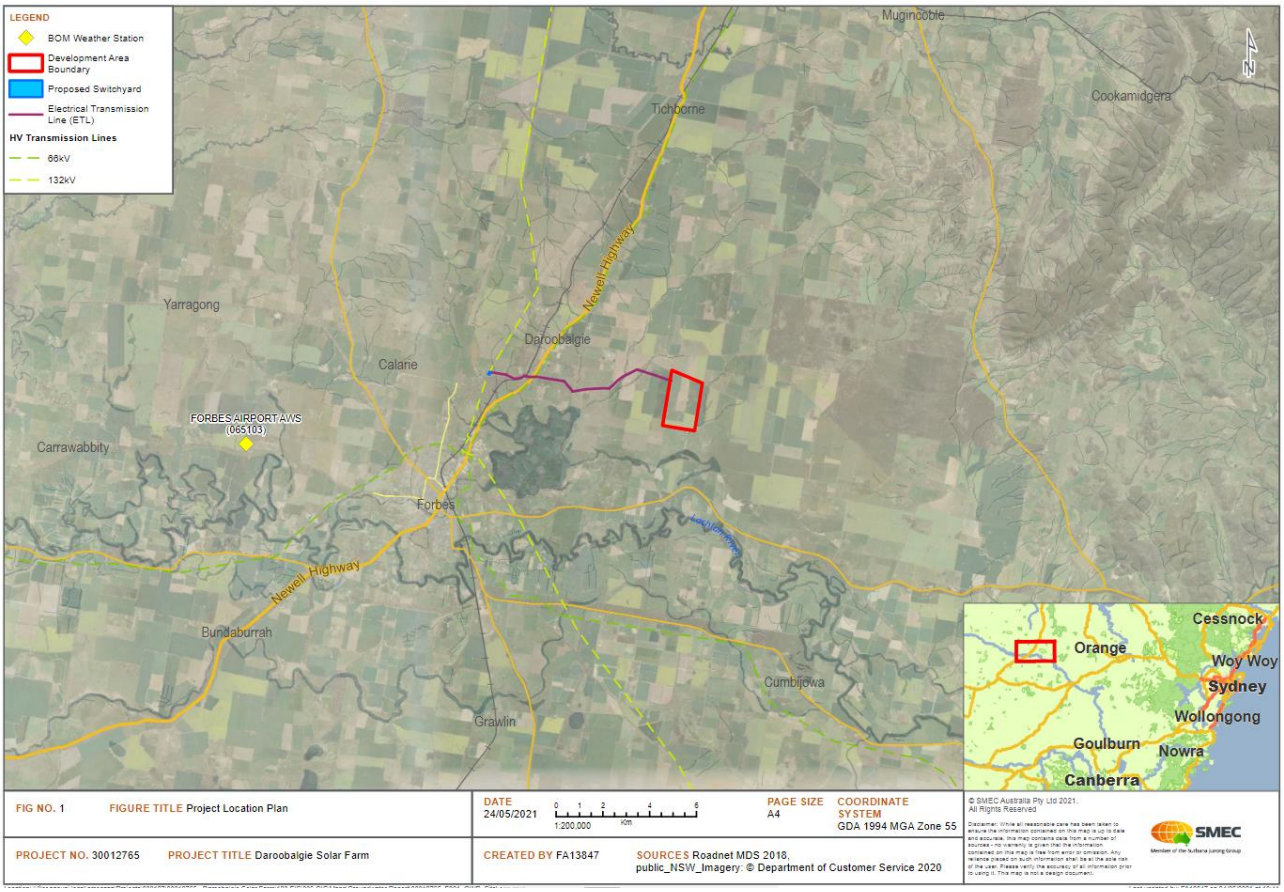


Figure 1-1 The project

1.3.2 Site and surrounds

As discussed above, the solar farm site is approximately 300 ha in area within a larger landholding. The site is located on land which is amongst the least agriculturally productive of the larger landholding.

The topography of the solar farm site is generally uniform with an average elevation of 240 m above the AHD. The land is largely cleared, having been highly modified by past disturbances associated with land clearing, cropping, and livestock grazing. A number of dams are present within the solar farm site and a natural watercourse runs to the east of the property boundary, intersecting the site in the southeast corner. Small ephemeral waterholes, known locally as gilgai, are present in some paddocks, predominately in the south eastern section of the site. These have been progressively ploughed and levelled by farming activities over time.

There are no residential dwellings within the solar farm site and the nearest dwelling is located approximately 600 m to the north west of the western boundary. There are eight existing dwellings within 3 km of the site. The Newell Highway runs north south 5.5 km to the west of the project.

The ETL will connect the substation at the solar farm site to the switchyard site. As discussed above the ETL traverses a number of private properties, road reserves and crown land.

The switchyard site is approximately 16 ha and the 132 kV switchyard will occupy approximately 0.5 ha. Its tallest component is the landing gantry that can reach approximately 12-14 m high. The site will be accessed from Daroobalgie Road.

1.3.3 Project key components

The project comprises a number of key components, including:

- A network of photovoltaic (PV) solar panel arrays and Power Conversion Units (PCUs) (DC-AC inverters)
- Battery energy storage system (BESS) with embedded storage capacity of approximately 40 megawatt (MW)/160 megawatt-hours (MWh)
- Electrical collection systems, substation and control room

- Temporary construction compound
- Operations and Maintenance (O&M) facility, including demountable offices, amenities, equipment sheds, storage and parking areas
- Internal access roads
- Perimeter security fencing
- An approximate 8.5 km, 132 kV transmission line
- A 132 kV switchyard to connect to the existing TransGrid Forbes-Parkes 132 kV transmission line.

Solar farm site

The solar farm site proposes the installation of PV panels mounted on either fixed-tilt or single-axis-tracking structures that will be configured in rows of columns oriented to the north to optimise power generation achieved at the site.

The PV panels must be elevated on the mounting system to ensure the minimum flood level freeboard[1] requirements at the site and are expected to have a maximum height of up to 4 m when fully tilted at 60 degrees. Initial investigations indicate approximately 420,000 PV panels could be installed for the project; however, the final design will depend on a range of factors including available technologies, available grid capacity, economies of scale, grid connection and environmental constraints.

PV panels are wired in a string array with each group feeding a DC-AC inverter, which converts DC current generated from the PV panels into AC current that can then be stepped up to 132 kV and subsequently exported to the national electricity grid.

PCUs will contain the DC-AC inverters, medium-voltage transformers, switchgear, Supervisory Control and Data Acquisition (SCADA) and communications equipment. They are normally housed within a shipping container-like structures that measure approximately 12 m long x 2.5 m wide x 2.9 m high.

Underground electrical cabling is proposed to be installed between the PV panels, PCUs and the substation and the electricity generated by the project exported to the national electricity grid.

A new 33 kV/132 kV electrical substation on the solar farm site will be constructed for the project to enable connection of the project to the national electricity grid.

The O&M facility is expected to be co-located with the substation and BESS. Structures will include demountable offices, staff amenities, equipment storage sheds, and at-grade car parking.

The BESS capacity is proposed to be 40 MW and 160 MWh; however, the final sizing and design of the BESS will be determined during the detailed design process. The most likely technology for the BESS is lithium-ion.

The BESS compound will be approximately 150 m x 75 m, fully fenced and secured.

The BESS compound components will include:

- Battery stacks (if in containerised solution) with approximate dimensions of 12 m long x 2.5 m wide x 3.0 m high
- Bidirectional inverters that converts power from DC to AC and allow charging of the batteries via AC to DC rectifiers
- Protection devices
- Colling systems
- Control system.

The main access tracks will be approximately 6 m wide with crushed rock (or similar) and secondary internal access tracks approximately 4 m wide constructed with compacted soil (or similar), engineered to withstand light traffic all year round.

Security fencing is expected to be 2.1 m high total and made from 1.8 m high chain-wire mesh and strainer wire and 0.3 m high barbed wire. (refer to Figure 1.2 below for the switchyard site shown in red).

[1] Freeboard is a factor of safety expressed as the height above the flood used to determine the design floor level or ground level (Forbes Development Control Plan, 2013).

Electricity transmission line (ETL)

A new 132 kV ETL will be constructed from the substation to a switchyard near the existing Forbes-Parkes 132 kV transmission line located approximately 500 m west of the Newell Highway. The ETL will be approximately 8.5 km long and traverses a number of private properties, road reserves and crown land. The ETL easement will be 45 m wide. The ETL is likely to utilise monopole structures 25-30 m high (refer to Figure 1.2 below for the ETL easement shown in purple).

Switchyard site

The 132 kV Switchyard to connect to the existing TransGrid transmission line, is expected to occupy a footprint of 90 m long x 55 m wide. Its tallest components are the landing gantries that can reach approximately 12-14 m. (refer to Figure 1.2 below for the switchyard site shown in blue).

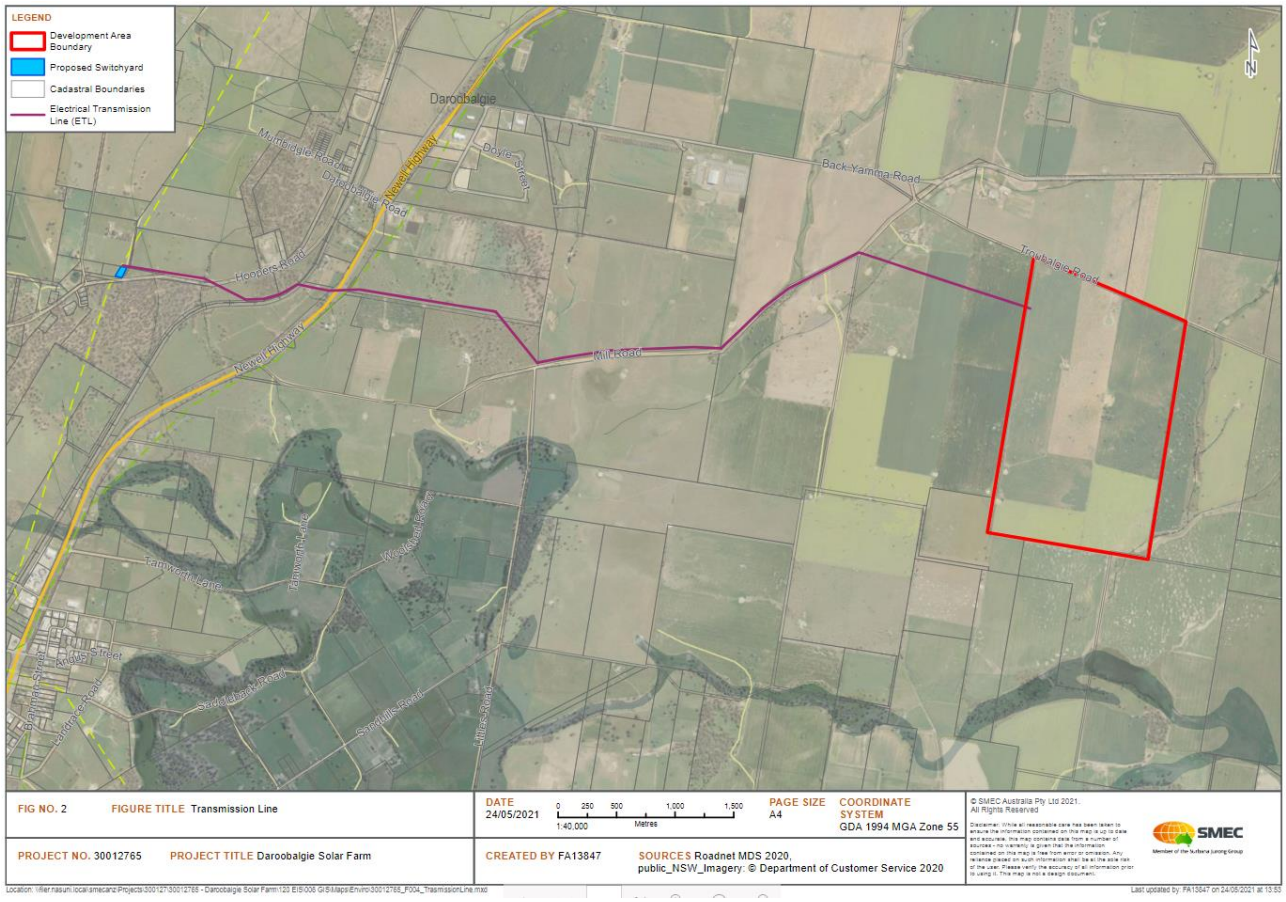


Figure 1-2 Project's electricity transmission line easement

1.3.4 Project time frames

1.3.4.1 Construction

Construction of the project will take approximately 12-18 months from commencement of site works. Minor earthworks would be required for the preparation of the project, including minimal site levelling works, access tracks and drainage works. Due to the relatively flat terrain of the project, minimal site preparation and civil works are anticipated. Most of the infrastructure for the project would be pre-fabricated off-site, delivered and then installed or assembled on-site.

1.3.4.2 Operation

The primary operational activities conducted for the project will occur at the solar farm site. However, inspections and associated maintenance at the switchyard and along the ETL easement will be required incrementally. Operational activities will typically include routine operations, maintenance of infrastructure, general site maintenance and security activities.

Operation of the project will likely be supported by local contractors for tasks such as repairs, minor works, weed/vegetation management, fencing and cleaning etc. The operational lifespan of the project is expected to be up to 35 years, depending on the nature of solar PV technology and energy markets.

1.3.4.3 End of life management

Once the project reaches the end of its operational life, a decision will be made to either decommission or re-power the project, subject to additional approval requirements. If the project is decommissioned, all above-ground infrastructure will be removed and the sites rehabilitated generally to its pre-existing land use, as far as practicable and utilising best practice contemporary site rehabilitation techniques available at that stage. The disposal and recycling of project infrastructure will be done in accordance with current waste management legislation at the time of decommissioning. Wherever possible, efforts will be made to reduce the amount going to landfill in line with best practice sustainability principles. If re-powering the project is proposed, an appropriate level of assessment including stakeholder consultation will be undertaken, and all necessary approvals will be sought.

1.3.5 Workforce requirement

Pacific Hydro has a strong track record of delivering lasting social, environmental, and economic benefits to the local communities in which the project is located. These include:

- A significant number of direct jobs during construction
- Generating local economic activity during construction and operations
- Opportunities for local businesses and suppliers
- Support for community-led projects and initiatives through its Sustainable Communities Fund.[2]

During construction, a peak of around 320 construction workers and site support staff is estimated to be required for the project. Approximately 4-6 permanent jobs will be required to ensure the effective operation of the solar farm site, ETL and switchyard. Further local contractor opportunities are also anticipated for activities such as repairs, minor works, weed/vegetation management, fencing and cleaning etc. As discussed, construction time frames will be determined by the project approval process along with other external factors. Construction and commissioning is likely to take 12 - 18 months.

1.4 Socio-economic impact assessment study area

The study area for the SEIA was defined with reference to locations and stakeholders surrounding the project which may experience socio-economic impacts associated with the project. This includes areas that may incur direct or indirect impacts or benefits from the project. Two study areas were used – local and regional. These are defined in Table 1-1 and shown in Figure 1-3.

[2] Since 2005, Pacific Hydro's Sustainable Community Fund has provided more than $4.3 million to over 600 local projects.

Table 1-1 SEIA study areas

SEIA study area	Sub-study area	ABS statistical code	Description
Local study area	The solar farm site, ETL and switchyard site and the area immediately surrounding the project	SA1 1106517	Most on ground project related activities would occur within the local study area, which comprise of SA1 1106517. The SA1 1106517 encompasses the area immediately surrounding the solar farm site.
Regional study area	Forbes Urban Centres and Localities (UCL)	UCL 114011	Forbes UCL is located approximately 11 km south/south west of the project. Workers may reside in Forbes and commute to the project daily. Given Forbes Local Government Area (LGA) forms part of this SEIA, only the Parkes UCL is discussed further in this report.
	Parkes UCL	UCL 114025	Parkes UCL is located approximately 22 km north of the project. Parkes UCL is located within a reasonable commuting distance from the project and workers may choose to reside in Parkes and commute to the project daily.
	Forbes LGA	LGA 12900	The local study area and the project are wholly located within Forbes LGA.

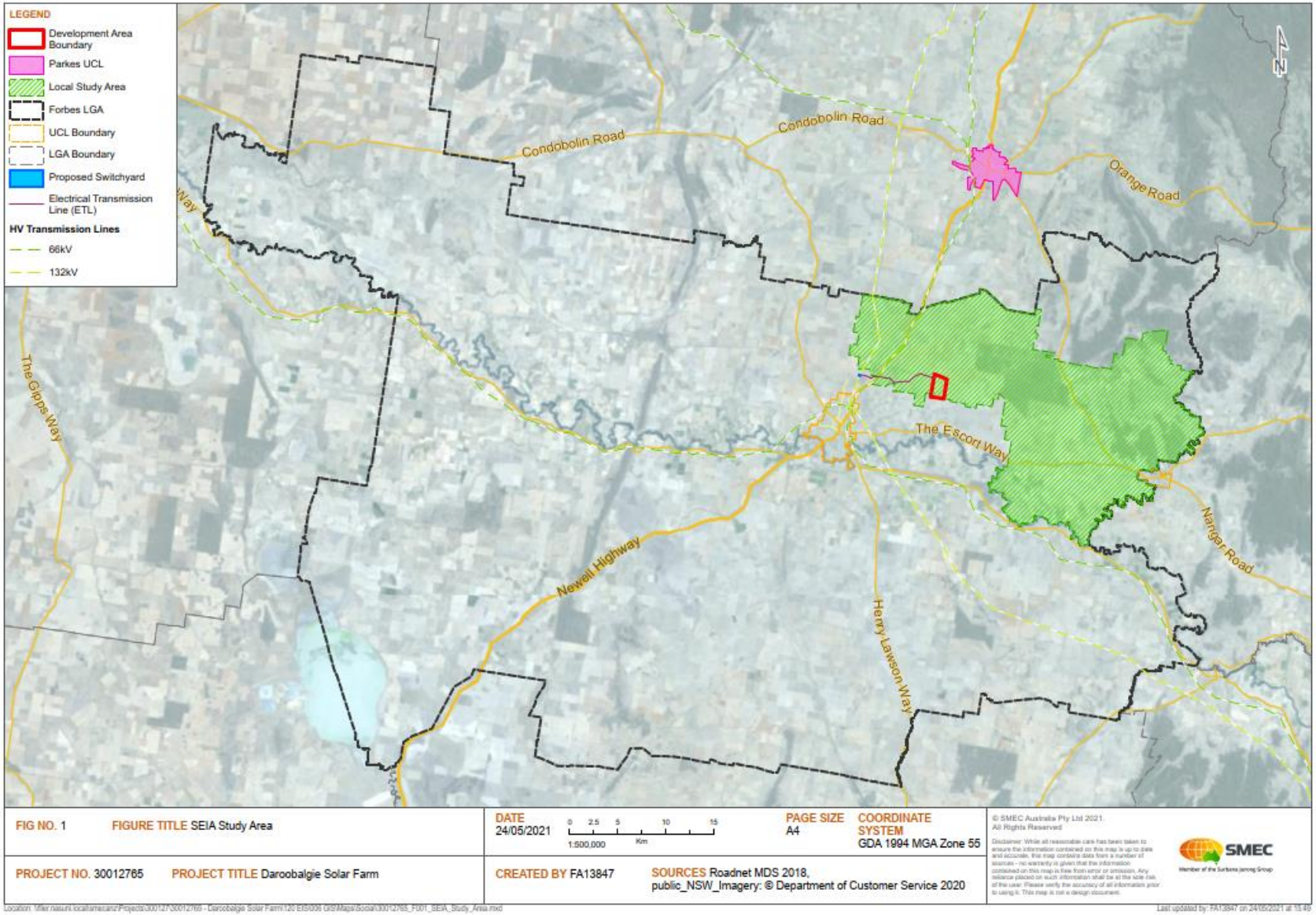


Figure 1-3 Map of SEIA study areas

2 Legislation and guidelines

2.1 Overview

The project requires approval under Section 4.12(8) State Significant Development (SSD) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). Pacific Hydro lodged the Daroobalgie Solar Farm project Application with the NSW Government (application number SSD 10387) and the Secretary's Environmental Assessment Requirements (SEARs) were issued on 19 December 2019. This Section describes the legislation, legal requirements and guidelines applicable to the approval process as they relate to the SEIA.

2.2 Environmental Planning and Assessment Act 1979

As described in the EP&A Act (Section 1.3), the NSW Government aims to:

(a) Promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources

(b) Facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment

(c) Promote the orderly and economic use and development of land

(d) Promote the delivery and maintenance of affordable housing and protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats

(e) Promote the sustainable management of built and cultural heritage including Aboriginal cultural heritage

(f) Promote good design and amenity of the built environment

(g) Promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants

(h) Promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State

(i) Provide increased opportunity for community participation in environmental planning and assessment.

The key aims of the EP&A Act have been appropriately considered in the methodology and conduct of the SEIA.

2.3 Secretary's environmental assessment requirements

In addressing the SEARs requirements, this SEIA report:

- Describes the legislation and guidelines relevant to socio-economic impacts in the context of the project (see Chapter 2).
- Identifies affected communities and other interested stakeholders (see Chapters 4).
- Describes the socio-economic environment, as far as it is relevant to that issue and provide a quantitative and qualitative profiles of affected communities, including values and aspirations (see Chapter 5).
- Identifies any diversity of views/concerns that might exist in the communities (see Chapter 4).
- Identifies and describes the impacts associated with the issue, including the likelihood and consequence of the impact (see Chapter 6).
- Assesses social and economic impacts in compliance with the relevant guidelines (see Chapter 6).
- Demonstrates how potential impacts may be avoided, managed or mitigated (see Chapter 6).
- Assesses the significance of residual impacts following the assumed effective implementation of mitigation measures (see Chapter 6).

2.4 Guidelines

The SEARs issued for the project did not specify any particular guideline to be adopted in the assessment of socio-economic impacts. However, as per accepted good practice in NSW, the SEIA has been prepared with guidance from the following guidelines:

- Social impact assessment guideline 2017 (2017 SIA guideline) for state significant mining, petroleum production and extractive industry development and SIA Scoping Tool (DPE, 2017);
- Social impact assessment guideline 2021 (2021 SIA guideline) for state significant projects (DPIE, 2021);

- Environmental planning and impact assessment practice note: socio-economic assessment (Roads and Maritime Services, 2013).

Key aspects of these guidelines are discussed in the following sections.

2.4.1 Social Impact Assessment Guideline 2017

The 2017 SIA guideline developed by the Department of Planning, Industry and Environment is a non-statutory guideline that provides direction on assessing the impacts of State Significant resource projects under the EP&A Act.

The 2017 SIA guideline recommends the application of the SIA scoping tool (2017) as published on the DPE website, for the rigorous scoping of all potential impacts and their relative 'materiality'. This informs the identification of the issues upon which the SEIA should focus. As discussed in Section 4, the matters checklist of the SIA scoping tool was completed as part of the scoping phase of the SEIA.

2.4.2 Social Impact Assessment Guideline 2021

The 2021 SIA guideline, available from October 2021, builds on the 2017 SIA guideline and requires all State significant projects to have a clear and consistent approach to assessing social impacts.

The 2021 SIA guideline aims to build higher levels of community understanding of projects and give stakeholders and the community confidence that their concerns and perspectives are being considered early in the assessment. It provides a framework to identify and manage social impacts. This is done by first predicting impacts; refining the project to avoid negative impacts and enhance benefits; minimising then mitigating negative impacts and maximising benefits; and finally managing impacts.

While not a statutory requirement, the SEIA has adopted elements of the 2021 SIA guideline where relevant and feasible. The 2021 SIA guideline supports an evidence-based approach and therefore outlines a set of principles that are relevant to infrastructure projects. These principles are summarised in Table 2-1 along with the projects SEIA's response and the applicable SEIA sections.

Table 2-1 SIA guideline principles

Principles	Description	SEIA Response	SEIA Chapter
Action-oriented	Delivers outcomes that are practical, achievable and effective	Mitigation/enhancement measures	6
Adaptive	Establishes systems to actively respond to new circumstances / information and support continuous improvement	Stakeholder engagement to inform the SEIA and EIS	4
Culturally responsive	Develops culturally informed approaches to ensure Aboriginal and culturally diverse communities are engaged appropriately, and their perspectives, insights and feedback are valued	Stakeholder engagement to inform the SEIA and EIS	4
Distributive equity	Considers how social impacts are distributed across vulnerable groups and between current and future generations	Consideration of local and regional impacts, over time	6
Life Cycle focus	Seeks to understand potential impacts at all project stages, from pre-construction to post closure/operation commencement	Assessment includes a focus on construction and operations	6
Impartial	Is undertaken in a fair, unbiased manner and follows relevant ethical standards	Commitment to objective and ethical assessment	Throughout
Inclusive	Seeks to understand the perspectives of the potentially affected groups, informed	Stakeholder engagement process	4

Principles	Description	SEIA Response	SEIA Chapter
	by respectful, meaningful, tailored and effective engagement		
Integrated	Uses relevant information and analysis from other assessments and supports effective integration of social, economic and environmental considerations	SEIA and EIS engagement processes integrated EIS findings integrated in the SEIA	4
Material	Identifies which potential social impacts matter the most, and/or pose the greatest risk to those affected	SEIA scoping	4
Precautionary	If there is a threat of serious or irreversible damage to the environment, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental (including social) degradation	Impact assessment considers residual risks	6
Proportionate	Scope and scale of SIA should correspond to the potential social impacts.	SEIA scoping to define potential material impacts	4
Rigorous	Uses appropriate, accepted social science methods and robust evidence from authoritative sources	Methods and evidence sources are described and justified	3
Transparent	Information, methods and assumptions are explained, justified and accessible, and people can see how their input has been considered	Stakeholder engagement inputs are documented and references to relevant assessment sections are drawn	4

The 2021 SIA guideline is supported by a technical supplement which, while not a mandatory requirement, provides useful additional guidance and sets out worked examples, social impact prompts for various development types, methods for collating and analysing social data, methods for evaluating significance, and requirements for mitigation, monitoring and adaptive management.

2.4.3 Environmental planning and impact assessment practice note: socio-economic assessment

The Roads and Maritime Services (now Transport for NSW (TfNSW)) socio-economic practice note (2013) forms part of the common procedures under environmental impact assessment (EIA) guidelines. This practice note provides a framework for assessing socio-economic impacts of TfNSW projects undertaken by or on behalf of TfNSW to ensure impact assessments are carried out consistently to a high standard, and are properly integrated with other environmental assessments, design development and management processes (Roads and Maritime Services, 2013). This SEIA has been prepared to align with the practice note guidance for 'analysing, monitoring and managing the socio-economic consequences of development which involves identifying and evaluating changes to or impacts on communities, business and industry that are likely to occur as a result of the proposed development in order to mitigate or manage impacts and maximise benefits.'

2.5 NSW and regional strategic planning and policy framework

2.5.1 NSW 2021 Plan and Renewable Energy Action Plan

The NSW 2021 Plan provides state-wide priorities for action and also guides resource allocation. Goal 22 of this plan seeks to protect the natural environment and includes a specific target to increase renewable energy. The plan states that NSW Government will contribute to the national renewable energy target by promoting energy security through a more diverse energy mix, reducing coal dependence, increasing energy efficiency and moving to lower emission energy sources.

2.5.2 NSW Renewable Energy Action Plan 2013

The NSW Renewable Energy Action Plan (REAP) has 24 actions under 3 goals that detail the Government's intention to work closely with NSW communities and the renewable energy industry to increase renewable energy generation in the state at the least cost to the consumer. Goal 1 of the REAP is to attract renewable energy investment, including to 'support mid-scale solar PV to enable an uptake of solar technologies where they are most cost effective'. The project sits with the state-led objective and is consistent with the goal and intent of the REAP.

2.5.3 Central West and Orana Regional Plan 2036

The Central West and Orana Regional Plan 2036 celebrates the distinct landscapes and natural environment and their important role in supporting new economic opportunities, including significant agribusiness, value-added manufacturing developments and unique tourism experiences. The plan promotes further development of the renewable energy, mining, health and education sectors to unlock economic potential and drive diversification across the Central West and Orana, including Forbes.

Regarding renewable energy generation, the plan states that growth in wind energy, solar energy, and bioenergy generation will promote local jobs in smaller communities and development opportunities for associated industries and that the large open plains of the region provide the best access for solar energy generation. Innovative ways to manage water, harness renewable energy and prepare for natural hazards will build regional resilience and improve adaptation. As such, this project is consistent with the priorities of the Plan to promote further development of the renewable energy to unlock economic potential and drive diversification across the Central West and Orana.

2.6 Local policies

2.6.1 Forbes Local Environmental Plan 2013

Forbes Shire Council Local Environmental Plan 2013 (LEP) is the primary statutory planning instrument for the Forbes Shire. The Forbes LEP 2013 details the specific zoning information relating to all land within the Forbes Shire, except for the Bathurst Street area for which the Forbes Local Environmental Plan 1986 still applies and regulates the type of development which is permissible within each zone. This Forbes LEP 2013 aims to make local environmental planning provisions for land within the Forbes LGA in accordance with the relevant standard environmental planning instrument under section 33A of the Act. The particular aims of this plan are to:

- Encourage and manage ecologically sustainable development in Forbes
- Reinforce the existing urban character of Forbes as the urban focus
- Reinforce the rural character of Forbes while promoting sustainable development
- Protect the agricultural land of Forbes for continued agricultural production while allowing for planned expansion at the urban fringe
- Promote Forbes as a premier tourist-destination building on its unique heritage and environmental attributes as well as sporting and leisure facilities
- Protect, enhance and conserve the natural environment, including the Lachlan River, Lake Forbes, wetlands, native vegetation, environmentally sensitive land and other natural features that provide habitat for fauna and flora, provide scenic amenity and prevent or mitigate land degradation
- Provide a range and variety of housing choices to cater for the different needs and lifestyles of residents.

2.6.2 Forbes Community Strategic Plan 2018 - 2028

The Forbes Community Strategic Plan 2018 - 2028 is the highest-level forward planning document of Forbes Shire Council. It identifies the community's priorities and guides the direction for the Forbes region over the next 10 years. The plan identifies key objectives to achieving Forbes' desired future as follows:

- Strengthening its vibrant society and places
- Enhancing economic development
- Ensuring environment remains healthy, sustained and attractive
- Respected leadership and governance
- Pride in its infrastructure.

The Forbes Community Strategic Plan 2018 – 2028 identifies key strategies which have been grouped into the following give key elements as follows:

- Community and culture, including active participation in sporting and cultural events, adequate facilities, support for volunteerism and strategies to address social isolation
- Local economy, including protection of prime agricultural land, water security, increased vocational training and collaboration to help local businesses meet the challenges of a changing economy
- Natural environment, including addressing climate change and land degradation, preservation of bushland, responsible use and management of crown land and education to promote sustainable living
- Rural and urban land use, including preservation of agricultural land, balancing growth and the preservation of the rural amenity, main street enhancements and greater cooperation across government in these areas
- Infrastructure and services including ongoing maintenance of roads, well-planned community infrastructure, improved telecommunications infrastructure, local education and training, a reliable water supply and the long-term sustainability of the local aerodrome.

2.7 Summary

In summary, the SEIA has been undertaken in accordance with applicable legislation and the SEARs, including:

- Scoping and preliminary significance assessment at an early stage of the SEIA
- An inclusive stakeholder engagement process
- Ensuring suitable indicators have been selected in relation to pre-existing socio-economic conditions
- Collaboration with other EIS technical disciplines to ensure integration of results with a bearing on the socio-economic environment
- Analysis and assessment of likely impacts and benefits, including direct, indirect and cumulative impacts for all stages of the project
- Development of adaptive management and monitoring strategies.

The SEIA has also considered relevant elements of the 2017 SIA guideline and the 2021 SIA guideline.

3 Assessment methodology

3.1 Overview

This Chapter presents the methodology used to conduct the SEIA. In accordance with nationally accepted social impact assessment standards, the methodology applied for the SEIA was guided by the 2017 SIA guideline and the 2021 SIA guideline.

In addition, the SEIA methodology has been specifically tailored to meet the SEARs as outlined in Chapter 2. Figure 3-1 below illustrates the steps of the SEIA methodology which have been adopted based on applicable requirements and standards. These steps are described in the following sections.

Figure 3-1 Steps of SEIA methodology

In accordance with the 2017 and 2021 SIA guidelines, this SEIA has been prepared by a suitably qualified and experienced SIA practitioner. Appendix A outlines the lead author's qualifications, experience and professional memberships.

3.2 Scoping

Scoping for the SEIA was undertaken through applying the "matters checklist" as part of the 2017 SIA scoping tool published on the DPIE website. Scoping was conducted to highlight elements of the natural or human environment which have the potential to be impacted by activities associated with the project, whether negatively or positively, and how these impacts should be assessed (DPE, 2017). Overall, two core objectives were met during the scoping phase of the SEIA, including identification of:

1. The Area of Social Influence for the project
2. Social risks and issues (also referred to as 'matters') generated as a result of the project which require further investigation in the EIS.

The 'Area of Social Influence' or 'SEIA study area' for the project was defined based upon a range of factors including:

- The project layout (i.e., direct impact associated with the footprint)
- The nature of the surrounding environment including proximity of sensitive receptors, associated facilities, and other surrounding land uses
- Who may be affected by the project, how they may be affected, and their interests, values and aspirations?
- Social characteristics and trends, and sensitivities of communities
- Stakeholder inputs on the scope of potential social impacts and benefits
- The settlement pattern, including infrastructure and urban/peri-urban land use patterns.

Preliminary identification of potential social effects and issues of community concern was informed through application of the "matters checklist" as part of the SIA scoping tool published on the Department of Planning, Industry and Environment (DPIE) website. The matters checklist presents a high level, preliminary identification of project activities which may affect, or be perceived to affect, stakeholders. It includes a generic checklist of social, environmental and economic matters. Identification of potential socio-economic effects and issues of community concern was informed by the direct engagement of key stakeholders through undertaking scoping interviews.

The completed matters checklist informs the scope of the SEIA by providing the basis of further assessment to be completed for the SEIA, recognising that further matters may emerge as more detailed investigations are undertaken. The outcomes of the scoping phase informed the study areas for the SEIA, the information gathered for the existing social baseline and assessment of potential impacts and benefits. The findings of the scoping exercise are reported in Chapter 4.

3.3 Stakeholder engagement

Underpinning the SEIA process was community and stakeholder engagement. Principles guiding SEIA stakeholder engagement included:

- Providing local stakeholders with the opportunity to define local values and the characteristics of potentially affected communities
- Ensuring stakeholders understand the project details, timing, and workforce arrangements so that discussions about impacts and benefits are meaningful
- Ensuring the SEIA considers the interests and perspectives of stakeholders who may be affected by project impacts
- Integrating with the broader EIS and project engagement activities so as to provide a range of opportunities for community members and key stakeholders to provide feedback.

The engagement approach was structured to meet the requirements of the SEARs and 2017 SIA guideline and provided stakeholders with the opportunity to provide meaningful input into the identification of social impacts and how they may be managed. The engagement process commenced with the identification of stakeholders and their interests.

The primary means of engagement informing the SEIA was via semi- structured interviews and meetings with targeted key stakeholders (Table 4-2). This was the most effective way in which to meaningfully engage and gain genuine input into social impact identification and management. Information recorded provides insights into the characteristics and social trends occurring in study area communities and how such communities may be affected by the project.

Pacific Hydro has prepared a Community Engagement Plan (CEP) for the project with the aim of providing a platform for consultation and disclosure with project stakeholders through all phases of the project. The CEP sets out the approach to implementing an effective engagement program with stakeholders throughout the project. Good relations between the project and its affected neighbours, communities and relevant stakeholders will be an essential condition for the project to establish and maintain a social licence to operate, providing an important mechanism for receiving community feedback on project-related concerns and disseminating project-related information back to the community.

3.4 Socio-economic impact assessment baseline analysis

To provide the social context from which the impacts of the project can be assessed, a description of socio-economic and cultural conditions that would be expected to prevail in the absence of the project is required. The socio-economic baseline concisely documents relevant social, economic and land use characteristics within the SEIA study areas. This baseline provides a benchmark against which direct and indirect impacts can be predicted, analysed and measured.

The socio-economic baseline studies focus on the potential impacts identified through the scoping of the project's activities and the interaction of the project with resources and receptors. The socio-economic baseline of the SEIA study areas aims to describe the key socio-economic conditions with an emphasis on the resources and receptors that may be impacted by the project and to inform judgement where possible about the sensitivity, vulnerability and/or importance of resources.

The socio-economic baseline has drawn on a range of primary and secondary information sources. Quantitative information derived through ABS Census data and other secondary sources of information was complemented by primary information obtained through engagement. The suite of socio-economic indicators that comprise the baseline were determined with reference to the following:

- Community setting and values
- Population composition and growth
- Housing and accommodation availability and affordability
- Employment, labour force and skills
- Business and industry
- Social infrastructure provision
- Community health and safety.

The social baseline is reported in Chapter 5 of this SEIA.

3.5 Impact assessment overview

Impact identification and assessment of this SEIA began with the completion of preliminary risk assessment as part of the scoping stage. Drawing on the information derived through the stakeholder interviews along with analysis of the project's description and other technical studies being undertaken to inform the EIS, the SIA Scoping Tools were completed as per the 2017 SIA guideline. However, as the 2021 SIA guideline became available in October 2021, the SEIA has adopted the 2021 SIA guideline's impact categories and its criteria for evaluating impacts.

The definition of social impacts adopted by this SEIA is based on the 2021 SIA guideline which generally defines a social impact as "the consequences that people experience when a new project brings change". Types of impacts which have been identified, defined and assessed in accordance to the impact categories outlined in the 2021 SIA guideline, including:

- Way of life, including effects on how people live, how they get around, how they work, how they play, and how they interact each day
- Community, including effects on composition, cohesion, character, how the community functions, resilience, and people's sense of place
- Accessibility, including effects on how people access and use infrastructure, services and facilities
- Culture, both Aboriginal and non-Aboriginal, including effects on shared beliefs, customs, practices, obligations, values and stories, and connections to Country, land, waterways, places and buildings
- Health and wellbeing, including effects on physical and mental health especially for people vulnerable to social exclusion or substantial change, psychological stress resulting from financial or other pressures, access to open space and effects on public health
- Surroundings, including effects on aesthetic value and amenity, ecosystem services such as shade, air quality, noise, public safety and security, access to and use of the natural and built environment
- livelihoods, including effects on people's capacity to sustain themselves through employment or business
- Decision-making systems, including effects on the extent to which people can have a say in decisions that affect their lives, and have access to complaint, remedy and grievance mechanisms.

Social impacts vary in their nature. Impacts can be positive or negative; tangible or intangible; direct, indirect or cumulative; directly quantifiable, indirectly or partly quantifiable, or only able to be described and assessed in qualitative terms; and experienced differently by different stakeholders or at different times and stages of the project (DPE, 2017). Sources of information to inform impact identification include primary and secondary data.

The assessment of impacts is undertaken across four key sequential steps which are summarised as follows:

- Impact prediction: to predict the nature and scale of potential social impacts associated with the project
- Impact evaluation: to evaluate the significance of the predicted impacts by considering the likelihood and consequence of the identified impacts
- Mitigation and enhancement: to identify appropriate and justified measures to mitigate negative impacts and enhance positive impacts
- Residual impact evaluation: to evaluate the significance of impacts assuming effective implementation of mitigation and enhancement measures.

The following describes the respective steps of the impact assessment process.

3.5.1 Impact prediction

Prediction of impacts is essentially an objective exercise to determine what is likely to happen to the environment because of the project and its associated activities. From the potentially significant interactions identified in Scoping, the impacts to the various resources/receptors are elaborated and evaluated.

To predict social benefits and impacts resulting from the project, this SEIA considered the precautionary and uncertainty principles (Vanclay *et al*., 2015). The precautionary principle means that even though impacts may not able to be fully defined, they were still considered as part of the assessment. By adopting the uncertainty principle, there is recognition that the predicted impacts may change from place to place and from person to person over time due to ever changing social processes and as knowledge of these social processes increases.

The predicted impacts were identified based on the social conditions in the study areas at the time when the SEIA was undertaken. It is recognised that the predicted social impacts and their assessments may change with any alternations

to the socio-economic and political context (such as that associated with COVID 19) or as stakeholder perceptions change over time as more information about the project becomes available.

3.5.2 Impact evaluation

The identified positive and negative impacts are evaluated to determine their relative level of significance. In accordance with the 2021 SIA guideline technical supplement, positive and negative impacts are evaluated according to:

- The likelihood of the potential social impact, that is, very unlikely, unlikely, possible, likely or almost certain.
- The magnitude of the potential social impact, that is, minimal, minor, moderate, major or transformational. In accordance with that outlined in the 2021 SIA guideline Technical supplement, specific elements considered in predicting the level of magnitude of an impact include its extent, duration, severity or scale, intensity or importance, level of community concern or interest.

Based on this impact evaluation approach, the positive and negative impacts associated with the project have been evaluated to determine their impact significance, using the interaction between the likelihood of impacts and magnitude level. The likelihood of social impacts and benefits has been assessed with reference to the socio-economic baseline, inputs of stakeholders, and other relevant technical findings. Table 3-1 below describes the likelihood of impact.

Table 3-1 Likelihood criteria

Rating	Likelihood Level	Meaning
A	Almost certain	Definite or almost definitely expected (e.g. has happened on similar projects)
B	Likely	High probability
C	Possible	Medium probability
D	Unlikely	Low probability
E	Very unlikely	Improbable or remote probability

Magnitude has been assessed based on how social impacts are experienced by the community and stakeholders. Magnitude criteria are shown in Table 3-2.

Table 3-2 Magnitude model

Rating	Magnitude level	Meaning
1	Minimal	Little noticeable change experienced by people in the locality.
2	Minor	Mild deterioration/improvement, for a reasonably short time, for a small number of people who are generally adaptable and not vulnerable.
3	Moderate	Noticeable deterioration/improvement to something that people value highly, either lasting for an extensive time, or affecting a group of people.
4	Major	Substantial deterioration/improvement to something that people value highly, either lasting for an indefinite time, or affecting many people in a widespread area.
5	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.

The impact significance has been assessed, considering the interaction between likelihood and magnitude. Figure 3-2 below presents the impact significance matrix.

			Magnitude Level				
			1	2	3	4	5
			Minimal	Minor	Moderate	Major	Transformational
Likelihood	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

Figure 3-2 Impacts significant matrix

3.5.3 Mitigation and management

The social impact management strategies outlined in this SEIA seek to both enhance the benefits for the stakeholders and communities as well as mitigate negative impacts from the project. The SEIA also draws upon the various EIS technical studies to understand the likely mitigation/management of specific impacts such as noise, air quality, visual amenity, traffic and transport, and others as specified in Section 8. The recommended management strategies were developed using adaptive management principles, recognising that impacts may change over time, and that ongoing monitoring of impacts would provide the flexibility to accommodate such changes.

Impacts with a risk rating of moderate, high or extreme require mitigation or management actions. Where feasible, the following hierarchy of mitigation measures will be applied to ensure that all residual impacts levels can be reduced to minor or negligible:

- Changes in technology choice
- Avoidance and reduction of impacts through design (embedded mitigation)
- Abatement of impacts at source or at receptor
- Repair, restore or reinstate to address temporary effects
- Compensation and offsetting for loss or damage.

Consideration has also been given to the identification of enhancement measures. These measures are actions and processes that:

- Create new positive impacts or benefits
- Increase the reach or amount of positive impacts or benefits
- Distribute positive impacts or benefits more equitably.

3.5.4 Residual impact evaluation

Residual impacts are those that remain after the application of mitigation and enhancement measures. Once mitigation and enhancement measures are known, the next step of the impact evaluation process is to assign residual impact significance. This is essentially a repeat of the impact assessment steps discussed above, considering the assumed effective implementation of the proposed mitigation and enhancement measures.

4 Socio-economic impact assessment engagement and scoping

4.1 Overview

The scoping process provides the basis for identifying the important socio-economic impacts to be assessed in this SEIA. It served to ensure that the SEIA study areas were defined on the basis of the societal groups likely to experience socio-economic effects as a result of the project.

The initial stage of SEIA scoping involved the review of background materials relating to the project. In accordance with the 2017 SIA guideline, scoping of potential socio-economic effects was facilitated through direct engagement with key stakeholders. Information compiled through social research and the engagement of stakeholders informed completion of the SIA Scoping Tool as stipulated by the 2017 SIA guideline. This Section provides an overview of SEIA scoping and the engagement which was undertaken to inform the SEIA.

4.2 Scoping of matters

The 2017 SIA guideline provides a process for the preliminary identification and assessment of potential socio-economic impacts and benefits. Central to this process is the 2017 SIA Scoping Tool which outlines key socio-economic considerations and a method for their preliminary assessment. Feedback provided through the scoping interviews and the EIS engagement directly informed the completion of the SEIA Scoping Tool. Table 4-1 lists the matters considered likely to be affected- noting that these are prior to the application of any avoidance or mitigation measures.

Table 4-1 SEIA matter checklist

Social & environmental matters		Project activities likely to affect receptors (without mitigation)	Applicable stakeholders
Amenity	Acoustic	• Noise impacts would mostly be associated with construction activities and include noise generated by preparation earthworks, delivery and assembly of the solar panel infrastructure, electricity transmission line, grid connection, and operation of vehicles. Noise created from construction activities would negatively impact on the amenity of those are in the proximity of the project boundary (noise sensitive receivers include, for example, landowners, businesses, and service providers nearby) • Operational noise impacts may include the operation of a solar tracking system, substation and switchyard, and maintenance works	• Affected residents living near the project • Affected landholders having farms in proximity to the project • Forbes Central West Livestock Exchange • Businesses nearby the project
	Visual	• There might be temporary visual impacts associated with construction activities (such as removal of vegetation) including machinery and temporary structures required for the project. Changes to visual amenity during the construction phase might result in diminished enjoyment of rural views for residents, especially those are living in proximity to the project • Once operational, potential impacts to surrounding sensitive receptors may include changes to existing rural views and solar glint and glare from the solar panels. Changes to visual characteristics might result in reduced enjoyment of the natural and rural landscape	• Adjoining or nearby residents • Local people who use or pass through the area • Tourists
Access	Access to property	• No impacts on property access are anticipated due to the movements of construction vehicles. Existing property access will be maintained during the whole construction phase of the project. However, access may be occasionally impacted (or delayed) for existing properties located on Back Yamma Road due to the movement of heavy construction vehicles. If any temporary changes to the property access are required, alternate access arrangements would be determined in consultation with affected property owners and tenants • Post construction, the project will generate negligible traffic and no neighbour's access to the local road network, power, communication or water would be impacted	• Residents along Troubalgie Road and Back Yamma Road
	Road & rail network	• Increased construction traffic might result in traffic congestion. Road users might experience inconvenience in utilising the road network due to increased construction traffic, causing congestion in areas close to the site • Increased construction traffic might result in deterioration of the condition of local roads, especially in areas in proximal to site access points • The transmission line would need to cross the rail line - construction may temporarily disrupt operations	• Road users • Local communities • Forbes Shire Council • Australian Rail Track Corporation

Social & environmental matters		Project activities likely to affect receptors (without mitigation)	Applicable stakeholders
		• The transmission line would need to cross the Newell Highway – construction may temporarily disrupt road users	
	Offsite parking	• During the construction phase, members of the project workforce may park their cars offsite. This could potentially impede local road use	• Local road users • Forbes Shire Council
	Utilities	• Potential impacts may include generation of waste during construction. Solid waste generated during construction would include packaging materials, metal off-cuts, cabling, excess building materials, general refuse and other non-putrescible general solid wastes • During operations, the project will require some permanent operational and maintenance staff, who will generate waste • The project will help achieve reliable, affordable and clean energy future for NSW Wales	• Forbes Shire Council • Local communities
Built environment	Public domain	• During construction, the workforce may use public spaces during their non-work days. The increase in users may detract from the regular (i.e., Forbes residents) user experience	• Residents of Forbes • Forbes Shire Council
	Public infrastructure	• The project would potentially increase demand on public infrastructure and services during construction due to the presence of non-local construction workforce. This may result in minor effects on existing public infrastructure	• Residents of Forbes • Forbes Shire Council • Parkes Shire Council
Heritage	Natural	• The project will involve some clearing of vegetation. The amenity of the natural environment enjoyed by nearby residents and tourists may be affected	• Residents/landowners living nearby the project • Tourists • Forbes Visitors Information Centre • Forbes Shire Council
	Cultural	• Loss of rural heritage values due to clearing and re-purposing of land may be perceived as a cultural loss	• Residents/landowners living nearby the project • Tourists • Forbes Shire Council
	Aboriginal cultural	• There might be potential effects on items and areas of cultural significance to Aboriginal People and on the integrity of Aboriginal cultural landscapes and stories • Potential impacts of the project may include disturbance of unknown Aboriginal heritage sites which may invoke feelings of hurt and sorrow for Aboriginal people	• Aboriginal and other persons who value Aboriginal heritage • Forbes Shire Council
	Built	• No predicted effects on built heritage	• Not applicable
Community	Health	• Temporary increased demand for health facilities and services due to the presence of construction workforce	• Existing medical and emergency services in Forbes and Parkes LGAs

Social & environmental matters		Project activities likely to affect receptors (without mitigation)	Applicable stakeholders
		• Prolonged exposure to elevated dust, noise and vibration can have a negative localised effect on health during the construction phase • Electromagnetic radiation exposure might be perceived by people who live close to transmission line and transformer station as having a negative health effect	• Residents/landowners living nearby the project and transmission line
	Housing	• There may be higher demand for short-term accommodation throughout construction which may result in a temporary decrease in availability • There is the potential for increased business opportunities for accommodation providers during construction	• Accommodation providers in Forbes and Parkes LGAs • Local members • Tourists
	Safety	• Project-related construction traffic movements have the potential to reduce public safety in the local area. Community safety might be affected by increased likelihood of vehicle collisions and associated injuries as well as misbehaviour due to the presence of construction workforce • Project-related construction traffic movements on school bus routes might potentially affect the safety of students traveling from and to schools	• Communities living along the traffic movement • Road users • Forbes Shire Council/ RMS • Students travelling on school bus routes • Schools in Forbes LGA
	Service & facilities	• The presence of construction workforce in the local area will result more people utilising community services and facilities. This might put pressure on service providers	• Local communities • Existing service and facility providers in Forbes LGA
	Cohesion	• There is the potential for polarisation of community sentiment regarding the project (and solar farm projects in general). Such difference of opinion may serve to reduce community cohesion • Diversification of the economy opportunity may have a positive effect on community capital and resilience	• Residents/landowners living nearby the project • Local communities
Economic	Natural resource use	• Use of the solar farm site may constrain future expansion of agricultural production for neighbouring properties	• Adjoining landowners
	Livelihood	• Construction is expected to generate positive economic impacts by creating employment opportunities. Increased employment opportunities may contribute to attracting more investment and people to Forbes and Parkes LGAs • Access to the solar farm site via Troubalgie Road and Newell Highway will generate traffic movements through these roads and creates a potential interaction with livestock. There are potential interruptions to farm services that may affect the efficient operation and sustainability of neighbouring agricultural businesses	• Project region jobseekers • Forbes Business Chamber- Forbes Shire Council • Forbes Business Chamber- Parkes Shire Council • Neighbouring agricultural businesses
	Economy	• The project will bring economic benefits to regional communities in the form of new investment, ongoing revenue from operations, direct and indirect business	• Forbes Business Chamber- Forbes Shire Council

Social & environmental matters		Project activities likely to affect receptors (without mitigation)	Applicable stakeholders
		opportunities for local suppliers and skills development opportunities for local workers • Positive effect on the diversification of the local economy and production of renewable energy during operations	• Forbes Business Chamber- Parkes Shire Council • Businesses and industries in Forbes and Parkes Shire Councils • Local and regional employment and training providers in Forbes and Parkes Shire Councils
	Opportunity cost	• Re-purposing land for the project which would otherwise support agricultural production and contribute to the rural landscape	• Forbes Shire Council • Central West Local Land Services
Air	Particulate matter	• Potential impacts during construction of the project may result from dust generation and vehicle emissions. Any activity that entails the use of plant and equipment on soil has the potential to generate localised dust emissions • The change in the existing land uses will reduce the potential for localised particulate emissions. As the principal source of dust is ground disturbance and wind exposure to an un-vegetated ground surface, cropping provides a greater risk of fugitive emissions than the project once in operation.	• Residents/landowners living nearby the project and access route
	Atmospheric emissions	• Truck and traffic movements generated by the project construction have the potential to reduce local air quality	• Communities living in the proximity to the project site and access route
Biodiversity	Native vegetation	• The main direct impacts of the project are generally associated with the clearing of vegetation	• Environmental conservation groups • Tourists • Local members
	Native fauna	• Increased vehicle movements associated with the project have the potential to result in increased fauna vehicle strikes and associated fauna mortality • The removal of vegetation has the potential to result in fragmentation of fauna habitat, with resultant effects on fauna species movement, reproduction and gene flow	• Environmental conservation groups • Tourists • Local members
Land	Capability	• Changing the land use of the project from agricultural use might diminish the productivity of the region in terms of primary production capabilities • The project would result in a change in land use from agriculture to electricity generation	• Forbes Shire Council • Central West Local Land Services
	Topography	• There might be a community concern relating to the land use changes associated with a large project footprint	• Forbes Shire Council • Central West Local Land Services
	Bushfire	• During operation, the BESS introduces potential hazards	• NSW Rural Fire Service Forbes • Forbes Shire Council

Social & environmental matters		Project activities likely to affect receptors (without mitigation)	Applicable stakeholders
	Electromagnetic field (EMF) hazards	• Impacts from an electromagnetic field (EMF) that may be generated by transmission lines and underground cables	• Forbes Shire Council
Water	Water quality	• Impacts to surface and groundwater water quality and quantity due to sediment runoff and/or contaminant runoff into adjacent watercourses during operation	• Adjoining landowners • Forbes Shire Council
	Hydrological flows	• Potential impacts to surface water may occur during construction, such as erosion and sedimentation	• Adjoining landowners • Forbes Shire Council

4.3 Stakeholder engagement

A core element of the SEIA is to gain an understanding of potential key stakeholders and engage them in a manner that allows the opportunity to convey thoughts and concerns in relation to project. An initial step in the engagement process was identification of key stakeholders. This was undertaken in collaboration with Pacific Hydro and other members of the EIS investigation team and involved analysis of potential socio-economic effects of the project and identification of specific stakeholders potentially affected by such effects. Identified stakeholders were cross referenced with those on other listings such as the Pacific Hydro's Community Engagement Plan. Key identified stakeholder groups were:

- Local Government Authority
- State agencies
- Local and regional employment and training providers
- Social and public service providers
- Accommodation providers
- Local businesses
- Community and local interest groups
- Adjoining and nearby landholders (within 5 km of the solar farm site).

In addition to targeted stakeholder engagement, a range of community engagement activities were also delivered as part of the EIS, providing additional insights into community sentiment regarding the Project. These have included:

- A project information fact sheet was mailed to a total of 3,389 local residences and businesses in December 2020. Both phone number and website contacts were provided for feedback; however, no complaints or concerns were received.
- A project update newsletter was mailed to 3,389 households and businesses in April 2021. This newsletter advised the dates and times of the upcoming community engagement sessions.
- Two face-to-face community engagement sessions were held in Forbes in May 2021:
  - Forbes Youth and Community Centre. Thursday 6th May 5.00pm – 9.00pm
  - Rotary Ipomoea Markets, Lions Park. Saturday 8th May 8.00am – 12.00pm

A summary of the feedback provided by stakeholders is provided in Table 4-2 below.

Table 4-2 Summary of key matters raised by stakeholders

Category	Stakeholder	Key issues raised
State Agencies	Department of Planning, Industry and Environment	• Matters associated with visual impacts, road upgrade and transport routes as well as soil suitability were raised during the meeting • Request that Fire & Rescue NSW and the Rural Fire Service be consulted regarding battery storage aspects • Recommend that the 'Large Scale Solar Energy Guideline' be consulted to help guide the project
	Roads and Maritime Service	• Advised that transmission line within/across the Newell Highway may be supported by RMS. However, there must be solid justification (e.g. no practical alternative(s) and demonstration of effort to pursue other options)- particularly as the Newell Highway is planned to be duplicated in the next 20-25 years • Request consideration of Livestock Exchange "sale days" schedule in project traffic planning and management • Recommend consideration of use of rail for delivery access to site, noting proximity of Parkes rail interchange/ Inland Rail project • Importance of health and safety and consideration of high accident rates associated with construction workers/ traffic
	NSW Fire and Rescue –	• Regarding bush fires, a water tank should be provided at site. Dams are sometimes not reliable due to drought.

Category	Stakeholder	Key issues raised
	Forbes and Parkes Parkes Police Forbes Police Rural Fire Service	• Back Yamma State Forest was not considered to be located close enough to pose substantial bushfire risk to the site • Regarding on-site vegetation management, vegetation should be appropriately managed under a vegetation management plan and pest management plan • Considered that there would be minimal socio-economic impacts. Issues have arisen in the past locally when contractors congregate together at the end of shifts, entered town and misbehaved. But otherwise, there have not been any major issues with similar projects. The Daroobalgie project doesn't present factors which are of any great concern • Management of contractors is key. Some local projects have utilised breath-testing to ensure contractor staff are not a risk to themselves or community • Regarding trends associated with public safety and security occurring in the region, general incidental theft of tools around the project area. The road itself receives high traffic volumes relative to the region due to its proximity to the Livestock Exchange • A key factor to policing in the region is distance from the town. If extra policing of the project area was required, this would be in addition to their current workload, affecting resourcing for overall policing of the Forbes/Parkes region • With other locally significant projects, police have observed that most security issues can be mitigated and managed by on-site security measures
Local government	Forbes Shire Council	• The Livestock Exchange saleyards are very important to the local economy. There are around $330 million in stock traded per year. A $4 million expansion is planned to increase capacity • Transmission line would cross over the railway – note there is a plan for double stacked containers. Therefore, the transmission line will need to be of sufficient height to cross the railway • There is also a current Inland Rail project planned– Stockinbingal to Parkes (a new 2.3 km crossing loop inside rail corridor located north of Daroobalgie Road). The project's transmission line will need to consider/ factor this in planning and design • Rental accommodation: – Rental accommodation is likely to be an issue – Four caravan parks are available in town – one is council owned. A local company AusCo (with facilities at Daroobalgie Industrial Precinct) provides accommodation for mining camps – The project could potentially approach the local community about rental houses, but this would need to be done in the right way – The Council's main concern is filling houses/ units / apartments (e.g. longer-term accommodation places), less concern about filling caravan parks / motels etc although the project should consider local events like Parkes Elvis Festival and the annual Forbes music festival • Traffic and Transport – There has been some flooding near Troubalgie Road- should be looked at in the flood assessment – Council suggests checking if there are any culverts / irrigation channels that cross the project area. If any, it is necessary to consider loads, especially transformers – There is potential for temporary laydown areas at the Industrial Estate – There is a rail siding at Forbes which could be considered for deliveries also. The area's rail infrastructure has benefited a lot from Inland Rail project(s). Parkes is also a transport hub

Category	Stakeholder	Key issues raised
		– The Council is interested to know how the project will deal with dust, particularly from Troubalgie Road. Council suggest looking at sealing that road. Also note that there is a school bus route which runs down Back Yamma Road – The Council preference is to use Back Yamma Road for access off the Newell Highway, noting that the junction at Forest Road would be very expensive to upgrade • Visual Impact – View from Ashburnham Road may be affected – this needs to be included in the visual impact assessment – Screening – the Council would prefer to see some visual landscape screening. Off-site screening at Ashburnham Road could be an option • Impact on local aircraft due to glare from the solar panels was raised. It was acknowledged that new solar panels do not reflect sunlight; so, glare should not be an issue • Regarding bushfire matters, the project should look to retain some of the dams on site. Water is available at the sale yards- recommended the project look into whether to get a connection to the site
Local businesses	Central West Livestock Exchange (CWLE)	• Sunday, Monday and Tuesday are considered to be high-traffic days. There is typically minimal traffic on other days. Forest Road receives significant traffic on those busy days • Traffic during construction was identified as being the key issue; however, CWLE supportive of the solar project and suggested that both businesses could work to find a solution in future as needed • Dust will be an issue during construction. Mitigation measures such as sealing Troubalgie road to the solar farm access point and dampening with water should be considered. Many neighbours in the area would be supportive of the road being sealed • It was mentioned by Pacific Hydro during the meeting that Pacific Hydro may require town water connection for construction/operations, and that Pacific Hydro made need to connect from close to the Livestock Exchange. No issues were raised regarding this possibility from CWLE • CWLE confirmed the consistent issue of housing/accommodation in Forbes/Parkes. Pacific Hydro mentioned that Forbes Shire Council had proposed several potential solutions but noted that temporary accommodation could be considered at the nearby industrial estate. CWLE did not raise issue with this. It was emphasised by Pacific Hydro that this was only currently hypothetical and suggested that accommodation requirements in Forbes and Parkes may be addressed closer to the commencement of construction
Community and local interest groups	Central West Lachlan Landcare	• Sharing of information about the project, its status during development of the project, project timeframes, and environmental issues • No issues were raised regarding flora and fauna impacts • Suggested that dust during the construction may be an issue with mitigation measures including the sealing of Troubalgie Road to the solar farm access point and dampening with water • The project would pose minimal visual nuisance given its locality and the low profile of the infrastructure • The area can receive extraordinary amounts of rain in short timeframes as evidenced by a storm event in 2017 which caused flooding along Back Yamma Road

Category	Stakeholder	Key issues raised
	Parkes Elvis Festival	• The current availability of accommodation in the area is very limited throughout Festival times. Especially, over the weekend, all accommodation is booked within Forbes and Parkes due to the Festival • If the project impacts are not proactively addressed, it may be possible that construction contractors may limit accommodation available for the Festival • Festival organisers, local accommodation and tourism businesses would be most acutely impacted • To minimise the impacts on accommodation, suggest project contractors are displaced from accommodation to allow for festival-goers on and around the relevant weekend • Regarding potential traffic impact from construction, there are shuttle buses running every half-hour from Forbes to Parkes across the Festival period. Throughout this time, contractor movement and deliveries may need to be managed
	Forbes and Parkes Business Chambers	• Forbes Business Chamber is very supportive of the project and is eager to assist with engagement in future • Forbes and Parkes Business Chambers confirmed that Forbes and Parkes are well resourced from a labour perspective to support the project due to recent solar developments in the region and a suitably skilled workforce. The Business Chamber's had a positive response to the proposed community benefit scheme associated with the project
	General Community	• Generally supportive of the Project and investment in the local area • Interest in potential job opportunities • Some concern about use of agricultural land and local flooding • Some concern about the lack of current recycling opportunities for PV panels at the end of life of the project
Affected landowners	Affected landholders	• Landholders rarely use aerial agriculture- may be twice in the last 10 years. Only use aerial agriculture when it is too wet for ground access. Equipment/options for ground treatment are generally far better these days • The solar farm site landholder suggested retaining the main central dam and a couple of others • Some concerns regarding visual impact and vehicle access for maintenance • The project will take a small piece of the landholder's overall land holdings. Otherwise there is minimal impact • No concerns besides possible water diversion and visual amenity

5 Socio-economic baseline

5.1 Overview

This Chapter documents the existing social environment, conditions and trends relevant to each of the social impacts identified during scoping. It provides a crucial benchmark against which direct, indirect and cumulative impacts can be predicted and analysed, and to understand the relevant pre-existing social trends. The baseline provides information on values and stakeholders that may be impacted by the project so as to inform conclusions regarding their relative sensitivity, vulnerability and/or importance. The socio-economic baseline is presented by the defined SEIA study areas outlined in Section 1.4. Some indicators are only reported at the regional study area level due to a deficiency of data at the local level. Key socio-economic indicators are outlined in Table 5-1.

Table 5-1 Outline of SEIA socio-economic baseline

SEIA study area	Locality	Baseline indicators
Local study area	SA1 1106517	Key indicators reported include: • Population profile • Disadvantage and vulnerability • Labour and employment • Dwelling occupancy and tenure • Housing availability and affordability • Short-term accommodation • Social infrastructure • Access and connectivity • Community values
Regional study area	Parkes UCL	Key indicators reported include: • Population profile • Labour and employment • Dwelling occupancy and tenure • Housing availability and affordability • Short-term accommodation • Social infrastructure
	Forbes LGA	Key indicators reported include: • Population profile • Population change and projections • Disadvantage and vulnerability • Labour and employment • Business and industry • Dwelling occupancy and tenure • Housing availability and affordability • Short-term accommodation • Social infrastructure • Access and connectivity • Community values

The findings presented in this section will be used as a baseline from which to assess potential socio-economic impacts of the project.

5.2 Local and regional context

The project is located within the Forbes LGA and is within Wiradjuri country, whose people are the largest Aboriginal Nation in NSW. The local study area has been defined within the ABS SA1 1106517 (refer to Section 1.4). The local study area includes the small rural village of Daroobalgie, with the remaining area sparsely populated and has been modified by agricultural activity associated with land clearing, cropping and livestock grazing. The Forbes Central West Livestock Exchange is located on Back Yamma Road, 2.5 km to the west of the site. Back Yamma State Forest is situated 7 km to the east and the closest National Park is Goobang National Park, 30 km to the northeast.

The regional study areas include Forbes LGA and Parkes UCL. The Forbes LGA is in the central west region of NSW. The area is home to the Wiradjuri traditional owners, whose settlement dates back more than 60,000 years. The Wiradjuri People are considered to have the largest (geographic) cultural footprint in NSW and second largest in Australia. European settlement of the area dates from around 1817, following exploration by the then Surveyor General, John Oxley. Early settlement was slow up until the discovery of the Lachlan Goldfields in 1861. A 'gold rush' ensued between 1861 and 1863, during which time the population of the Lachlan Goldfields reached about 30,000. By 1863 the 'gold rush' was over and the population of the area declined to about 3,500. Despite the end of the 'gold rush', other industries remained including a sawmill, vineyard, winery, pastoral and agricultural practices, and Forbes was declared a municipality in 1870. The area continued to develop throughout the 19th and early 20th centuries, aided by the construction of the railway in 1895 and Wyangala Dam in 1935.

In addition to the town of Forbes, the LGA includes the towns and villages of Bedgerebong, Bundbarrah, Corradgery, Daroobalgie, Eugowra, Ooma North and Paytens Bridge and Wirrinya. Forbes township is located on the Newell Highway between Parkes and West Wyalong. It is situated approximately 11 km from the project area and about 374 km from Sydney. Today Forbes is a significant rural centre noted for its fine parks and gardens and large gracious public buildings. The economy of the area is based around pastoral and agricultural practices, particularly beef cattle grazing, a major saleyard complex (i.e. - Forbes Central West Livestock Exchange), hay exports, wool, wheat, grain seed crops, oil seed crops, fruit and vegetables.

Parkes is a major town in the Central West region of NSW located approximately 30 km from the project. It is the main settlement in the local government area of Parkes Shire. Parkes is described as being ideally located along the Newell Highway, Australia's major inland road transport route, where it intersects with essential rail corridors. Parkes is an accessible and attractive destination for tourism, lifestyle and business. Parkes has a diverse economy with strong industries including transport, mining, health care, tourism, and agricultural and public administration. Parkes is also serviced by a regional airport with daily flights between Parkes and Sydney and can be accessed by coach and rail services to and from Sydney.

5.3 Population and demographic profile

5.3.1 Population profile

At the 2016 ABS Census, the population of the local study area (as defined in Table 1-1) was 210 people, representing around 2.2 per cent of the Forbes LGA total population (Table 5-2). The population of the regional study area was 19,561 people being 9,961 residents in Parkes UCL and 9,597 people in Forbes LGA. The local study area recorded a higher proportion of males than females, at 51.4 per cent. In Forbes LGA the percentage of males was 50.1 per cent. Conversely, Parkes UCL recorded a higher proportion of females, at 51.9 per cent. Seven residents of the local study area, or 3.3 per cent of the total population, were identified as Aboriginal and/or Torres Strait Islander at the 2016 Census, compared to 10.2 per cent 11.1 per cent for Parkes UCL and Forbes LGA respectively. Table 5-2 below provides the population profile of the SEIA study areas at the 2016 ABS Census.

Table 5-2 Population profile, 2016

Area	Population (2016)	Male		Female		Aboriginal and/or Torres Strait Islander	
	No.	No.	%	No.	%	No.	%
Local study area (SA1 1106517)	210	108	51.4%	102	48.6%	7	3.3%
Parkes UCL	9,964	4,790	48.1%	5,168	51.9%	1,020	10.2%
Forbes LGA	9,587	4,806	50.1%	4,784	49.9%	1,062	11.1%

Source: Australian Bureau of Statistics, Census of Population and Housing 2016 (2001.0).

Table 5-3 below shows the percentages of selected age groups identified in the 2016 Census, including children aged 14 years old or younger, people aged 15 to 64 years old who are considered the working age population, and people aged 65 years or older. At the 2016 Census, the local study area had a higher proportion of working age population at 60 per cent compared with Parkes UCL at 59.5 per cent and Forbes LGA at 58 per cent. The proportions of population 65 years and above accounted for 21 per cent in the local study area, 19.8 per cent in Parkes UCL and 21.7 per cent in Forbes LGA. Around 19 per cent of the local study area's residential were aged 14 years or younger, compared to 20.7 per cent and 20.3 per cent for Parkes UCL and Forbes LGA respectively.

Table 5-3 Proportion of selected age group, 2016

Area	14 years or younger		15 to 64 years		65 years or over		Total
	No.	%	No.	%	No.	%	No.
Local Study Area (SA1 1106517)	40	19.0	126	60.0	44	21.0	210
Parkes UCL	2,059	20.7	5,929	59.5	1,976	19.8	9,964
Forbes LGA	1,947	20.3	5,554	58.0	2,086	21.7	9,587

Source: Australian Bureau of Statistics, Census of Population and Housing 2016 (2001.0).

According to the 2016 Census, the total number of families in the local study area was 65 while Parkes UCL and Forbes LGA had 2,479 and 2,414 families respectively. The average household sizes in the local and regional study areas were the same with 2.4 persons. Structure of families includes couple family with children, couple family with no children, one parent family, and other family. Proportions of couple families with and without children were close across the study areas. Couple families with no children in the study areas were slightly higher than those with children. Of families in the local study area, 44.1 per cent were couple families with children, 44.1 per cent were couple families without children and 11.9 per cent were one parent families. Table 5-4 below shows the numbers and proportions of different family types in the local study area, Parkes UCL and Forbes LGA.

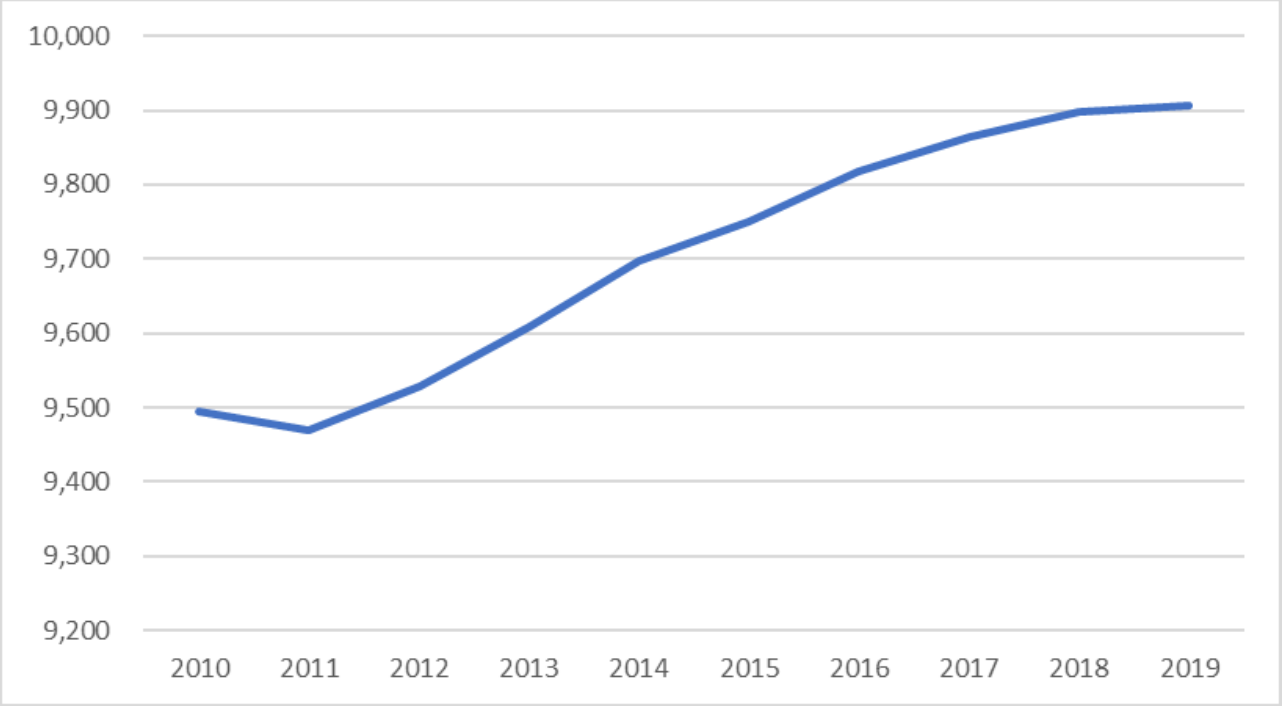
Table 5-4 Family types, 2016

Area	Couple family with no children		Couple family with children		One parent family		Other family	
	No.	%	No.	%	No.	%	No.	%
Local Study Area (SA1 1106517)	26	44.1	26	44.1	7	11.9	0	0
Parkes UCL	964	38.9	955	38.6	532	21.5	26	1%
Forbes LGA	1,072	44.4	896	37.1	408	16.9	41	1.7%

Source: Australian Bureau of Statistics, Census of Population and Housing 2016 (2001.0).

5.3.2 Population change and projections in Forbes LGA

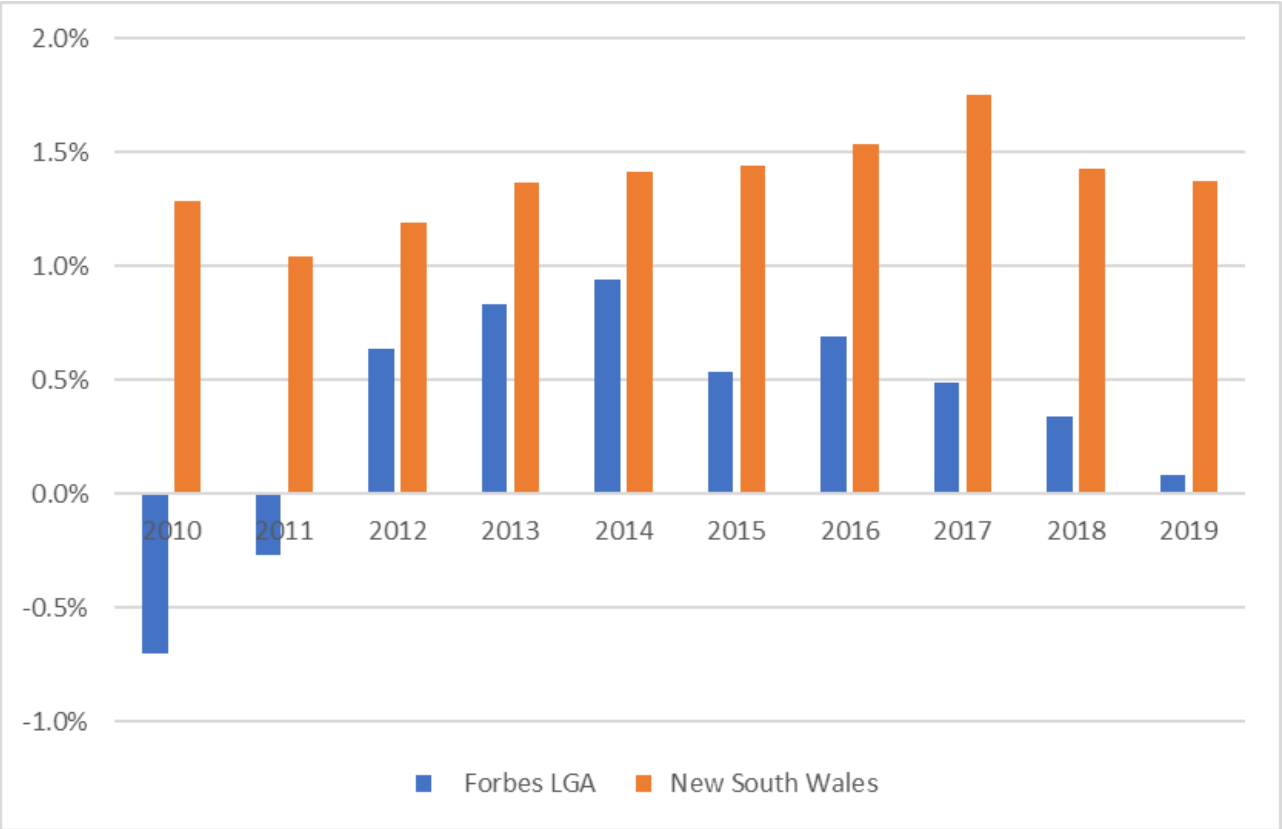
Data on population changes and projections are only available at LGA level. At June 2019, the estimated population of Forbes LGA was 9,906 people. Since 2010, the population has grown by 411 people, or 4.3 per cent. The population of Forbes recorded a decline in 2011 and increased from 2012 to 2019 (Figure 5-1).



Source: Australian Bureau of Statistics, Regional Population Growth, Australia (3218.0).

Figure 5-1 Estimated resident population of Forbes LGA, 2010 to 2019

From 2010 and 2019, Forbes LGA recorded much lower annual population growth rates compared to NSW as a whole. Forbes LGA's annual population growth rates were negative in 2010 and 2011. Although Forbes LGA's population showed an upward trend from 2012 to 2019, annual population growth rates in Forbes LGA declined from 2016 to 2019 (from 0.7 per cent in 2016 to 0.1 per cent in 2019). On average, over this ten-year period, Forbes LGA recorded an annual growth rate of only 0.4 per cent. In comparison, NSW recorded an annual population rate at nearly four times higher than Forbes LGA, at 1.4 per cent. Figure 5-2 below shows population change in Forbes LGA compared to NSW from 2010 to 2019.



Source: Australian Bureau of Statistics, Regional Population Growth, Australia (3218.0).

Figure 5-2 Population change in Forbes LGA compared to NSW, 2010 to 2019

The 2019 population projections for Forbes LGA indicate that the region is estimated to increase by 500 people between 2016 and 2041, from 9,800 to 10,300 people (Table 5-5). Over the 25 years from 2016, the population of Forbes LGA is forecast to increase by only 5.1 per cent.

Table 5-5 Projected population, households and dwellings for Forbes LGA, at 30 June 2019

Indicator	2016	2021	2026	2031	2036	2041
Population Projection	9,800	9,950	10,100	10,200	10,250	10,300
Households projection	4,000	4,150	4,250	4,350	4,400	4,450
Implied dwelling projection[a]	4,550	4,700	4,800	4,950	5,000	5,100

[a] Dwellings required if the population forms households in the same ways as in 2016.
Source: NSW Government 2019 Population Projections.

The Central West and Orana Regional Plan (Department of Planning and Environment, 2017b) supports the vision to enhance population growth in Forbes LGA, with the following priorities:

- Attract investment in value-adding manufacturing industries
- Enhance the agricultural sector and improved transport links and value-added production
- Encourage the development of employment-generating rural and agricultural industries
- Maintain and grow agricultural, livestock and meat processing industries
- Promote Forbes District Hospital as a regional medical training facility
- Protect important agricultural land from encroachment from residential development
- Attract tourism-related development, capitalising on Forbes's natural and built character.

5.3.3 Disadvantage and vulnerability

To assess the welfare and to determine social and economic wellbeing of Australian communities, the ABS has developed the Social-economic indexes of areas (SEIFA). The indexes are based on information from a five-yearly census of population and housing. The index provides a measure of socio-economic status based on low-income earners, relatively lower education attainment, high unemployment, people's access to material and social resources and their ability to participate in society. Indexes are provided as a score and decile. Low index values represent areas of most disadvantage and high values represent areas of least disadvantage (ABS, 2016).

Table 5-6 below provides index of relative socio-economic advantage and disadvantage for the local study area SA1 1106517 and Forbes LGA based on ABS 2016 data. Data on SEIFA at urban centre and locality level are not available; therefore, SEIFA scores for Parkes UCL cannot be provided. In 2016, the local study area recorded a SEIFA score of 1007 and decile of 5, while the Forbes LGA received a SEIFA score of 937 and decile of 3. While the local study area is not as disadvantaged as areas within the broader Forbes LGA, relative to the rest of NSW, the local study area is representative of average socio-economic disadvantage, while the Forbes LGA is representative of high levels of socio-economic disadvantage.

Table 5-6 Index of relative socio-economic advantage and disadvantage, 2016

Area	Scores	Rank within State (NSW)
	Score[3]	Decile[4]
Local Study Area (SA1 1106517)	1007	5
Forbes LGA	937	3

Source: Australian Bureau of Statistics, Socio-Economic Indexes for Australia, 2016. (2033.0.55.001).

Vulnerability relates to a group's capacity to adapt to, or cope with, changes to their social environment (Cutter et al., 2008). An understanding of the vulnerable groups relevant to the project is necessary as groups who display greater levels of vulnerability are likely to experience an impact differently. For example, low income households may have less capacity to benefit from social change. Understanding vulnerability and vulnerable groups across the study areas facilitates understanding of the differential distribution of impacts across stakeholder groups.

There are certain demographic characteristics that make some groups 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
- Socio-economic status, such as people who are a recipient of welfare and/or social housing and/or who are unemployed
- People with a need for assistance, such as those people requiring assistance in the core activities of self-care, mobility and/or communication because of disability, long-term health condition or old age
- Culturally and linguistically diverse populations, such as those people who do not speak English as a primary language.

A method for identifying growing vulnerable groups is to compare to NSW averages. Table 5-7 depict changes to key vulnerable groups in Forbes LGA, with NSW for comparison.

[3] **Scores:** a lower score indicates that an area is relatively disadvantaged compared to an area with a higher score. Scores should only be used in distributive analysis. To enable recognition of high and low scores, the SA1 index scores have been standardized to have a mean of 1000 and a standard deviation of 100 across all SA1s in Australia.

[4] **Deciles:** all areas are ordered from lowest to highest score, the lowest 10 per cent of areas are given a decile number of 1 and so on, up to the highest 10 per cent of areas which are given a decile number of 10. This means that areas are divided up into ten groups, depending on their score. Decile 1 is the most disadvantaged relative to the other deciles. Note that the area-based deciles presented in this data cube contain equal number of areas, not people.

Table 5-7 Vulnerable population groups in Forbes LGA, 2016

Indicators	Forbes LGA		Per cent change 2011 to 2016	
	2011 (No.)	2016 (No.)	Forbes LGA	NSW (for comparison)
Population	9,170	9,587	+4.5	+8.1
People aged 14 years or under	1,930	1,947	+0.9	+4.0
Youth (15 to 24 years)	1,073	1,112	+3.6	+5.0
People aged 65 years or older	1,787	2,086	+16.7	+19.6
Households earning less than $600/$650 a week	1,106	825	-25.4	-13.8
People who need assistance	543	532	-2.0	+18.8
Social housing households	163	138	-15.3	-2.9
Internet not accessed from occupied dwellings	1,198	925	-22.8	-23.0
Unemployed	218	225	+3.2	+14.7

Source: ABS 2011 and 2016 Census of Population and Housing, General Community Profiles (Cat. No. 2001.0). Compiled by the .id, the population experts.

Over the five years to the 2016 Census, some vulnerable groups in Forbes LGA have increased in size. However, the growth was at a much lower rate when compared to NSW as a whole. During this period, the growing vulnerable groups in Forbes LGA included: people aged 14 years or under, youth (15 to 24 years), people aged 65 years or older, and unemployed people.

5.4 Economic, labour and housing market profile

5.4.1 Labour and employment

At the 2016 Census, the local study area (SA1 1106517) recorded a labour force participation rate of 70 per cent, with 119 residents participating in the labour force. This rate was much higher than that recorded for Parkes UCL and Forbes LGA, with 53.2 per cent and 54.2 per cent respectively. Unemployment rates for the local study area and Forbes LGA were similar, at 5 per cent and 5.4 percent respectively. The unemployment rate in Parkes UCL was highest at 7.9 per cent. Table 5-8 below provides the labour force profile of the SEIA study areas in 2016.

Table 5-8 Labour force profile, 2016

Area	Labour force		Unemployed		Total population aged 15 years and over
	No.	%	No.	%	No.
Local Study Area (SA1 1106517)	119	70.0%	6	5%	170
Parkes UCL	4,209	53.2%	332	7.9%	7,905
Forbes LGA	4,167	54.5	225	5.4	7,640

Source: ABS 2011 and 2016 Census of Population and Housing, General Community Profiles (Cat. No. 2001.0).

As at 2016 ABS Census, of the employed people in the local study area (SA1 1106517), the top five industries of employment include:

- Sheep Farming (Specialised), employing 14 residents (21.2 per cent)
- Sheep-Beef Cattle Farming, employing 12 residents (18.2 per cent)
- Other Grain Growing, employing 11 residents (16.7 per cent)
- Beef Cattle Farming (Specialised), employing 7 residents (10.6 per cent)
- Road Freight Transport, employing 4 residents (6.1 per cent).

The review of employment by industry in the regional study area (including Parkes UCL and Forbes LGA) shows the top industries of employment for Parkes UCL are as follows:

- Retail Trade (492 residents accounting for 12.7 per cent)
- Health Care and Social Assistance (491 residents accounting for 12.7 per cent)
- Accommodation and Food Services (338 residents accounting for 8.7 per cent)
- Mining (334 residents accounting for 8.6 per cent)
- Public Administration and Safety and Basic chemical and chemical product manufacturing (323 residents accounting for 8.3 per cent)
- Transport, Postal and Warehousing (261 residents accounting for 6.7 per cent).

The following are the top industries of employment for Forbes LGA:

- Agriculture, Forestry and Fishing (714 residents accounting for 18.1 per cent)
- Health Care and Social Assistance (454 residents accounting for 11.5 per cent)
- Retail Trade (443 residents accounting for 11.2 per cent)
- Education and Training (402 residents accounting for 10.2 per cent)
- Construction (259 residents accounting for 6.6 per cent).

Table 5-9 below provides details of employment by industry in the SEIA regional study area.

Table 5-9 Employment capacity by industry, Parkes UCL and Forbes LGA, 2016

Industry	Parkes UCL		Forbes LGA	
	Number	Per cent	Number	Per cent
Agriculture, Forestry and Fishing	105	2.7	714	18.1
Mining	334	8.6	114	2.9
Manufacturing	163	4.2	192	4.9
Electricity, Gas, Water and Waste Services	57	1.5	42	1.1
Construction	223	5.7	259	6.6
Wholesale Trade	90	2.3	131	3.3
Retail Trade	492	12.7	443	11.2
Accommodation and Food Services	338	8.7	208	5.3
Transport, Postal and Warehousing	261	6.7	141	3.6
Information Media and Telecommunications	22	0.6	12	0.3
Financial and Insurance Services	55	1.4	58	1.5
Rental, Hiring and Real Estate Services	34	0.9	30	0.8
Professional, Scientific and Technical Services	108	2.8	122	3.1
Administrative and Support Services	114	2.9	68	1.7

Industry	Parkes UCL		Forbes LGA	
	Number	Per cent	Number	Per cent
Public Administration and Safety	323	8.3	185	4.7
Education and Training	323	8.3	402	10.2
Health Care and Social Assistance	491	12.7	454	11.5
Arts and Recreation Services	24	0.6	23	0.6
Other Services	175	4.5	145	3.7
Total industries[(a)]	**3,880**	**100.00**	**3,944**	**100.00**

(a) Includes inadequately described and not stated responses.
Source: ABS 2011 and 2016 Census of Population and Housing, General Community Profiles (Cat. No. 2001.0).

Analysis of the occupation profile shows that in 2016, occupations such as professionals, technician and trades workers, and clerical and administrative workers are in the top five employment by occupation in the SEIA regional study area. In detail, the top occupation sub-groups of employment for Parkes UCL were:

- Technicians and trades workers (15.8 per cent)
- Professionals (15.3 per cent)
- Clerical and administrative workers (12.5 per cent)
- Community and personal service workers (11.5 per cent)
- Machinery operators and drivers (11.1 per cent).

The top employment by occupation in Forbes LGA were as follows:

- Managers (19.2 per cent)
- Professional (14.2 per cent)
- Technicians and trades workers (13.9 per cent)
- Labourers (12.9 per cent)
- Clerical and administrative workers (10.1 per cent).

Table 5-10 below shows the proportion of occupational groups across Parkes UCL and Forbes LGA.

Table 5-10 Employment by occupation, Parkes UCL and Forbes LGA, 2016

Occupation	Parkes UCL		Forbes LGA	
	Number	Per cent	Number	Per cent
Managers	424	10.9	758	19.2
Professionals	595	15.3	560	14.2
Technicians and trades workers	612	15.8	549	13.9
Community and personal service workers	446	11.5	382	9.7
Clerical and administrative workers	468	12.1	398	10.1
Sales workers	422	10.9	379	9.6

Occupation	Parkes UCL		Forbes LGA	
	Number	Per cent	Number	Per cent
Machinery operators and drivers	431	11.1	322	8.2
Labourers	402	10.4	508	12.9
Total[(a)]	**3,880**	**100.00**	**3,944**	**100.00**

(a) Includes inadequately described and not stated responses.
Source: ABS 2011 and 2016 Census of Population and Housing, General Community Profiles (Cat. No. 2001.0)

The occupation profile in Parkes and Forbes LGA in 2016 indicates that there is potential to provide labour and skills for the project. Both Parkes and Forbes LGA had high percentage of skilled labour, such as technicians and trader workers and machinery operators and drivers. Based on the Australian Industry Group Construction Outlook survey conducted in 2018, the top occupations where construction businesses expect to experience the greatest skill shortages were technicians, trade workers, as well as machinery operators and drivers.

5.4.2 Business and industry

The Forbes economy supports an estimated 3,991 jobs, representing 5.39 per cent of 73,991 people working in the Central West Region, 0.12 per cent of the 3,358,119 people working in NSW, and 0.04 per cent of the 10,683,322 people working in Australia. Gross regional product in Forbes LGA is $534.8 million. The agriculture, forestry and fishing is Forbes's largest industry in terms of output, valued at $183 million, with manufacturing valued at $173 million (REMPLAN, 2019).

Business counts are based on snapshots of actively trading businesses at June 2019, derived from the ABS business register. Data associated with registered businesses by industry are available at SA2 and LGA levels only. Therefore, the number of registered businesses in this section are only provided for Forbes LGA. Based on the 2019 Australian Bureau of Statistics Business Register (ABSBR), in 2019, there was 1,151 registered businesses in Forbes LGA. The industry with the largest number of registered businesses was agriculture, forestry and fishing (42 per cent), followed by construction (11.3 per cent). Rental, hiring and real estate services was the third largest business counts by industry in the Forbes LGA (8.3 per cent). Table 5-11 below provides the number and percentage of registered businesses by industry in Forbes LGA.

Table 5-11 Registered businesses by industry, Forbes LGA, at June 2019

Industry	Forbes LGA	
	Number	Per cent
Agriculture, forestry and fishing	483	42.0
Mining	4	0.3
Manufacturing	35	3.0
Electricity, gas, water and waste services	10	0.9
Construction	130	11.3
Wholesale trade	44	3.8
Retail trade	53	4.6
Accommodation and food services	39	3.4
Transport, postal and warehousing	56	4.9
Information media and telecommunications	0	0.0
Financial and insurance services	41	3.6
Rental, hiring and real estate services	96	8.3

Industry	Forbes LGA	
	Number	Per cent
Professional, scientific and technical services	41	3.6
Administrative and support services	23	2.0
Public administration and safety	3	0.3
Education and training	3	0.3
Health care and social assistance	23	2.0
Arts and recreation services	6	0.5
Other services	61	5.3
Currently unknown	0	0.0
Total	**1,151**	**100.00**

Source: Australian Bureau of Statistics, Counts of Australian Businesses, including Entries and Exits, 2019.

The Forbes Central West Livestock Exchange operates nearby on Back Yamma Road selling livestock through weekly sales auctions. It is understood that these sales are typically scheduled on Mondays and Tuesdays. There are also numerous engineering/fabrication businesses in Forbes including a number in the General Industrial Zone (IN1) to the west of the Livestock Exchange on Back Yamma Road. As mentioned in Section 5.5.1, as at 2016, 3,944 people work in Forbes with the largest employer being agriculture, forestry and fishing, followed by healthcare, social assistance and retail trade.

5.4.3 Local renewable industry

The project will be one of the larger solar projects in the area. The following major large-scale renewable energy projects may be relevant to the proposed Daroobalgie solar farm:

- The 50 MW Jemalong Solar PV Plant located 30 km west of Forbes was granted development consent on 18 May 2018. The project commenced operations in Q2 2021
- The 68.7 MW Goonumbla Solar Farm is located approximately 10 km to the west of Parkes, adjacent to the Parkes Solar Farm. Construction was completed and generation commenced in Q3 2020
- The 80 MW Quorn Park Solar Farm, including 20 MWh battery storage, located 8.5 km to the west of Parkes was granted development consent on Q3 2020. Construction is expected to commence Q3 2021
- The 66 MW Parkes Solar Farm began operations in 2018.

Parkes was also the first Special Activation Precinct announced by the NSW Government under the NSW Government's 20 Year Economic Vision for Regional NSW released in 2018. Special Activation Precincts are:

> "A dedicated area in a regional location identified by the NSW Government to become a thriving business hub. Precincts will create jobs, attract businesses and investors, support local industries and fuel economic development. This is all part of our plan to ensure regional NSW is well placed to grow and meet future economic needs across a range of industries, including:"
>
> - Freight and logistics
> - Defence
> - Advanced manufacturing
> - Renewable energy
> - Agribusiness
> - Tourism
> - Recycling and waste management
> - Critical minerals.

The Parkes Special Activation Precinct Mast Plan (NSW Government, 2020) includes a solar sub-precinct. There is the potential for cumulative socio-economic and traffic and transport impacts and benefits arising from these and other renewable energy developments in the region. These are outlined in Chapter 6.

5.5 Housing profile

5.5.1 Dwelling occupancy and tenure

Dwelling characteristics recorded in the local study area were similar to that recorded for Parkes UCL and Forbes LGA. Around 81.9 per cent of private dwellings in the local study area were occupied compared with 87.6 per cent in Parkes UCL and 86.8 per cent in Forbes LGA. Households in the local study area also recorded the lowest proportion of dwellings owned outright or with a mortgage (at 61 per cent) compared to Parkes UCL (at 62.2 per cent) and Forbes LGA (at 67.8 per cent). Of the 972 dwellings rented within the Forbes LGA at the 2016 Census, 138 dwellings, or 14.2 per cent, were social housing. In Parkes UCL, the number of social housing was 197 dwellings which comprised of 16 per cent of rented dwellings in Parkes UCL. Table 5-12 below provides dwelling characteristics in the SEIA study areas according to the 2016 ABS Census.

Table 5-12 Dwelling characteristics, 2016

Area	Occupied private dwellings		Dwelling owned outright or with a mortgage		Dwelling rented	
	No.	%	No.	%	No.	%
Local Study Area (SA1 1106517)	77	81.9%	47	61.0%	18	26.5%
Parkes UCL	3,656	87.6%	2,273	62.2%	1,232	33.6%
Forbes LGA	3,503	86.8%	2,374	67.8%	972	27.8%

Source: Australian Bureau of Statistics, Census of Population and Housing 2016 (2001.0)

5.5.2 Housing availability and affordability

The number of dwellings for sale in the SEIA study areas is provided in Table 5-13 as at June 2020. Dwellings for sale include property types such as house, apartment and unit, townhouse, villa, block of units, and retirement living. As at June 2020, there were no dwellings available for sale in the local study area. The regional study area had a total of 296 properties on the market being 187 in Parkes and 109 in Forbes LGAs.

Table 5-13 Number of dwellings for sale and rent (April 2021)

Locality	For Sale	Rentals
Local Study Area (SA1 1106517)	0	0
Parkes UCL	167	24
Forbes LGA	68	8
TOTAL	**235**	**32**

Source: realestate.com.au[5]

Regarding housing affordability, housing valuation and rental data are a measure of the economic desirability of living in localities. High and increasing rents are an indication of a strong economy and a desirable area, with access to jobs and services. Units are more commonly rented than houses, and renters tend to be younger than homeowners on average. People may rent to be close to employment, entertainment and services, or they rent while saving to buy a home. Housing prices often factor in a home ownership premium, but rental costs are a more direct measure of the

[5] https://www.realestate.com.au for Forbes LGA and Parkes. Accessed 2 June 2020.

time-value of living in the area. Increases in rents often have a more direct relationship to employment and demand for housing.

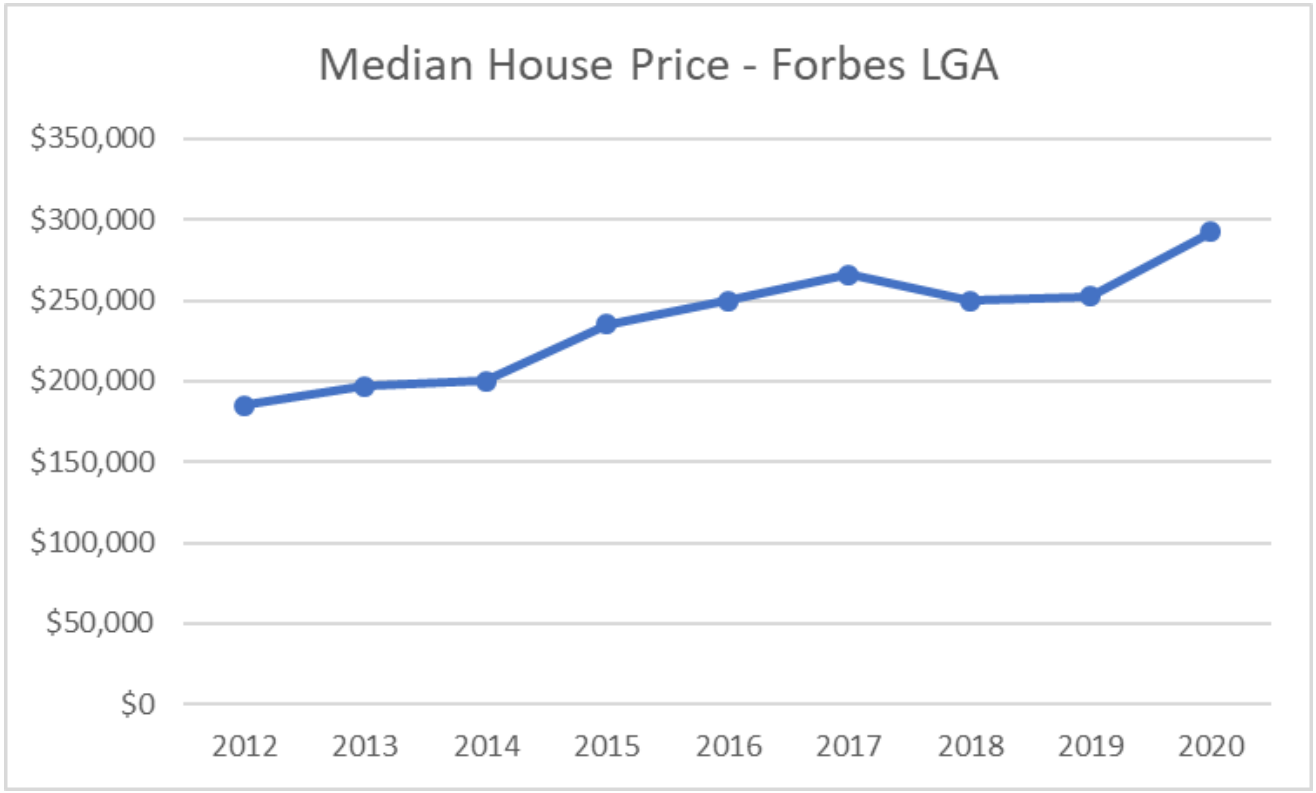
Housing valuation and rental data for the SEIA regional study area including Forbes LGA and Parkes UCL could not be found at Hometrack – Housing Valuation System; however, such data for Parkes LGA were available. Hence, data on house valuation and rental of Forbes LGA were sourced from other available online sources (including realestate.com.au and propertyvalue.com.au) and data on housing valuation and rental of Parkes UCL could be factored through information available at Parkes LGA level.

As at 11 March 2021, Forbes LGA had a median house valuation of $295,000. Of house types, the median price of four-bedroom houses in Forbes was $420,000 while the average prices of the three-bedroom and two-bedroom houses were $252,500 and $245,000 respectively. Data on the median unit price were not available.

The trend in house values in Forbes shows a relatively small annual increase from 2012 to 2017, when median property prices increased $185,000 in 2013 to $266,000 in 2017. Median house prices fell between 2017 and 2018, from $266,000 to $250,000, before increasing again in 2019 to $252,500, and in 2020 to $292,500 (realstate.com.au 2020)[6].

Figure 5-3 below illustrates median house values in Forbes LGA from 2012 to 2019.

Figure 5-3 Median house values in Forbes LGA from 2014 to 2019



Source: realestate.com[7]

As at 13 March 2021, Forbes had a median house rent of $300 per week (including $255 per week for two-bedroom houses; $300 per week for three-bedroom houses, and $370 per week for four-bedroom houses). The median rent for a 2-bedroom unit in Forbes was $255 per week.

At 11 March 2021, Parkes LGA had a median house valuation of $302,500. At 13 March 2021, Parkes LGA had a median house rental of $320 per week, and a median unit rental of $220 per week.

[6] https://www.realestate.com.au/neighbourhoods/forbes-2871-nsw accessed 2 June 2020.

[7] https://www.realestate.com.au/neighbourhoods/forbes-2871-nsw accessed 2 June 2020.

5.5.3 Short-term accommodation

The Forbes LGA has a full range of accommodation options from luxury hideaways to a variety of camping options. Forbes boasts over 470 beds available for visitors. In addition to major standard accommodation types, Forbes also has bed and breakfast and self-contained style accommodation options. Parkes offers quality accommodations options with approximately 1,500 bed spaces. Accommodation options include hotels, motels, and caravan parks. Table 5-14 outlines short-term accommodation options within one-hour drive of the project site. These short-term accommodation options are primarily used for accommodation of tourists, workers, sales businesses, public services, and social service staff. Vacancy rates are not publicly available.

Table 5-14 Short-term accommodation types within one-hour drive from the project

Accommodation type	Description
Hotels and motels	• 20 hotels and motels in Forbes • 26 hotels and motels in Parkes
Caravan parks	• Forbes Caravan and Cabin Park • Forbes River Meadows Caravan Park • Apex Riverside Tourist Park • BIG4 Forbes Holiday Park • Newell Highway Motel and Caravan Park • Spicer Caravan park • Parkes Overnighter Caravan Park
Airbnb	• 72 Airbnb accommodation options in Forbes as at 5 March 2021 • 92 Airbnb accommodation options in Parkes as at 5 March 2021
Property listing for rent	• 7 rental properties in Forbes as at 5 March 2021 (retrieved from realestate.com.au) • 30 rental properties in Parkes as at 5 March 2021 (retrieved from realestate.com.au)

5.6 Social infrastructure

The provision of infrastructure, facilities and services is a critical factor affecting community well-being. Deficient social infrastructure can have adverse impacts on the region's ability to attract inward migration and to retain a permanent population to contribute to community development and economic growth. Major projects may impact both demand for and supply of social infrastructure. Key social infrastructure, facilities and services available in the regional study areas – Forbes and Parkes are listed in Table 5-15.

The regional study area offers a variety of social infrastructure and amenities. Regarding education services, there are 11 early childhood education and care services and 12 schools (including primary, secondary and combine primary-secondary). In addition, two TAFEs exist in the regional study area which offer a range of practical courses in vocational access and general education, together with trade programs such as carpentry and joinery, along with a range of primary industries and natural resources.

Hospital and health services in Forbes and Parkes provide a range of services including acute care, arthritis, heart, gastroenterology, general medicine, general surgery, kidney medicine, maternity, heart and respiratory. Police and emergency services are available in the regional study area. There are a wide range of community facilities, sports and recreational services, as well as parks and reserves.

Table 5-15 List of key social infrastructure, facilities and services in Forbes and Parks regions

Type	Area	Facility/Infrastructure
Early childhood education and care services	Forbes	• Forbes Learning Ladder • Goodstart Early Learning Forbes • Bright Beginnings Early Learning Centre • Forbes Preschool Kindergarten
	Parkes	• Community Kids Parkes Early Education Centre • Victoria Street Children's Centre • Parkes Middleton Preschool • Central West Family Day Care Scheme • Karijini Kids Family Day Care • Parkes Early Childhood Centre • PCYC- Out of School Hours Parkes
Education services	Forbes	• Forbes Public School • Forbes North Public School • Forbes High School • St Laurance's Parish School • Red Bend Catholic School • Central West Community College Inc (Forbes) • TAFE NSW - Forbes
	Parkes	• Parkes Public School • Middleton Public School • Parkes East Public School • Parkes High School • Parkes Christian School • Central West Community College Inc (Parkes) • TAFE NSW - Parkes
Hospital and Health Services	Forbes	• Lachlan Health Service – Forbes • Forbes District Hospital • Forbes Medical Centre • Forbes Community Health Centre
	Parkes	• Parkes Hospital • Lachlan Health Service - Parkes • Parkes Community Health Centre
Emergency services and facilities	Forbes	• Forbes Police Station • Forbes SES Facility • Forbes Fire Station • Forbes Ambulance Station
	Parkes	• Parkes Police Station • Parkes SES Facility • Parkes Fire Station • Parkes Ambulance Station
Community facilities	Forbes	• The Youth and Community Centre (YACC) • Forbes Home and Community Care Centre (HACC) • Forbes Court House • Forbes Visitor Information Centre

Type	Area	Facility/Infrastructure
		• Forbes Post Office • Forbes Library • 5 Churches in Forbes • Forbes and District Historical Museum
	Parkes	• Parkes and District Neighbourhood and Community Information Centre • Parkes Community Services Centre • Parkes Visitor Information Centre • Court House • Parkes Forbes Post Office • Parkes Library • 14 Churches in Parkes • Parks Aviation Museum • Henry Parkes Centre
Sports and recreational facilities	Forbes	• Forbes Sport & Recreation Club • Red Bend Catholic College Pool • Forbes Olympic Pool • Forbes Services Memorial Club
	Parkes	• Parkes Swimming Pool • Parkes Bowling and Sports Club • Bumberry Dam • McGlynn Sporting Complex • Pioneer Oval • Parkes Services Club Bistro
Parkes and reserves	Forbes	• BIG4 Forbes Holiday Park • Apex Park • Apex Riverside Tourist Park • Forbes Community Park • Meagher Park • Lake Forbes Water Park • Victoria Park • Sir Francis Forbes Park • Nelson Park • Forbes River Meadows Caravan Park • Crippen Park • Green Park • Tintuppa Park • King George V Memorial Park • Botanical Garden Sporting Grounds • Pilgrim Hill TSR Reserve • Gum Swamp & Bird Hide
	Parkes	• AE Fox Park • Bernard McGuire Park • Boulder Hill Park • Bushman's Hill • Campbell Park • Cooke Park • Cooper's Park • Davey Park

Type	Area	Facility/Infrastructure
		• Fisher Reserve • Giles Park • Heraghty Park • Kelly Reserve • Lions Memorial Park • Mazoudier Park • Memorial Hill Rotary Arboretum • Middleton Street Park • Moon Crescent Park • O'Donnell Park • PAC Park • Panorama Crescent Reserve • Quote Park • Rotaract Park • Scoble Place Park • Swindle Park • Thomas tom Park • Widgeram Park • Wilsmore Park

5.7 Access and connectivity

5.7.1 Transportation network

The solar farm site fronts onto Troubalgie Road, and as such the primary access to the site is directly from Troubalgie Road. The ETL will traverse both private property and road reserve between the solar farm site and the switchyard site. Access along the easement will be via several access points at either Troubalgie Road, Forest Road and Daroobalgie Road. The ETL will also cross the Newell Highway and Stockinbingal-Parkes railway line. The switchyard site is accessed via an unnamed access road from Daroobalgie Road.

Troubalgie Road is an unpaved, single-carriageway, local road. Troubalgie Road can be accessed from the Newell Highway via either Back Yamma Road (a paved, single-carriageway local road) or Forest Road (an unpaved, single-carriageway local road). Troubalgie Road primarily services local traffic and agricultural operations. The Newell Highway is a National Highway and a major transport route. Daroobalgie Road is a paved, single-carriageway local road up to the switchyard site and is accessed from the Newell Highway.

The primary means of transportation on the roads surrounding the project are via private vehicles. The project is not located near major transport interchanges or public transport hubs, however designated school bus services operate in the vicinity of the project. The towns of Forbes and Parkes provide regional transport interchanges with services to and from nearby regional areas including Dubbo, Lithgow, and Orange, as well as capital cities including Canberra, Brisbane, Sydney and Melbourne.

The Stockinbingal-Parkes railway line, managed by the Australian Rail Track Corporation (ARTC) is located close to the solar farm site, to the west of the Newell Highway. This railway line will soon form a section of the Melbourne to Brisbane Inland Rail. Parkes, approximately 25 km from the project, will also soon be at the crossroads of the Inland Rail and Sydney to Perth transcontinental railway. The project will explore the use of rail for haulage of project components. Rail is a safe, efficient, and ideal choice for transporting the many intermodal shipping containers that will be used to deliver solar panels and other components.

The nearest airports providing passenger services to regional and capital cities is the Parkes Airport, located approximately 44 km (by road) from the solar farm site. The airport services daily flights from Sydney, with domestic and international connections available in Sydney.

5.7.2 Travel behaviour and transport safety

Forbes Shire's commuting statistics reveal the main modes of transport by which residents get to work. There are a number of reasons why people use different modes of transport to get to work including the availability of affordable and effective public transport options, the number of motor vehicles available within a household, and the distance

travelled to work. Residents within Forbes LGA generally demonstrate low usage of public transport. On Census Day 2016 in Forbes Shire, 73.3 per cent of people travelled to work in a private car, 0.7 per cent took public transport and 5.0 per cent rode a bike or walked. Of people travelling to work by car, 66.1 per cent of residents within Forbes LGA recorded that they travelled to work by car as driver. The proportion of workers travelling as a passenger was at 5.2 per cent. Walking or cycling to work (active transport) only accounted for a small percentage of travel (4.9 per cent). Table 5-16 below provides available data on method of travel to work in 2016 in Forbes LGA.

Table 5-16 Journey to work mode of travel in Forbes LGA 2016

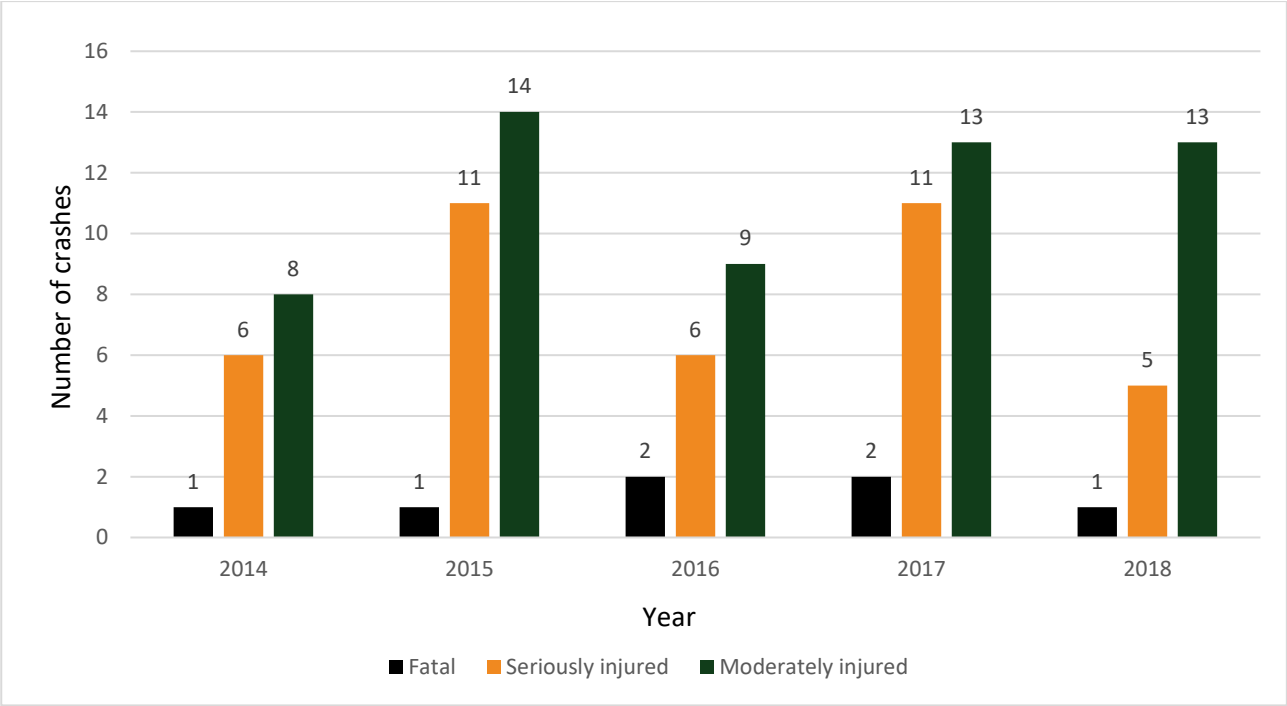
Travel mode	Forbes LGA	
	No.	%
Train	0	0
Bus	27	0.7
Tram or Ferry	0	0
Taxi	10	0.3
Car – as driver	2,604	66.1
Car – as passenger	203	5.2
Truck	60	1.5
Motorbike	19	0.5
Bicycle	14	0.4
Walked only	181	4.6
Other	55	1.4
Worked at home	373	9.5
Did not go to work	334	8.5
Not state	57	1.4
Total employed persons aged 15+	**3,937**	**100.0**

Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016. Compiled and presented by .id , the population experts.

Road crash data obtained from Transport for NSW were extracted for Forbes LGA from 2014 to 2018 and are provided in Source: Transport for NSW, Centre for Road Safety. NSW Government.

Figure 5-4 below. Over the five-year period from 2014, there have been 7 fatal crashes in Forbes LGA, 39 crashes caused serious injury and a further 57 crashes caused moderate injury (Source: Transport for NSW, Centre for Road Safety. NSW Government.

Figure 5-4). In 2018, there was one crash which resulted in fatalities, and 18 crashes which resulted in serious or moderate injuries. In general, the overall number of crashes has been gradually increasing in Forbes LGA during 2014 to 2018 (15 crashes in 2014 compared with 19 crashes in 2018).



Source: Transport for NSW, Centre for Road Safety. NSW Government.

Figure 5-4 Number of crashes and crash severity in Forbes LGA, 2014 to 2018

5.8 Community values

Community values are values held as important to residents for quality of life and wellbeing. They relate to things such as:

- Local amenity and character
- Sense of community, social cohesion and quality of life, including community safety
- Intangible connections to place.

The Forbes Shire Community Strategic Plan 2017 - 2027 is the blueprint to create a vibrant and innovative region that values heritage, environment, culture, diversity and a strong economy.

5.8.1 Sense of community, social cohesion and quality of life

The Forbes Shire Community Strategic Plan 2017-2027, developed through stakeholder and community consultation, reflects the shared-values of the community, which include:

- A strong sense of community pride and spirit
- Love of the picturesque, open landscape and of the quiet, rural lifestyle
- A peaceful, safe environment for families
- Protection of prime agricultural land
- The culture of the Wiradjuri People.

The key priorities or directions for the Forbes LGA set in the Forbes Shire Community Strategic Plan 2017-2027 are:

- Community and culture, including active participation in sporting and cultural events, adequate facilities, support for volunteerism and strategies to address social isolation
- Local economy, including protection of prime agricultural land, water security, increased vocational training and collaboration to help local businesses meet the challenges of a changing economy
- Natural environment, including addressing climate change and land degradation, preservation of bushland, responsible use and management of crown land and education to promote sustainable living
- Rural and urban land use, including preservation of agricultural land, balancing growth and the preservation of the rural amenity, main street enhancements and greater cooperation across government in these areas

- Infrastructure and services including ongoing maintenance of roads, well-planned community infrastructure, improved telecommunications infrastructure, local education and training, a reliable water supply and the long-term sustainability of the local aerodrome.

Forbes LGA has strong local networks, community connection and support which engender community cohesion. Forbes Shire Council runs community events throughout the year, bringing people from both within and outside of the LGA together. Example of this is include the Forbes Show, Grazing Down the Lachlan, Taste on Templar, Forbes NSW Rural Women's gathering, and River Art Festival Forbes. These events provide opportunities for people to meet and interact each other, with these informal connections and networks often building a sense of community and belonging.

Volunteering is another factor by which to measure community strength. The level of volunteering in a community can indicate the connection of the community and how individuals are able to support each other and contribute to that community. Based on the 2016 Census, Forbes LGA has higher rates of volunteering compared to NSW as a whole, with 25.1 per cent of the population aged 15 years and over having volunteered. By comparison the NSW average for the population aged 15 years and over was 18.1 per cent (Table 5-17).

Table 5-17 Number of people aged 15 years and over who volunteered, Forbes LGA compared with NSW 2016

Area	Engaged in voluntary work	
	No.	%
Forbes LGA	1,917	25.1
NSW	1,103,790	18.1

Source: Australian Bureau of Statistics, Census of Population and Housing 2016 (2001.0).

5.8.2 Local amenity and character

Amenity refers to the quality of a place, its appearance, feel and sound, and the way the community experiences the place. Aesthetic qualities are an important part of amenity, but the broader concept of amenity is determined also by the physical design of a place and the human activity that takes place within it. Amenity is a characteristic of a community that is determined by the physical environment, yet it depends on the human response to that environment. A place that has 'amenity' is regarded as pleasant and attractive, as well as convenient and comfortable.

The project site and surrounds are currently used for pastoral and agricultural purposes. The local study area is considered as a rural area, and hence communities are likely to value amenity values that come with this, such as clean and fresh air, open vistas etc. The Forbes Shire is famous for its historic buildings and important heritage places, many listed by the National Trust of Australia (NSW). Forbes offers a range of attractions such as McFeeters Motor Museum, Lake Forbes and the Lachlan River, the Forbes Central West Livestock Exchange, Ben Hall's Place, or bird watching at the Gum Swamp wildlife refuge. The rural landscape of Forbes has important cultural and tourist value. The landscape is important to the region's identity and character. The community has a desire to protect the local natural landscape and rural views and vitas.

5.8.3 Community safety

Data from the NSW Bureau of Crime Statistics and Research (BOCSAR) as at March 2021 indicate that the majority of offence types in Forbes are maintaining a stable trend (Table 5-18). The LGA rank compares the rate of crime in the Forbes LGA with the rate in all 120 LGAs in NSW that have populations greater than 3,000 people. A ranking of 1 indicates the highest rate of crime. Table 5-18 indicates that that 'steal from motor vehicle', 'steal from dwelling', and 'malicious damage to property' were the top three offence types within Forbes LGA in 2020.

Table 5-18 Top offences and rate per 100,000 population, Forbes LGA, March 2021

Offence type	Number of incidents	Rate per 100,000 per population	LGA rank[8]	5 years significance trend[9]
	January 2020 - March 2020	January 2020 - March 2020	2020	January 2016 to December 2020
Domestic violence related assault	82	827.8	11	Stable
Non-domestic violence related assault	65	656.2	10	Stable
Sexual assault	12	121.1	38	n.c.
Indecent assault, act of indecency and other sexual offences	15	151.4	-	n.c.
Break and enter dwelling	64	646.1	15	Down 10.3%
Steal from motor vehicle	83	837.9	6	Stable
Steal from retail store	17	171.6	53	n.c.
Steal from dwelling	76	767.2	3	Stable
Fraud	49	494.6	44	Stable
Malicious damage to property	164	1655.6	6	Stable

Source: NSW Bureau of Crime Statistics and Research.

5.8.4 Cultural heritage

The project is within the Wiradjuri Aboriginal nation, which is the largest by area in NSW and second largest by area in Australia (Wiradjuri Condobolin Corporation, 2021). The Wiradjuri people are known as the people of three rivers, as their country is bordered by the Macquarie River, Lachlan River and Murrumbidgee River (Wiradjuri Condobolin Corporation, 2021).

A search of the Aboriginal Heritage Information Management System (AHIMS) database was conducted on 25 May 2020 and 9 February 2021, using the eastings and northing data for the project area and surrounding region. A one-kilometer buffer was used during the search, to ensure an adequate search area was captured. The search yielded the result of 15 sites. These sites comprised five modified trees (either scarred or carved) and ten sites containing stone artefacts, including two open campsites and two isolated artefacts. All the sites hold a valid site status, and no permit information has been listed, indicating that these sites are extant in the landscape. Of the 15 sites identified, none were located within the confines of the project area, with the closest site being an isolated artefact located approximately 150 m south of the ETL.

[8] Rates are not calculated for LGAs with a population less than 3000 because for these areas are very sensitive to small changes in population sizes and the number of incidents recorded. Rate calculations should also be treated very cautiously for LGAs that have high visitor numbers relative to their residential population. This is because rate calculations are based on estimated residential population and no adjustment has been made for the number of people visiting each LGA per year. For this reason, Sydney LGA and LGAs with no rates calculated are excluded from the ranking of these rates. Where a rank has not been calculated, a 'n.c.' appears in these cells.

[9] Trend shows the results of a statistical test for a significant upward or downward trend in the monthly number of criminal incidents recorded. Where the trend is significant (i.e., $p<0.05$), the average annual percentage change over the five- year period is shown. Significant upward trends are highlighted in red; significant downward trends are highlighted in yellow. 'Stable' indicates there was no significant upward or downward trend and 'n.c.' indicates that the number of incidents recorded was too small for a reliable trend test to be performed.

There were 15 newly recorded Aboriginal archaeological sites located during the cultural heritage survey of the project area. Most of the sites were assessed as having low archaeological significance. Two sites were assessed as having low to moderate significance.

Landforms, vegetation and soils over much of the project have been disturbed by paddock levelling, cultivation, track formation and clearing for pastoral and agricultural practices. This is likely to have reduced the potential for Aboriginal heritage sites of significance within the project area to remain. In addition, there is no known evidence of previous settlements by Aboriginal people within the project.

A search of the State Heritage Register, Interim Heritage Orders, State Agency Heritage Registers and the Forbes LEP did not identify any known areas of historic heritage significance within the solar farm site, ETL route or switchyard site. There are 157 items of heritage significance listed within the Forbes LEP, three of these are of State significance under the *NSW Heritage Act 1977*. The closest of these to the project are the Wandary Homestead (local significance) and Forbes train station (State significance), located approximately 6 km south and 14 km to the southwest of the solar farm site respectively.

6 Impact assessment

This section assesses potential social and economic impacts on communities due to the construction and operation of the project. As outlined in Section 3.5, the potential social and economic impacts relate to:

- Way of life
- Surroundings
- Health and wellbeing
- Accessibility
- Livelihoods
- Community
- Culture
- Decision-making systems.

These impacts are described further as follows.

6.1.1 Way of life

Way of life relates to how people live, how they get around, how they work, how they play, and how they interact each day. The project is predicted to result in changes to land use and housing and accommodation, subsequently leading to potential impacts on way of life.

6.1.1.1 Changes to land use

The solar farm site is approximately 300 hectares (ha) in area on land legally described as Lot 77 in Deposited Plan 750183. The solar farm site is part of a larger landholding of which there is a single or family ownership. It is understood that the site encompasses the least agriculturally productive land in that holding. The land is largely cleared, having been highly modified by past disturbances associated with cropping, and the grazing of livestock. The surrounding land use is predominately agricultural. There are no residential dwellings within the solar farm site, with the nearest dwelling located approximately 600 m to the north- west of the western boundary. There are eight existing dwellings within 3 km of the solar farm site.

Throughout the project construction phase, livestock grazing would be restricted as required in those areas being utilised such as at the solar farm site, along the ETL easement and at the switchyard site including any laydown areas. However once operational, the project would not preclude the co-location of compatible agricultural land uses. For other solar projects there have been concerns raised as to whether the presence of solar farms inhibits aerial agricultural practices. It is understood that aerial agricultural activities are very rarely practiced in the area surrounding the project. If there was an instance where a nearby landholder intended to use such methods, this should be able to be occur with the application of basic mitigation or management measures.

Trees and tall shrubs would be suppressed under the ETL as part of maintenance of this infrastructure; however, grazing within the easement would be possible. Following decommissioning it is anticipated that the project could continue to be used for agricultural purposes.

Whilst the project would involve a distinct change to the existing use, the overall severity of this impact is considered to be moderated by there being only a single (willing) landowner, the relatively low number of people who would possibly experience any negative emotion as a result of the change and the ability to maintain and return to existing agricultural use upon project decommissioning.

6.1.1.2 Housing and accommodation

The impact of the project on the availability and affordability of housing and accommodation is limited to the construction phase and therefore of a relatively short duration. The influx of workers associated with project construction has the potential to increase demand for short-term and rental accommodation in the nearby townships of Forbes and Parkes.

Project construction would occur over an estimated 18-month period and require a peak of 320 construction workers (estimated peak of 297 mobilised workers at any one time). The construction workforce requirement will change over the duration of the construction phase as outlined in Table 6-1 below, which shows that:

- In the initial stages of project construction (months 1 – 4), it is estimated that there would be a requirement for a total of 68 employees, of which an estimated 44 would be non-local and therefore require short term accommodation.
- In months 4 – 8 of construction, there would be an estimated 291 employees, of which an estimated 142 would be non-local and therefore require short term accommodation.
- In months 8 – 12 of construction, there would be an estimated 297 employees, of which an estimated 139 would be non-local and therefore require short term accommodation.
- In months 12 – 18 of construction, there would be an estimated 101 employees, of which an estimated 57 would be non-local and therefore require short term accommodation.

Table 6-1 Construction workforce

Construction work force	Months 1 -4		Months 4 -8		Months 8 – 12		Months 12 – 18	
	%	Number	%	Number	%	Number	%	Number
Trade assistant/ Labourers	10%	10	80%	77	100%	96	21%	20
Civil construction/ Operators/ Riggers	30%	10	100%	32	60%	19	0%	0
Sub-contractors	20%	10	80%	38	80%	38	40%	19
Electricians	0%	0	100%	80	100%	80	30%	24
Project management and delivery	60%	38	100%	64	100%	64	60%	38
Total	-	68	-	291	-	297	-	101
Total local employees	-	24	-	149		158	-	44
Total non-local employees	-	44	-	142	-	139	-	57

Unless carefully managed, an accommodation requirement for between 142 and 139 beds over an 8-month period may have a negative effect on the local availability of short-term accommodation for tourism and other purposes. The highest demand period is that associated with the Elvis Festival in Parkes which results in all available accommodation in both Parkes and Forbes being fully utilised. The Forbes Music Festival also generates high levels of demand for accommodation. To avoid accommodation shortages during festivals, the project would seek to locate the workforce at alternative accommodation outside of Parkes and Forbes during times of peak festival demand.

Outside of the Elvis Festival, there is an adequate supply of accommodation options with the project conveniently located between the centres of Forbes and Parkes. There are an estimated 470 beds in Forbes and 1,500 bed spaces in Parkes. An accommodation option recommended by Forbes Shire Council is the Jemalong Regional Education Centre (JREC) in Forbes which has been utilised by other project construction workforces. It has a total of 31 rooms each with its own ensuite which may be suitable for twin share accommodation. As the primary purpose of the facility is to support accommodation for health and education facilities, a minimum of 25 per cent of rooms would need to be retained for visiting doctors, nurses and teachers. This means that a total of 23 rooms providing accommodation for 46 construction workers could be made available for the course of the construction period- noting that JREC is not available to the general public during the Elvis Festival and therefore its utilisation for the project would not diminish available supply during that peak period. It therefore would provide a stable accommodation option across the 18-month construction period.

Additional short-term accommodation for up to 96 non-local workers (noting that of the 142 non-local workers, 46 may be accommodated at JREC) would be required between construction months 4 and 12. It is anticipated that such accommodation will be secured through an arrangement with a number of the larger accommodation providers in

Forbes and Parkes. Key accommodation facilities which may be suitable for workforce accommodation in Forbes and Parkes include: 46 hotels and motels (including Forbes Inn Hotel, Forbes Victoria Inn, Parkes Hotel, Hotel Gracelands etc.) along with 7 caravan parks (including Forbes Caravan and Cabin Park, Apex Riverside Tourist Park, Newell Highway Motel and Caravan Park etc.) and Airbnb properties listing for rent. Further negotiation with these accommodation providers should be managed in advance so as to arrive at an optimal accommodation solution which both ensures that high quality accommodation is guaranteed for the workforce whilst minimizing any negative influences on availability for tourism and other purposes.

6.1.2 Surroundings

Surroundings relate to access to and use of the natural and built environment, and aesthetic value and amenity. The project is predicted to result in changes to landscape character and visual amenity, in addition to noise levels, which has the potential to lead to impacts on surroundings.

6.1.2.1 Landscape character and visual amenity

Changes to landscape character and visual amenity can invoke strong emotions in people who have an attachment to a particular viewpoint or scene. For projects which have a substantial footprint, such emotions can promote active community opposition to the project proceeding. A landscape and visual impact assessment (LVIA) of potential impacts on views and landscape character in and around the project has been undertaken as part of the Daroobalgie Solar Farm EIS. The LVIA included all land within a radius of 10 km from the project. The baseline assessment of the LVIA identified a total of three distinct Landscape Character Types within the study areas including: (i) agricultural plains; (ii) floodplain; and (iii) Forbes-Newell Highway industrial corridor.

A primary finding of the landscape impact assessment was that while the presence of the project is a considerable change in character within a relatively restricted area of agricultural plains, it is not expected to result in a fundamental change in landscape character as defining characteristics of landscape (flat topography, pastures, remnant vegetation along watercourses and scattered native trees) will remain intact. Moreover, the agricultural plain covers a broad extent of the landscape, and the project would occupy a relatively small proportion of the overall extent of the character type, thereby limiting the extent of influence the project exerts upon the broader area. The impact on the landscape of floodplain is expected to be minor due to the influence of intervening vegetation and the relatively small proportion of the overall field of view that PV cells would occupy. Views of the solar farm site, the ETL and switchyard site experienced from the Forbes-Newell Highway industrial corridor were further considered to have a minor impact due to the inwardly focused visual nature of these locations, the distance at which these locations are located, and the influence of intervening vegetation screening views from the industrial estate, large lot residences and motorists towards components of the project.

Anticipated visual impacts were assessed from key representative public viewpoints surrounding the project. It was found that during construction, there might be temporary visual impacts associated with construction activities (such as removal of vegetation) including machinery and temporary structures on the project. Changes to visual amenity during the construction phase might result in diminished enjoyment of rural views for nearby and passing local residents.

Once operational, potential impacts to surrounding sensitive receptors may include changes to existing rural views and solar glint and glare from the solar panels. Changes to visual characteristics might result in reduced enjoyment of the natural and rural landscape. However, whether these impacts are perceived as being adverse, positive, or neutral is subjective and influenced by the unique perspectives of individual receptors. The LVIA assessed that the greatest levels of impacts are expected from Troubalgie Road as this viewpoint is relatively close to the solar farm site. Visual impact of this viewpoint was rated as being minor. The remaining representative public viewpoints were assessed as only having negligible to minor potential impact, including the viewpoint assessed from Ashburnham Road.

Glare analysis was assessed upon visual receptors located at approximate 500m intervals along adjacent roads to the east and west of the site, and key locations such as, the Newell Highway, livestock exchange centre and nearby residential dwellings. The assessment indicated that, for the assessed viewpoints, there would not be any glare or glint experienced at any time throughout the year. Vegetative screening is currently in place between the location of the proposed solar farm site and receptors, except for along Troubalgie Road and Forest Road to the west of the site. This screening limits the availability of views and by extension limits the potential for glare-related impacts to be experienced from ground level by receptors.

Transmission line corridors tend to pass through large scale and open landscape areas. The LVIA assesses that transmission towers and/or the power lines, as they are not solid structures, would not form major visual components within the landscape and are fitting to the existing visual character of the study area. Given the size and

On the basis of these assessments and considering that loss of landscape character and visual amenity was not raised as an issue of concern by any stakeholders, it is concluded that it is unlikely the project would pose any significant risk of strong emotions in people who have an attachment to a particular viewpoint or scene.

6.1.2.2 Noise impacts on community lifestyle and amenity

Increased noise can reduce the amenity value of an area and can disrupt socially important activities such as sleep, relaxation, recreational pursuits and enjoyment of the environment. A noise and vibration assessment was completed for the project as part of the EIS. This quantitative assessment of sensitive receptors surrounding the project considered potential noise and vibration impacts during the construction and operational phases, along with consideration of cumulative impacts.

Primary sources of noise and vibration during the construction phase would include vehicle noise, general construction activities, construction of the transmission line and road works and the operation of plant and machinery- noting that construction activities would only be carried out during daylight hours. The noise assessment predicted that construction noise impacts at surrounding residential receivers (approximately 5 km radius from the boundaries of the solar farm site) would be well within the project noise management levels and the Interim Construction Noise Guideline (ICNG).

During construction of the ETL six receivers located less than 1.5 km from the ETL would likely be adversely impacted as construction of the ETL moves along the easement. Based on the noise criteria exceedance of potential construction activities, additional noise management and mitigation measures during the ETL construction would need to be implemented to reduce the noise impacts. Two receivers nearest to the switchyard site are likely to experience noise impacts which exceeds the 42 dB(A) standard construction hours criteria. As such, additional noise management and mitigation measures during the construction of the switchyard site would need to be implemented to reduce noise impacts.

Construction road traffic and vibration impacts are likely to achieve compliance with relevant assessment criteria. It is envisaged that noise and vibration from construction and decommissioning activities will be able to be mitigated through the application of suitable noise abatement measures. However, it is recognised that noise is experienced by people differently and therefore it is considered important that project construction is supported by community engagement processes which facilitate resolution of any community concerns or complaints.

Regarding project operations, based on the assessment, the predicted noise levels of the solar farm during standard operations at all surrounding residential receivers have been assessed to achieve compliance with the Noise Policy for Industry (NPI) daytime, evening and night-time noise criteria. Operational road traffic noise impacts are expected to comply with the Road Noise Policy (RNP)’s noise criteria.

6.1.3 Health and wellbeing

Health and wellbeing can relate to physical and mental health, psychological stress and access to open space and effects on public health. Changes to access and connectivity has the potential to increase perceived safety risks for road users and users of the school bus service, thereby impacting on health and wellbeing.

There are no existing public transport services and no formal walking and cycling facilities within or immediately surrounding the site. There is a designated school bus route along Back Yamma Road. As such it is advised in order to mitigate any safety issues arising from construction vehicle use of Back Yamma Road, travel of vehicles during peak hours should be avoided.

With the additional traffic during the construction, perceived traffic delays may lead to frustration and anxiety for commuters, especially if congestion occurs for long period of time. In addition, increased construction traffic may result in deterioration of the condition of local roads, especially in areas close to site access points. Project-related construction traffic movements has the potential to reduce public safety in the local area. Perceptions of safety might be affected by increased likelihood of vehicle collisions and associated injuries as well as misbehaviour due to the presence of construction workforce. However, impacts associated with transport and connectivity during the project construction would be short term and very limited in extent.

6.1.4 Accessibility

Transport accessibility and connectivity is fundamental to the health and well-being of communities, community amenity and integral to many of the social opportunities for residents (such as labour catchment, education opportunities, business catchment).

A transport and traffic assessment was undertaken for the project's construction and operation phases as part of the EIS. Project impacts on access and connectivity are confined to the construction and decommissioning phases. The assessment of construction traffic impacts involved a review of the types of construction activities proposed, staging of works, working hours, and the need for road occupancy to allow for construction.

Major solar farm components are expected to be delivered via Port Botany, Port of Newcastle or Port Kembla. At this early stage of the project, several delivery options are being considered. These include delivery from either north of the site via Orange and Parks (via Blue Mountains) or south of the site via Yass and Forbes. Delivery via rail is an additional option to be considered. The proposed construction vehicle routes include major access routes (via Forbes delivery: the Escort Way and Newell Highway; and Parkes delivery: Newell Highway and Henry Parkes Way) and local roads (Back Yamma Road and subsequently Troubalgie Road).

The construction phase is expected to generate the largest number of traffic during the lifetime of the project. The construction phase will involve activities such as site mobilisation; site set-up/access roads; HV trenching; PV plant installation; substation construction; construction of transmission line; and switchyard construction. Based on the traffic and transport assessment, the estimated heavy vehicle movements from these activities would potentially result in a total of 5,775 heavy vehicle one-way trips. In addition, it is estimated there will be 167 light vehicle movements during the am and pm peak, during the peak construction period. The use of buses or carpooling to and from site where possible may help reduce light vehicle use.

The increased construction traffic would not result in any loss of access or any substantial delays in accessing roads from properties, businesses and facilities. However, at peak times, minor travel and access delays may be experienced especially on local roads such as Back Yamma Road, or Troubalgie Road. Heavy vehicles loaded with construction materials, switch station components, transmission line poles may travel at lower speeds which may result in a minor reduction in average travel speed of these roads. The movements of the designated school bus along Back Yamma Road is expected to be obstructed during construction peak hours.

Traffic generated during the operational phase is expected to be minimal in comparison to the construction phase. It is expected that operation will not generate significant traffic and have minimal/no impacts on community access and connectivity.

6.1.5 Livelihoods

Livelihoods relate to people's capacity to sustain themselves through employment or business. The project is predicted to result in changes to local employment and business, which has the potential to lead to impacts on people's livelihoods.

6.1.5.1 Local employment

Project construction, and to a lesser extent operation, would generate employment opportunities in the local and regional area. Income derived from employment can directly shape life experiences and opportunities, enhancing socio-economic wellbeing and prosperity for individuals and communities.

During the construction phase, it is expected that the project would require a peak of 320 construction workers and site support staff. The proponent is committed to prioritising employment opportunities for people who reside local to the project and to ensuring that potentially marginalised groups, such as Aboriginal and Torres Strait Islander people, are provided equitable access to employment opportunities. Locally sourced labour is defined as those employees which reside within a one-hour commute from the project site.

The construction workforce comprises a range of skilled and semi-skilled positions as presented in Table 6-1. Respective estimates of locally sourced labour were derived based on the size of the local labour force along with the likely availability of required skills. The local labour force comprises both Forbes LGA and Parkes UCL. As outlined in Section 5.4, in 2016 the recorded unemployment rate in the Forbes LGA was 5.4 per cent (225 residents) and for the Parkes UCL was 7.9 per cent (332 residents). Of the total labour force of 8,376, approximately 500 (6.0 per cent) work in the construction industry. There were also approximately 900 members of the labour force which were employed as a 'labourer', a proportion of which would likely be employed in the construction industry.

It has been reported that the construction industry has been experiencing widespread and increasing difficulties in sourcing skilled labour and materials. The Australian Industry Group Construction Outlook survey found that 69.2 per cent of respondents reported either 'major' or 'moderate' difficulty in recruiting skilled labour in the six months to March 2018. Respondents also listed construction trades workers, electricians and mechatronics/automation trades workers as the top three job roles experiencing skill shortages (Australian Industry Group, 2018).

Presented in Table 6-2 is an overview of the assumed number of construction workforce able to be sourced from the within the local area and outside of the local area.

Table 6-2 Breakdown of construction employment – locally sourced labour

Total construction workforce						
Workforce component	Trade assistant/ Labourers	Civil Construction/ Operators/ Riggers	Sub-contractors	Electricians	Project management and delivery	Total
Proportion of total workforce	30%	10%	15%	25%	20%	100%
Number of positions	96	32	48	80	64	320
Locally sourced labour-construction workforce						
Workforce component	Trade assistant/ Labourers	Civil Construction/ Operators/ Riggers	Sub-contractors	Electricians	Project management and delivery	Total
Proportion of workforce sourced locally	80%	50%	20%	60%	25%	-
Number of positions	77	16	10	48	16	167

The proportion of the workforce estimated to be able to be sourced locally accounts for approximately 52 per cent of the total construction workforce (equivalent to 167 employees), whilst the estimated proportion of the workforce needing to be sourced from outside of the local area represents 48 per cent (153 employees).

Regardless of the final split of local and non-local labour, the generation of 320 construction positions will benefit the local and regional labour market. In addition to direct jobs, flow on employment from the injection of wealth into local and regional economies will also occur. The creation of such employment opportunities and indirect economic activity will have a positive effect on the stability and prosperity of communities.

During the operation phases, the project is anticipated to generate 4 to 6 full-time equivalent jobs. Additional contractors would be required to undertake incremental maintenance and repairs and provide support services on site (e.g. – cleaning, landscaping / vegetation management, waste removal, etc). This would further support increased long-term economic investment for the locality with wage expenditure benefiting the Central West and Orana Region.

Stakeholders engaged as part of the EIS and project development perceived the generation of employment opportunities during both the construction and operations phases as a significant benefit for local and regional communities. In particular, stakeholders emphasised the benefits of the project generating both skilled and unskilled employment opportunities, in addition to the potential to further stimulate apprenticeships and traineeships. In summary, the project would generate a high positive impact for local and regional communities through the generation of employment opportunities.

6.1.5.2 Local economy

The project would involve total estimated capital expenditure of $188 million. This would be expended on a broad array of equipment, products and services, some of which may be procured from within the local and regional area. Such an injection of wealth would serve to further sustain and stimulate local economic growth within the Forbes and Parkes LGAs and broader NSW.

During the construction phase, the project would involve the procurement of construction supplies and the use of construction-related services. The project's construction is mostly likely to directly impact the Heavy and Civil Engineering Construction Sector, Construction Services Sector and Electricity Transmission, Distribution, On Selling and Electricity Market Operation Sector. Flow-on impacts from the construction of the project are also likely to benefit a number of different sectors of the local and NSW economy. Businesses that can provide the inputs to the production process required by the project and/or the products and services required by the workforce would directly benefit from the project through increased economic activity. However, because of the inter-linkages between sectors, many indirect businesses would also benefit.

During the construction phase, the project would require a peak 320 construction workers and site support staff, an estimated 153 of which would be sourced from outside the local area. The presence of the construction workforce would increase demand for food, accommodation and other consumables in the local areas which would deliver a positive impact for existing retail, food, beverage, and accommodation service providers in towns such as Forbes and Parkes. An increase in trade would be welcomed by local businesses which have endured through the 2020-21 Covid-19 global pandemic.

During the operation phase, the project would continue to benefit to local economy through employment and business opportunities. Whilst annual benefits to the local economy are lesser than that estimated for the construction phase, the long-term nature of the operations phase opportunities provides a positive effect on the stability of businesses servicing the project, enabling them to sustainably increase capacity and revenue over the long term.

6.1.6 Community

Community relates to how the community functions including composition, cohesion, character and resilience. The project is predicted to result in changes to capacity of social infrastructure and community cohesion and character.

6.1.6.1 Social infrastructure

Social infrastructure provides the community support services which are instrumental to the health and well-being of the resident population. The influx of additional people into an area due to project construction or operation can place additional pressure on the provision of social infrastructure and the accessibility of services for local residents.

Project impacts on social infrastructure in the local area are primarily confined to the construction phase as the population effect associated with the operations phase is negligible. As outlined above, project construction would require a peak of 320 construction workers and site support staff. It is assumed that no members of the non-local construction workforce would be accompanied by families, and therefore the additional demand for social infrastructure is only that derived by the direct workforce (i.e., estimated peak of 142 non-local construction workers).

Given the modest and temporary increase in the population in the local study area due to the influx of the project construction workforce, it is anticipated that impacts on social infrastructure would be limited to:

- Increased demand for hospital and health services
- Increased demand for emergency services.

During the construction phase, the influx of construction workforce may place additional demand on medical and emergency services. It is possible that workers would access hospital and healthcare services and may generate an increase in demand for health services in the project's local study area. If required, workers would likely seek to access local GPs and medical centres along with the Forbes District Hospital or Parkes Hospital for injuries or illnesses encountered during the course of their residence in the community.

Forbes and Parkes are relatively well serviced in terms of hospital and health services. A range of services are provided including Acute Care, Arthritis, Heart, Gastroenterology, General Medicine, General Surgery, Kidney Medicine, Maternity, Heart and Respiratory. There are four key health service centres in Forbes and three hospital and health services in Parkes. The presence of an additional 142 persons at peak may result in some discernible increase in

demand for the medical services, however considering the level of supply it is unlikely that this would result in any significant diminishment of access to such services for local residents.

The operation of the project would require from 4 to 6 full time equivalent operational roles to be located onsite, as well as contractors travelling to site from time to time to undertake maintenance works. As the additional operation workforce would be minimal, no discernible increase in demand for hospital and health services is anticipated.

There is potential for accessibility to emergency services, such as fire and police services, to be impeded during the project's construction phase. The increased number of the people active in the region may lead to pressures upon the existing emergency services. An increase in traffic may increase demands on emergency services such as fire, police and ambulance. Accessibility and response times for emergency services may be impacted due to increase construction traffic. In addition, large and oversize loads delivering machinery and equipment to the construction site may cause occasional delays to response time. Demands on police services might also result from the project requirement for over-sized vehicle escorts.

Given the construction period is relatively short, it is considered that the project's impact on emergency services during the construction phase should be able to be avoided or minimised through engagement with police and other emergency service providers. Communicating to emergency service providers what the project will involve and the timeframes for construction, enables early identification of potential risks that may be subsequently avoided through planned interventions.

6.1.6.2 Generation of long-term, wider benefits associated with renewable energy generation

The project would provide a long-term benefit to the broader community through the establishment of a new renewable energy source, which has the potential to enhance community cohesion and character. In particular, the project would contribute to the transition to a low carbon future. Increased adoption of renewable energy sources will assist to transition away from traditional carbon intensive energy production which is linked to atmospheric pollution and carbon emissions associated with climate change. Reducing carbon emissions has the potential to slow the effects of climate change, benefitting current and future generations (IPCC, 2018).

The renewable energy produced annually by the project will support initiatives developed to reach Australia's renewable energy targets under the Paris Climate Agreement, as well as the NSW Government's aspiration of meeting net-zero emissions by 2050.

Further, the project would contribute to the strategic directions outlined in the Central West and Orana Regional Plan 2036, in particular by supporting the region's priority to diversify the economy by developing renewable energy projects and position the region as a hub of renewable energy excellence (DPE, 2017).

6.1.7 Culture

The project would alter the landscape and the visual amenity of the area immediately surrounding the project, and subsequently impact on cultural and community identity. As discussed in Section 5.8, the local area is broadly characterised by rural lifestyles supporting agricultural operations. As such, the agricultural industry is central to community identity and values. There may be perceptions that the project would diminish the use of land for agricultural purposes, thereby weakening the area's rural, agricultural identity.

However, considering that it is a relatively small parcel of land and that agricultural use would be re-instated upon decommissioning, it is not anticipated that there would be substantial negative community sentiment associated with loss of agricultural land and identity. Negative sentiment would more likely be associated with concerns of cumulative changed land utilisation, due to multiple solar projects rather than directed towards a single project.

6.1.8 Decision-making systems

Decision-making systems refer to the extent to which people can have a say in decisions that affect their lives. To date, community sentiment towards solar farm projects in NSW has been mixed, with those located nearer to solar farm projects typically more likely to express negative sentiment. In 2015, NSW Government's Office of Environment and Heritage commissioned research from Newspoll on community attitudes to renewable energy (solar and wind farms). Overall, the findings concluded that the closer to peoples' homes solar farms were located, the lower level of support for them (OEH, 2015).

The survey asked people who lived outside the Sydney and Newcastle metropolitan areas and Illawarra region about their responses to building solar farms in NSW, in their local region and within 1 to 2 km of where they lived. Some of the survey findings were:

- The level of support for having solar farms in NSW closely reflected state-wide sentiment (91 per cent)
- Support for having solar farms in the local region was 84 per cent but remained a solid majority
- A majority supporting having a solar farm within 1 to 2 km of their home (78 per cent) and 17 per cent opposed it.

The small group of survey respondents who opposed solar farms being located near their place of residence gave a variety of reasons for this such as the lack of suitability of a solar farm for their area (33 per cent), the amount of space required (16 per cent), environmental impacts (16 per cent) and visual impacts (20 per cent).

Overall, the outcome of this research shows that while 88 per cent of people identified advantages with renewables (solar and wind farms), 62 per cent also saw disadvantages. In weighing up the pros and cons, the vast majority of people (91 per cent) supported the use of renewables to generate electricity in NSW. Most people surveyed supported the use of both wind farms (81 per cent) and solar farms (89 per cent). The principal advantages surveyed people perceived in renewables were benefits to the environment (80 per cent) and the potential for reduced energy costs in the long run (37 per cent). Surveyed people mentioned two primary disadvantages including higher cost in the set-up phase (39 per cent) and concerns about efficiency and reliability (18 per cent). It is clear there is widespread in-principle support for using renewable energy in NSW and most people do not need convincing about its environmental benefits. There are mixed views about the costs, efficiency and reliability of renewable energy.

The project carried out a mailbox drop in December 2020 with a total of 3,389 households being covered. Both phone number and website contacts were provided for feedback; however, no feedback was received. Further community engagement was undertaken in May 2021 with two face-to-face drop-in sessions in Forbes. Feedback on the proposed project was generally positive with only a few concerns raised. Throughout project stakeholder engagement activities, a high level of support has been expressed for the project.

6.1.9 Potential cumulative impacts

Cumulative impacts are those which result from a number of projects being constructed or operated at the same time. Potential cumulative social and economic impacts can relate to matters such as increased traffic congestion, labour demand, and amenity impacts.

There are several other nearby planned and proposed projects which have potential to contribute to generation of cumulative social and economic impacts. These include:

- Jemalong Solar Farm: The proposed 50 MW Jemalong Solar PV Plant located 30 km west of Forbes was granted development consent on 18 May 2018. Project operations commenced in Q2 2021.
- Goonumbla Solar Farm: The proposed 67.8 MW Goonumbla Solar Farm is located approximately 10 km to the west of Parkes, adjacent to the Parkes Solar Farm. Construction was completed in August 2020 and the project has been operational for almost a year.
- Quorn Solar Farm: The proposed 160 MW Quorn Park Solar Farm is located 8.5 km to the west of Parkes. The SEARs for this project was issued in March 2018 and granted development approval in July 2020. The construction is estimated to take up to nine months however has not yet commenced as of mid-2021.
- Parkes Solar Farm: Parkes Solar Farm is a 66 MW renewable electricity project consisting of approximately 206,000 solar panels installed on 210 hectares of land, 10 km west of Parkes. Construction was completed in April 2018 and the project has now been operational for over three years.
- Stockinbingal to Parkes rail project, including the Daroobalgie crossing loop: The project is in planning and includes upgrades along the existing rail corridor and building new supporting infrastructure to provide sufficient height and width to support the safe running of double-stacked freight trains.
- Newell Highway upgrade, Parkes Bypass: In august 2021 the contract for construction was awarded to the Georgiou Group with construction due to commence in late 2021.

In particular, there may be an increase in heavy vehicle traffic on local and regional road networks due to transportation of construction materials and construction workers travelling to and from site. Consideration will also need to be given to established users of the road network such as the Forbes Central West Livestock Exchange and major events like the Parkes Elvis Festival. As outlined above, negative community sentiment may result due to cumulative changes to land utilisation with solar uses replacing agricultural uses.

6.1.10 Summary of impacts

Table 6-3 summarises the unmitigated socio- economic impacts of the project, including the outcomes of the impact evaluation using the social risk matrix presented in Section 3.5. Note that all positive impacts are denoted in blue.

Table 6-3 Summary of unmitigated social and economic impacts

IMPACT	DESCRIPTION	TYPE	PHASE	LIKELIHOOD	MAGNITUDE	SIGNIFICANCE
Way of life	Temporary loss of livestock grazing activities during construction due to restricted access to construction areas and construction of transmission line	Neg	Cons	Possible	Minimal	Low
	Increased demand for short-term accommodation creating shortages or competition in Forbes and Parkes townships, especially high accommodation demand during the Parkes Elvis Festival	Neg	Cons	Likely	Minor	Medium
Surroundings	Altered visual amenity for nearby residents and visitors - solar farm site	Neg	Ops	Possible	Minimal	Low
	Temporary elevated exposure to noise for nearby receivers to the solar farm site	Neg	Cons	Possible	Minimal	Low
	Temporary elevated exposure to noise for nearby receivers to the ETL and switchyard site	Neg	Cons	Possible	Moderate	Medium
Health and wellbeing	Increased traffic safety risks for existing properties located on Back Yamma Road, Troubalgie Road due to the movement of heavy construction vehicles	Neg	Cons	Possible	Minimal	Low
	Increased safety risk for children using school bus service on Back Yamma Road	Neg	Cons	Possible	Minor	Medium
Accessibility	Obstruction to school bus movements along Back Yamma Road	Neg	Cons	Possible	Minor	Medium

IMPACT	DESCRIPTION	TYPE	PHASE	LIKELIHOOD	MAGNITUDE	SIGNIFICANCE
	Increased delays- traffic movements and congestion on Newell Highway and Troubalgie Road for road users	Neg	Cons	Possible	Minimal	Low
Livelihoods	Increased economic prosperity for local businesses and accommodation providers due to workforce expenditure	Pos	Cons	Likely	Moderate	High
	Diversification of economic base through generation of employment opportunities	Pos	Ops	Likely	Moderate	High
	Increased employment opportunities for residents of local and regional communities	Pos	Cons Ops	Likely	Moderate	High
Community	Increased demand on health and emergency services due to construction activities and the influx of project construction workforce	Neg	Cons	Possible	Minor	Medium
	Generation of long-term wide benefits through establishment of renewable energy infrastructure, including alignment with policy objectives	Pos	Ops.	Almost certain	Major	Very high
Culture	Perceived impact to rural and agricultural identity	Neg	Ops	Possible	Minor	Medium
Decision-making systems	Community opposition due to perceived impacts (	Neg	Ops	Possible	Minor	Medium

Type: Pos = Positive, Neg = Negative
Project phase: Cons = construction (including pre-construction), Ops = operations (including commissioning, maintenance and decommissioning)

6.2 Socio-economic management measures

As presented in Table 6-4, potential impacts and site-specific management measures to avoid, minimise or manage identified social and economic impacts during the project's pre-construction, construction and operational phases were identified based on the feedback provided by stakeholders along with the review of how similar projects manage socio-economic impacts.

Table 6-4 Safeguards and management measures

Impact	Management / Mitigation measures	Responsibility	Timing
Way of life	• Regularly engage with local communities to explain actual impacts and benefits, understand concerns and identify mitigation measures. • Notify local residents at least two months prior to works commencing and keep them regularly informed of project activities. • Collaborate with local and regional accommodation providers and tourism operators to regularly review the availability of accommodation and contribute to corrective measures as required. • Ensure open and robust communications with stakeholders in managing the potential impacts associated with housing and accommodation as per the Community and Stakeholder Engagement Plan. • Consult with local tourism industry representatives to manage potential timing conflicts with local events.	Proponent Contractor	Pre-Construction Construction Operation
Surroundings	• Implement impact mitigation measures as outlined in the Landscape and Visual Impact Assessment. • Reduce visual impacts through appropriate landscaping and incorporation of other screening solutions where appropriate. • Implement the Construction Noise and Vibration Management Plan as outlined in the Noise and Vibration Impact Assessment. • Conduct compliance measurements of vehicles using the facility to ensure noise emissions meet standards applicable to the vehicle type. • Notify the community of construction activities in advance. • Develop and implement a construction community and stakeholder engagement plan (Construction CSEP) which includes a complaints management process and provision of timely information to communities.	Proponent Contractor	Pre-Construction Construction Operation
Health and wellbeing	• Schedule construction material delivery and associated heavy vehicle movements, including outside school bus operating hours and where possible to avoid overlap with peak periods associated with the Forbes Central West Livestock Exchange.	Proponent Contractor	Pre-Construction Construction

Impact	Management / Mitigation measures	Responsibility	Timing
	• Consult with local tourism industry representatives to manage potential timing conflicts with local events.		
Accessibility	• Implement the Traffic Management Plan in coordination with the Councils, TfNSW, the haulage contractor, and property owners • Consider establishing a transport pool for employees to reduce staff vehicle movements during peak hours.	Proponent Contractor	Pre-Construction Construction
Livelihoods	• Develop a local procurement policy to encourage the project's contactors, where possible, to source their workforce and their suppliers for goods and services locally. • Have a clear and efficient process for people to seek information about employment opportunities and register their interest in the project. • Promote employment opportunities widely through community and stakeholder engagement; the project's recruitment contact network; the Proponent and major contractors' websites; and employment agencies. • Employ local residents where they have the required skills and experience and are able to demonstrate a cultural fit with the organisation. • Work with the local networks and local businesses to organise and plan for how to benefit from the incoming workforce. • Locally source non-labour inputs to production where local producers can be cost and quality competitive, to support local industries. • Actively liaise with local industry representatives to maximise and coordinate the use of local contractors, manufacturing facilities and goods and materials suppliers, and to minimise adverse impacts to local supplies, services and tourism.	Proponent Contractor	Pre-Construction Construction Operation
Community	• Engage with medical and emergency service providers as part of ongoing planning and development of the project. • Provide appropriate onsite medical response facilities and personnel. • Develop and implement safety protocols including an Emergency Response Plan.	Proponent Contractor	Construction
Culture	• Establish a Community Investment Fund for the project which financially supports local projects and initiatives that enhance the	Proponent Contractor	Pre-Construction Construction

Impact	Management / Mitigation measures	Responsibility	Timing
	quality of life, identity and wellbeing of the local community.		Operation
Decision-making systems	• Actively engage with local communities to understand concerns and expectations and identify mitigation measures. • Provide contact details for community enquiries/complaints • Provide regular project construction and operation updates to the community. • Provide timely and transparent information to communities whose lifestyle and amenity might be impacted by the project as per the project's Community and Stakeholder Engagement Plan. • Regularly engage with community leaders and the broader community throughout the construction and operational phases to build understanding of project related effects and benefits.	Proponent Contractor	Pre-Construction Construction

6.2.1 Community Investment Fund

As a leading renewable energy developer, Pacific Hydro has demonstrated a commitment to supporting the communities which host their projects. Pacific Hydro currently operates seven Community Investment Funds for projects in Ararat, Clements Gap, Victoria's Great South West region (near Portland), Crowlands, Haughton, Taralga and Yaloak South.

A Community Investment Fund for the project will be established and implemented in consultation with Forbes Shire Council. The fund will provide direct financial support to local not-for-profit community groups or local infrastructure projects that will enhance the community's quality of life and wellbeing.

6.3 Residual impact assessment

With the implementation of the management measures outlined in section 6.2 above the residual risk are provided in Table 6-5.

Table 6-5 Summary of mitigated social and economic impacts

IMPACT	DESCRIPTION	TYPE	PHASE	LIKELIHOOD	MAGNITUDE	SIGNIFICANCE
Way of life	Temporary loss of livestock grazing activities during the construction due to restricted access to construction areas and construction of transmission line	Neg	Cons	Possible	Minimal	Low
	Increased demand for short-term accommodation creating shortages or competition in Forbes and Parkes townships, especially high accommodation demand during the Parkes Elvis Festival	Neg	Cons	Possible	Minor	Medium

IMPACT	DESCRIPTION	TYPE	PHASE	LIKELIHOOD	MAGNITUDE	SIGNIFICANCE
Surroundings	Altered visual amenity for nearby residents and visitors at solar farm site	Neg	Ops	Possible	Minimal	Low
	Temporary elevated exposure to noise for nearby receivers to the solar farm site	Neg	Cons	Possible	Minimal	Low
	Temporary elevated exposure to noise for nearby receivers to the ETL and switchyard site	Neg	Cons	Possible	Minor	Medium
Health and wellbeing	Increased traffic safety risks for existing properties located on Back Yamma Road, Troubalgie Road due to the movement of heavy construction vehicles	Neg	Cons	Unlikely	Minor	Low
	Increased safety risk for children using school bus service on Back Yamma Road	Neg	Cons	Possible	Minor	Medium
Accessibility	Obstruction to school bus movements along Back Yamma Road	Neg	Cons	Unlikely	Minimal	Low
	Increased delays- traffic movements and congestion on Newell Highway and Troubalgie Road for road users	Neg	Cons	Unlikely	Minimal	Low
Livelihoods	Increased economic prosperity for local businesses and accommodation providers due to workforce expenditure	Pos	Cons	Likely	Moderate	High
	Diversification of economic base through generation of employment opportunities	Pos	Ops	Likely	Moderate	High
	Increased employment opportunities for residents of local and regional communities	Pos	Cons Ops	Likely	Moderate	High
Community	Increased demand on health and emergency services due to construction activities	Neg	Cons	Unlikely	Minor	Low

IMPACT	DESCRIPTION	TYPE	PHASE	LIKELIHOOD	MAGNITUDE	SIGNIFICANCE
	and the influx of project construction workforce					
	Generation of long-term wide benefits through establishment of renewable energy infrastructure, including alignment with policy objectives	Pos	Ops.	Almost certain	Major	Very high
Culture	Perceived impact to rural and agricultural identity	Neg	Ops	Possible	Minimal	Low
Decision-making systems	Community opposition due to perceived impacts	Neg	Ops	Possible	Minimal	Low

Type: Pos = Positive, Neg = Negative
Project phase: Cons = construction (including pre-construction), Ops = operations (including commissioning, maintenance and decommissioning)

6.4 Conclusion

This project is consistent with the regional ambition to promote further development in the renewable energy industry to unlock economic potential and drive diversification across the Central West and Orana. At the local level it is concluded that implementation of mitigation and management measures would ensure that construction and operations of the Daroobalgie Solar Farm would not have any significant impact on the socio-economic wellbeing of surrounding communities. During construction, the project would generate direct employment opportunities, including opportunities for unskilled job seekers. The injection of wealth into the local economy through wages and procurement of goods and services would stimulate further economic activity and opportunities for local residents and businesses. When operational, the project would continue to benefit the local economy through employment and businesses opportunities and initiatives such as the Community Investment Fund would serve to enhance the net social benefit generated by the Project.

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Appendix A SEIA authors

SEIA lead author	Dr Mai Vo
Qualifications	Doctor of Philosophy, University of Queensland Master of Natural Resources Management, University of Queensland Master of Environmental Law, Golden Gate School of Law Master of Environmental Management, National University of Singapore Bachelor of Law, National University of Vietnam
Experience	Over 10 years' experience in social science research methods and SIA practice
Professional memberships	None
SEIA reviewer	**Chris Mahoney**
Qualifications	Master of Urban and Regional Planning (Environmental Planning), Griffith University Bachelor of International Economic Relations, Griffith University
Experience	Over 20 years' experience in social science research methods and SIA practice
Professional memberships	Member of the International Association of Impact Assessment Member of the Planning Institute of Australia

I, Chris Mahoney, declare that:

- The SEIA was prepared by suitably qualified persons.
- The SEIA was completed on 28th January 2022.
- The SEIA contains all relevant information.
- The SEIA does not contain false or misleading information.

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