Burroway Solar Farm Social Impact Assessment

Burroway Solar Farm

24401591

29 April 2024

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	Greg Lutton	

EXECUTIVE SUMMARY

OVERVIEW

Kleinfelder was engaged by Edify Energy Pty Ltd (Edify) to prepare a Social Impact Assessment (SIA) in relation to a proposal to develop a utility-scale solar photovoltaic (PV) generation facility and associated infrastructure known as the Burroway Solar Farm (the Project), located at 1955 Eumungerie Road, Burroway, New South Wales.

The Project involves the construction of a 100-megawatt (MW) solar photovoltaic (PV) generator with an estimated 100 MW / 400 MWh energy storage capacity. Burroway Solar Farm would produce around 214,000 MWh of energy annually which is enough to power approximately 40,000 homes.

The Capital Investment Value (CIV) of the project exceeds the A$30 million threshold that classifies the project as a State significant development (SSD). As an SSD, the project is to be assessed by the NSW Department of Planning and Environment (DPHI) and requires the preparation of an EIS under Schedule 2 of *the Environmental Planning and Assessment Regulation 2000* to support the Development Application (DA) for the project.

This Report satisfies the requirement for completion of a Social Impact Assessment (SIA) in accordance with the Secretary's Environmental Assessment Requirements (SEARs) for the Project issued on 29 March 2023, specifically;

> *The EIS must include an assessment of the social impacts in accordance with Social Impact Assessment Guideline (DPIE, 2021) and consideration of construction workforce accommodation.*

An SIA is a specialised study conducted to identify, analyse, manage, and monitor both the direct and indirect social impacts linked to a proposed development.

This SIA has been prepared in accordance with the Social Impact Assessment Guideline (DPE 2023) and Technical Supplement: Social Impact Assessment Guideline for State Significant Projects (DPE 2023).

STUDY AREA AND EXISTING ENVIRONMENT

As outlined in the Social Impact Assessment Guideline (DPE 2023), the first step of the SIA process is scoping, which informs development of the industry specific SEARs and informs definition of the SIA study areas (referred to as 'social locality' in the Guideline). The Social Impact Assessment Scoping Assessment (Edify 2023) was submitted to the Department of Planning and Environment (DPE) as part of the Scoping Report and SEARs were issued in March 2023.

The SIA study areas reflect the nature of social impacts and benefits which may be experienced by different stakeholder groups. Study areas adopted for the SIA include a local study area (Narromine township including Narromine and Burroway localities) and a regional study area (Narromine Local Government Area and Dubbo Surrounds).

The site encompasses approximately 495 hectares (ha) and is located in the Burroway locality which largely consists of agricultural land use and associated residences. The site is approximately 18 kilometres (km) north of Narromine and 2km east of Burroway.

As noted in SIA engagement, Burroway's community of approximately 118 residents appreciate the agricultural lifestyle but are open to diversifying land use in the locality. The Narromine township boasts a comprehensive health care system and local providers who are committed to delivering high quality health services to the community. The Agriculture, Forestry and Fishing industry remains a key contributor to the Narromine LGA employment industry with Education and Training, and Healthcare and Social Assistance acting as the second and third job providers, respectively. The Narromine Shire is also set to benefit from the new 1700 km freight rail connection between Melbourne to Brisbane – Inland Rail.

ENGAGEMENT INFORMING SIA

This SIA draws on feedback generated through community stakeholder engagement undertaken as part of the EIS:

- *Neighbours*: direct contact has been initiated with 16 neighbours of the project site offering opportunities to discuss the proposal, and its potential impacts and opportunities. Edify's project manager has established correspondence between all residents within 3.7km and maintains efforts to engage with all residents within 5km of the project boundary.
- *Community*: consultation opportunities have been (and will continue to be) offered to the community living in the Narromine Shire Council LGA, structured to enable community members to hear directly from Edify about the project, including aspirations, key features, work undertaken to date and future process/timing and ask questions, raise concerns and suggest ideas.
- *Government*: Government/elected representatives including the State and Federal Members and Narromine Shire Council members have had a briefing on the project delivered, with follow up Project updates provided. Further pre-lodgement and workshop sessions have been held with Narromine Shire Council.

SUMMARY OF SOCIAL IMPACTS AND BENEFITS

A summary of social impacts and benefits are presented in Table 1-1 below. Project impacts are largely associated with project locality and activities. The mitigations section of this report proposes various measures to manage identified impacts.

Table 1-1: Project Social Impacts and Benefits

Theme	Matter	Proposed Mitigation and Management
	Impacts	
Project Locality and Activities	Changes to the visual character impacting amenity	Views and the scenic quality of the surrounding agricultural landscape are typically highly valued. Assessment found construction impacts are temporary in nature and can be managed through standard procedures. The assessment found residences will not have any views of the site. Whilst the assessment found that the visual impact was low, surrounding residents may wish to apply mitigations such as screening tailored to their individual property
	Perceived reduction in agricultural productivity	The Project proponent may investigate the opportunity to implement Agri-solar. Research demonstrates the productivity benefits of sheep on solar farms. The Project land will be returned to the original agricultural use on decommissioning.
	Increased traffic congestion and commute times during construction	There is an opportunity for minibuses to be utilised to transport Project construction workers to and from the Project site daily. This would also decrease worker fatigue. Encouraging carpooling is also an option to decrease the amount of traffic on local roads. Generally, it was found the Project construction volumes would not adversely impact on the proposed transport route.

Theme	Matter	Proposed Mitigation and Management
Local employment and procurement	Reduced availability of rental housing and short-term accommodation for residents	Maximise recruitment of local residents for the construction workforce where possible. Innovative housing solutions such as refurbishment of existing unoccupied dwellings in exchange for rent could reduce the demand for short-term accommodation. Encourage non-local workers to be accommodated in surrounding towns to further reduce the impact on Narromine. Development of Accommodation Strategy in consultation with Narromine Shire Council during pre-construction.
	Reduced access to services for residents due to increased competition for social services	Engagement with the Narromine Shire Council to identify potential service limitations and implement measures such as provision of on-site first aid facilities to reduce competition for the GP services most proximal to the site.
Environmental and cultural heritage	Perceived increased fire safety risk associated with the Project wiring and batteries	Implement design mitigation measures from PHA such as setback distances from lot boundary. Implement mitigation and management measures recommended in the Bushfire Impact Assessment such as provision of water tanks on site and routine maintenance of Asset Protection Zones to reduce fuel load. Further, allowing sheep on solar farm land can also reduce fire risk by keeping the surrounding pasture down.
	Potential for impacts to unknown items or sites of Aboriginal cultural significance	The effective implementation of the proposed Aboriginal Cultural Heritage Management Plan (ACHMP), as outlined in the ACHAR, is key to effective mitigation of the disturbance to culturally important places, sites, or artefacts.
Cumulative	Cumulative impacts with other projects within 50km of Burroway SF	Implementation of a construction traffic management plan which will incorporate adaptive management measures to ensure that potential cumulative impacts can be effectively managed and minimised as far as practical. Vehicle pooling or busses to produce less vehicle movements. Development of Accommodation strategy in consultation with Narromine Shire Council and potential other developers to consolidate project resourcing requirements.
Benefits		
Local employment and procurement	Local employment and training	Procurement opportunities from the construction phase of the Project may benefit local and regional businesses. The Project will procure various goods and non-goods to construct the Project. The flow on effects of the construction phase will likely include demand for accommodation and food services, transport, postal and warehousing, rental, hiring and real estate services, and administrative and support services.
	Local procurement opportunities	A local procurement strategy will ensure early and regular engagement with local businesses and the Narromine Shire Council to establish relationships with the Project. Local businesses are often smaller and require more lead time to prepare for tenders and to potentially recruit people for their business. Encourage the Project workforce, particularly during the construction phase, to support and contribute to the local and regional community through local spending.

Conclusion

This report addresses the SEARs requirement to assess social impacts and consider the impacts of construction workforce accommodation.

The assessment has found that overall, the proposal is very likely to have a long-term positive impact for NSW by increasing the supply of renewable energy in NSW and reducing emissions. It will also deliver local employment and economic benefits to Narromine LGA, and wider regional area.

During construction there will be period of increased pressure on local infrastructure, accommodation and services which may be exacerbated by other renewables projects in the region being constructed concurrently. Other potential impacts associated with the construction of the solar farm may include increased traffic volumes, incidental impacts to aboriginal cultural heritage and temporary changes to the visual amenity of the site. Operational impacts may include a restriction of land area for agricultural use, changes to the visual amenity when view from public viewpoints such as Eumungerie Road and potential perceived on-site risk from Battery Energy Storage equipment.

Mitigation measures recommended by the various specialist reports supporting the Environmental Impact Statement (EIS) and from the social impact findings of this report have been committed to throughout construction, operation and decommissioning of the solar farm to reduce the impacts on the community within the Project social locality.

A monitoring and management framework is to be implemented to track and measure the effectiveness or otherwise of proposed management measures. In accordance with the intent of adaptive management of social impacts, changing socio-economic characteristics and trends in the Narromine LGA also need to be considered. To ensure the effectiveness of the management measures for the identified positive and negative impacts, the Community Consultation and Engagement Plan has been developed by the proponent and appended to the EIS.

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1 INTRODUCTION

Kleinfelder Australia has prepared this Social Impact Assessment (SIA) for the Burroway Solar Farm (the Project) on behalf of Edify as part of the Environmental Impact Statement (EIS). The context for this SIA is outlined below.

1.1 ASSESSMENT APPROACH AND REQUIREMENTS

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

- the Social Impact Assessment Guideline for State Significant Projects (SIA Guideline 2023) (DPE 2023)
- the Technical Supplement: Social Impact Assessment Guideline for State significant Projects (SIA Technical Supplement 2023) (DPE 2023)

The SEARs outline what is required to be addressed in the EIS and were issued on 29 March 2023. The relevant social impact SEARS for the Project, and where each element is addressed in the EIS and this SIA technical report, are provided in Table 1-1.

Table 1-1: SEARs Requirements

SEARs Requirements	Section Addressed
Social Impact including:	
Assessment of the social impacts in accordance with *Social Impact Guideline (DPE, 2021)*	Section 7.11 of the EIS Section 5 of this report
Consideration of construction workforce accommodation	Section 7.13 of the EIS Section 5.1.4 of this report

The SIA Guideline provides reporting requirements, approach and recommended social impact management. The SIA Technical Supplement details recommended level of assessment in Appendix C, for which the Burroway Solar Farm SIA (this report) aligns with the requirement for a 'minor' level of assessment.

1.2 AUTHORSHIP AND DECLARATION

1.2.1 Authorship

This report has been prepared by a suitably qualified and experienced lead author; Greg Lutton, consistent with SIA Guideline requirements. All contributors hold appropriate qualifications and have the relevant experience to carry out the SIA for this Project. The Author's curriculum vitae is provided in Appendix A.

1.2.2 SIA Declaration

The author declares that this SIA report:

- was completed in April 2024
- has been prepared in accordance with the EIS process under the *Environmental Planning and Assessment Act 1979* (EP&A Act).
- has been prepared in accordance with the SIA Guideline 2021.
- contains all reasonably available project information relevant to the SIA, as far as Kleinfelder Australia Pty Ltd (Kleinfelder) is aware, contains information that is neither false nor misleading.

Greg Lutton, 29 April 2024

1.3 PROJECT BACKGROUND

The Project site involves one (1) lot, which has been secured under contract by Edify. The surveyed lot is Lot 70 in Deposit Plan 1251856, which is known as 'Kookaburra' 1955 Eumungerie Road, Burroway (Figure 1). The Burroway Solar Farm proposed lot is also host to an existing 132 kilovolt (kV) distribution line which crosses east-west through the southern section of the subject lot. The overhead 132kV distribution line runs from Dubbo to Nevertire, with the distribution line owned and operated by Essential Energy. The site is approximately 495 hectares (ha) in size. The site is mostly cleared from its existing agricultural land use (cropping). The subject site is zoned RU1 Primary Production under the Narromine Local Environmental Plan (LEP).

Edify spent considerable time identifying land options for the proposed project in the local and regional area, and in particular, availability within a Renewable Energy Zone (REZ) (DPHI 2020a). The proposed site was selected due to its proximity to existing electrical infrastructure with available capacity, its high-quality solar resource and its expected minimal environmental and cultural heritage impact. The project represents Edify's continued investment in renewable energy projects throughout NSW. The Project is located within the Central West and Orana REZ (Figure 1) which was a key factor in selecting the project site, particularly as the region's power system is expected to undergo various transmission network upgrades in the coming years.

1.4 PROJECT OVERVIEW

The objectives of the project are to construct a utility-scale solar farm including solar panels, Battery Energy Storage Scheme (BESS) and associated infrastructure that will:

- Generate up to 100 MW of electricity for input into the grid.
- Utilise the integrated 100 MW/400 MWh storage capacity for efficient dispatch of energy production.
- Generate up to 214,000 MWh per annum.
- Provide increased grid reliability and security during times of peak electricity demand.
- Support the State and Federal government objective of increasing renewable energy generation in NSW.

The Project involves the construction of a 100-megawatt (MW) solar photovoltaic (PV) generator with an estimated 100 MW / 400 MWh energy storage capacity. Solar panels will be mounted on frames which are able to track and absorb sunlight to generate energy which is increased to 33 kilovolt (kV) power by integrated transformers. The Project intends to connect into the existing distribution line (Line #94W/1). This will require a new T-connection into the existing distribution line, and the construction of a new step-down substation from 132kV to 33kV. This distribution line presents a suitable connection point for the Project due to its current network capacity, which requires no additional easements when establishing a new point-of-connection for the solar and battery assets. The Project incorporates a battery energy storage system into the solar generation facility to allow storage of energy on site that can be dispatched.

The Project area is an ideal site for increasing generation capacity on the NSW electricity grid with minimal requirements for additional transmission infrastructure. The Project aligns with the NSW and Commonwealth Government's objectives for energy security and reliability and emissions reductions and will contribute to the continued growth of renewable energy generation and storage capacity in NSW and the Orana region.

1.4.1 Project Terminology

A summary of key terminology used to describe operations and disturbance areas is provided below.

- **Project area:** The area of assessment (approximately 495 ha) for baseline surveys and studies conducted for the EIS. The project area comprises the maximum area considered for the project based on the extent of subject lot (refer to Figure 1-1 in the EIS).
- **Development footprint:** The maximum extent of ground disturbing work, comprising 398ha of land, associated with the construction and operation of the project (refer Figure 8-1 in the EIS), including:
    - **Solar Array Footprint:** the developable area within the project area used for solar arrays, solar PV conversion units (inverters), electrical reticulation infrastructure and a potential de-centralised battery energy storage system design.
    - **Distribution line easement:** Easement associated with the overhead 132kV distribution line (Line #94W/1) that runs east-west through the southern section of the subject lot. The overhead 132kV

distribution line runs from Dubbo to Nevertire, with the distribution line owned and operated by Essential Energy. This easement will include a connection from the internal project substation to the grid.
    - **Substation:** An area comprising the 33/132kV substation and step-up transformer, switchyard and potential centralized BESS design.
    - **Facilities:** Operations and Maintenance (O&M) building and car park.

- **Non-development Zones:** Land within the project area that will be excluded from development including farm dams, areas of vegetation, isolated paddock trees and the Kookaburra Homestead complex.
- **Site Entry Points:** Two site accesses are proposed along the south-western boundary of the project area. One is an existing farm access and the second will require construction of a new access, with both requiring road upgrades on Eumungerie Road.

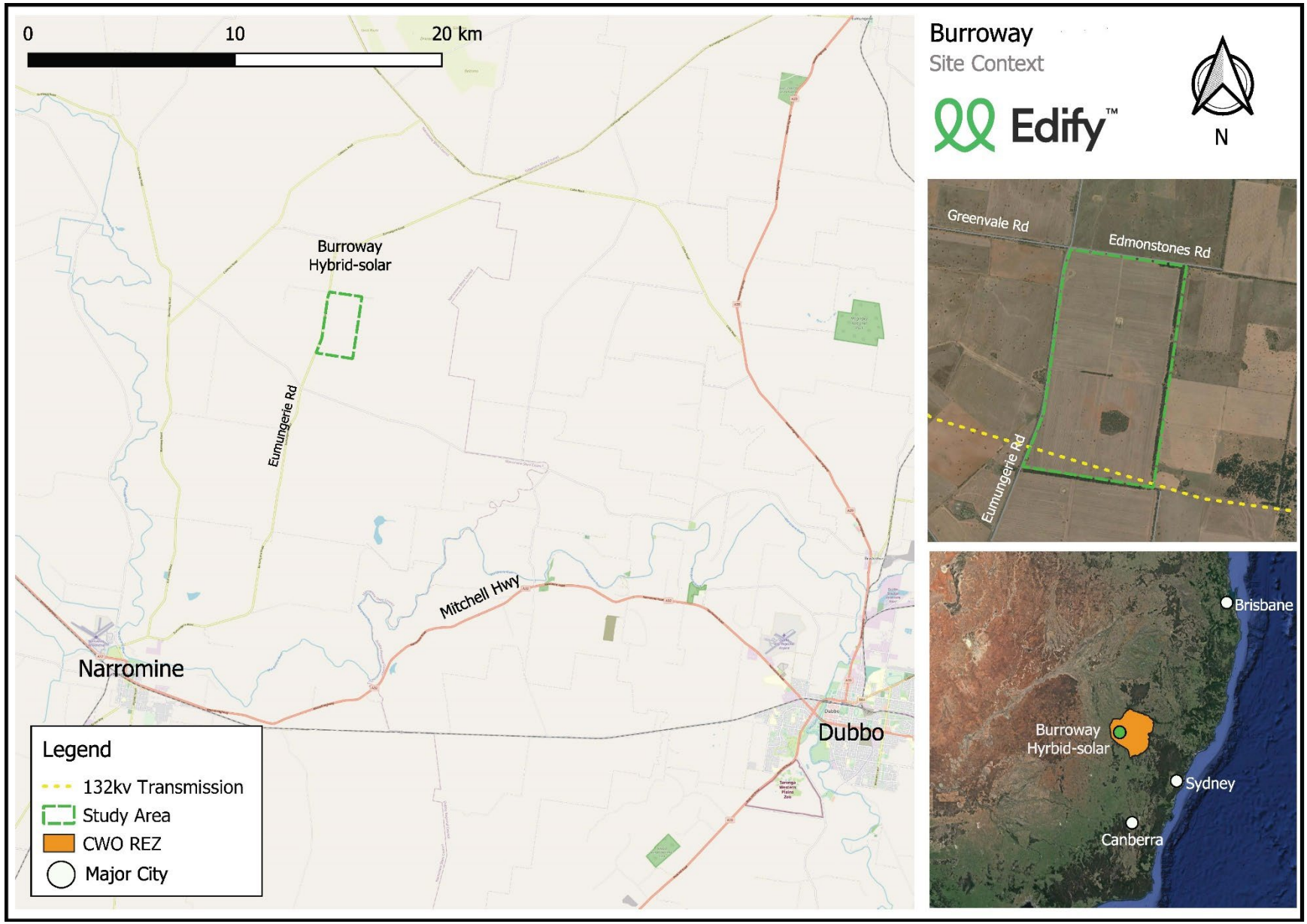

Figure 1: Project Locality

2 METHODOLOGY

This section presents the methodology which guided completion of this SIA. The methodology was specifically tailored to meet the requirements of the issued SEARs, in particular the SIA Guideline 2023 (DPE 2023) and the SIA Technical Supplement 2023 (DPIE, 2023).

Figure 2 below illustrates the phases of the SIA methodology which reflects the SIA process outlined in the SIA Guideline 2023 (DPE 2023).

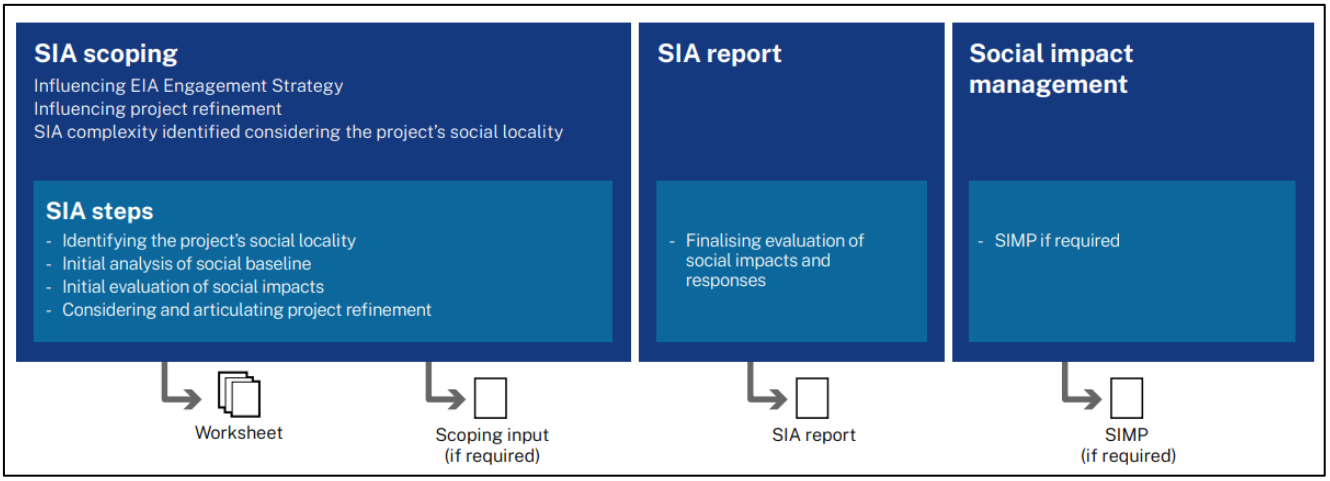

Figure 2: Phases of SIA for Project's Requiring SEARs

This report reflects various aspects completed for phase 2 of the SIA guideline methodology, which will be placed on public exhibition with the EIS. This SIA required a minor level of assessment, and as such the tasks undertaken as part of this phase included:

- Developing a social baseline,
- Preliminary consultation,
- Identification of social impacts and benefits,
- Social impact mitigations and management.

As part of the next phase, further consultation with the community for assessment of social impacts will be undertaken simultaneously with responding to submissions received during the public exhibition. These phases are detailed further in the following sections.

2.1 METHODOLOGICAL PHASES

2.1.1 Phase 1

The Social Impact Scoping Assessment for the Burroway Solar Farm (Edify, 2023) was submitted to the Department of Planning and Environment (DPE) as part of the Burroway Solar Farm Project Scoping Report (Edify, 2023), using an approach consistent with the SIA Guideline (2023). Scoping is the first phase of the SIA process and provides an understanding of what the Project entails and how it might interact with the social environment. The SIA Scoping defined the scope of the SIA including:

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

The Scoping assessment informed the SEARS requirement for a Social Impact Assessment as outlined in Section 1.1.

2.1.2 Phase 2

2.1.2.1 Social Baseline Study

Building upon the understanding of the existing social environment attained in the scoping assessment, a social baseline study was completed. Key sources of information included existing demographic, health, housing, and socio-economic data from the ABS, government agencies, and local government; published literature and social research; government policies and plans; and documents relating to similar projects.

A wide range of social indicators were reviewed and assessed for relevance. The selection of social baseline indicators was informed by the social impact categories defined in Section 4.3 of the SIA Guideline 2023 and the outcomes of initial scoping and background literature review. The social baseline study provides a community profile, including a socio-economic profile and analysis of social infrastructure and capacity within the SIA study area.

Data analysis provides a basis to identify and develop social impact themes and confirm potential social impacts.

The social baseline defines characteristics of the existing social environment against which potential social impacts are identified and assessed. The social baseline study is presented in Section 4.

2.1.2.2 Preliminary Consultation

A primary source of information drawn upon by the SIA is the feedback generated through engagement with potentially affected stakeholders and communities. Engagement to date has been conducted generally in accordance with Appendix A of the SIA Guideline 2023 which prescribes key engagement objectives and methods. The specific activities and outcomes of the community engagement and SIA engagement are presented Section 3.

Consultation to date has include in-depth stakeholder interviews with the neighbouring community and other key stakeholders to ascertain:

- Ensure likely affected people are identified and understand how the Project may affect them.
- Understand the interests people have in the project and how likely impacts may be experienced.
- Consider the views of people in a meaningful way and use these insights to inform project planning and design, mitigation and enhancement measures, and monitoring and management frameworks.
- Confirm data, assumptions, findings and recommendations.

2.1.2.3 Social Impact and Benefit Identification

Social impacts and benefits were identified through analysis of the nature of Project activities, baseline characteristics of potentially affected communities and feedback generated through engagement processes. Social impacts may be experienced differently by individuals within a community or by different communities and at different times/stages of the project.

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

- *Way of life:* how people live, get around, work, play and interact.
- *Community:* its composition, cohesion, character, how it operates, resilience and sense of place.
- *Accessibility:* how infrastructure provided by public, private or not for profit organisations, including services and facilities is accessed and used.
- *Culture:* shared beliefs, customs, practices, obligations, values and stories, and connection to Country, land, places, waterways and buildings, both Aboriginal and non-Aboriginal.
- *Health and wellbeing:* physical and mental health.
- *Surroundings:* including ecosystem services such as shade, pollution control, erosion contro, public safety and security, access to and use of natural and built environment, aesthetic value and/or amenity.
- *Livelihoods:* how people sustain themselves through employment or business.
- *Decision-making systems:* extent community can have a say in decisions that affect their lives, access to complaint, remedy and grievance mechanisms.

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

- Environmental impacts – review of similar projects in the area, as well as development of Biodiversity Development Assessment Report
- Local plans and policies – findings from the review aided to contextualise and understand the local priorities as well as to identify local values.
- The existing social environment – demographic and social analysis in the form of a social baseline study.
- Feedback generated through preliminary consultation including findings from broader engagement undertaken as part of the EIS process.

Findings from other technical disciplines that contributed to the EIS were reviewed and potential social impacts defined. These included:

- Aboriginal Cultural Heritage Assessment Report (OzArk Environment & Heritage 2023)
- Biodiversity Development Assessment Report (OzArk Environment & Heritage 2023)
- Preliminary Hazards Assessment (ARUP, 2023)
- Soil and Agricultural Impact Assessment (Minesoils 2023)
- Landscape Character and Visual impact Assessment (Kleinfelder 2023)
- Bushfire Impact Assessment (Kleinfelder, 2023)
- Noise and Vibration Impact Assessment (RAPT 2023)
- Historic Heritage Impact Assessment (OzArk Environment & Heritage, 2023)
- Traffic Impact Assessment (Amber 2023)

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

- Project locality and activites.
- Local employment and procurement.
- Housing and services.
- Environment and cultural heritage.
- Cumulative impacts.

A full description of each social impact is provided in Section 5 of this report.

2.1.2.4 Social Impact Mitigations and Management

A mitigation and management framework was prepared with consideration of all potential social impacts and benefits to allow for the identification of:

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

Findings from these stages of Phase 2 were used to provide recommendations for the SIA report.

2.2 LIMITATIONS

This SIA has been based on the best available information relevant to the SEARs specific to the Project. The SIA assessment is based on the current Project design. The Project is subject to detailed design. It has been noted that while Project components are generally fixed, some aspects of the Project (including the siting of project elements within the development footprint and construction methodology) are subject to change during the detailed design process. This may require further assessment to ensure the SIA assesses the social impacts and benefits of the detailed design adequately. The objective is to ensure that the detailed design can meet construction requirements while continuing to minimise social and environmental impacts and deliver benefits.

The SIA relies on several assumptions regarding workforce estimates and the associated accommodation strategy that will be refined during later stages of Project planning and development. The outcomes of the impact assessment and related mitigation strategies may differ upon confirming detailed Project plans.

Other assumptions and limitations of the research include:

- A key source of data describing social conditions is the ABS Census of Population and Housing, the latest of which was in 2021. There may have been changes to social characteristics since this census event. A consideration is that the 2021 Census occurred during the height of COVID epidemic restrictions which may have impacted upon socio-economic trends and characteristics as recorded.
- Social infrastructure reviewed in the social baseline predominantly considers government-provided facilities or services. In some instances, it is possible that local communities access services through private providers for which data is not available.
- Preliminary consultation data was largely verbal, and as such views of the involved community and/or stakeholders may not be verbatim.
- Potential social impacts have been informed by evidence from primary and secondary data and the preliminary consultation sources, including:
    - consultation with neighbours (within 5.0km) of the Project
    - academic, government, and grey literature (e.g. reports, working papers, government documents,)
    - baseline data.

3 PRELIMINARY STAKEHOLDER CONSULTATION

Edify recognises that major solar farm developments, particularly those that include large-scale BESS, are still relatively new to NSW. Accordingly, a strong emphasis needs to be placed on engagement to inform stakeholders as to the nature of such projects, to fully describe potential project impacts, to explain proposed measures for impact management and mitigation, and to provide opportunities for stakeholder input into the development process. Edify commenced community engagement as part of the site selection process and has continued that engagement throughout the impact assessment process. The initial engagement has been reported in the Scoping Report (Edify 2023).

3.1 KEY STAKEHOLDERS AND ENGAGEMENT UNDERTAKEN

The stakeholders identified for engagement fall into in three main categories – neighbours, community groups and members, and government (local/state/federal). The following stakeholders for engagement have been identified:

Neighbours

- neighbours of the project site within 5.0km

Community groups and members

- Narromine Local Aboriginal Land Council
- Gallanggabang Aboriginal Corporation;
- Girragirra Murun Aboriginal Corporation;
- Timothy Stubbs;
- Nathan Toomey;
- Wiradjuri Council of Elders;
- Gomery Cultural Consultants;
- Sonione Wakabut Rogers;
- Paul Brydon;
- Thomas Dahlstrom;
- Stakeholder 1 (name withheld on request);
- Stakeholder 2 (name withheld on request).

Government

- Narromine Shire Council
- Dubbo Regional Council
- NSW Rural Fire Service / Fire and Rescue NSW
- Transport for NSW
- DPHI
- Federal Member for Parkes
- Member of Parliament of NSW (Dubbo Electorate)

Other Stakeholders

- Essential Energy
- Sunrise Energy Metals

The summary of engagement to date has involved:

- *Neighbours*: direct contact has been initiated with 16 neighbours of the project site offering opportunities to discuss the proposal, and its potential impacts and opportunities. Edify corresponds with all community members within 3,700m of the project boundary, totalling nine residences, with the closest residence

located approximately 1,795m from the project boundary. Edify's project manager has established correspondence between all residents within 3.7km and maintains efforts to engage with all residents within 5km of the project boundary.

- Community: consultation opportunities have been (and will continue to be) offered to the community living in the Narromine Shire Council LGA, structured to enable community members to hear directly from Edify about the project, including aspirations, key features, work undertaken to date and future process/timing and ask questions, raise concerns and suggest ideas.
- Government: Government/elected representatives including the State and Federal Members and Narromine Shire Council members have had a briefing on the project delivered, with follow up Project updates provided. Further pre-lodgement and workshop sessions have been held with Narromine Shire Council.
- Other: Discussions with Essential Energy started in mid-2022 through the submission of a Preliminary Connection Enquiry. Confirmation was given of the available capacity on the transmission line for the connection of an additional generator subject to further precise studies. Discussions are ongoing between Edify and Essential Energy.
- There is an exploration lease over the Study Area, with Sunrise Energy as the tenement holder. Edify corresponded with Sunrise Energy in January 2023 to understand Sunrise Energy's position on Edify's interest in the land.

Aboriginal community consultation has been undertaken for the EIS development phase and is detailed in the Aboriginal Cultural Hertiage Assessment Report appended to the EIS, noting the obligations of Edify under the Aboriginal Cultural Heritage Consultation Requirements (ACHCRs) (DECCW 2010a).

3.2 Key Issues Raised

Early consultation with the neighboring landholders raised concerns of the potential cumulative impacts associated with the approved Inland Rail corridor to be constructed adjacent the western side of Eumungerie Road.

Narromine Shire Council have reinforced further assessment and discussion is required for two key aspects of the Project, including:

- Subdivision of the subject lot for the substation, and
- Accommodation resourcing pressures during construction.

3.3 Further Engagement

Stakeholder engagement will continue to be carried out across the remaining phases of the project including the:

- EIS exhibition and approvals phase
- project development phase
- construction, operation and decommissioning phases.

The engagement will be proportionate to the issues raised by the project and the level of stakeholder interest in the project and will be undertaken in a manner consistent with the requirements of the SIA Guidelines and *Undertaking Engagement Guidelines for State Significant Projects* (DPHI 2021).

Section 4 and Section 7 of the Community Consultation and Engagement Plan appended to the EIS details the procedures for managing further communications in the future phases of the Project as well as the ongoing community engagement commitments.

4 SOCIAL BASELINE

As per the SIA Guideline (DPIE 2023) the social baseline study considers the social impacts in the 'social locality'. Identifying the social locality begins with understanding the nature of the project, the characteristics of affected communities and how positive and negative impacts may be reasonably perceived or experienced by different people. A key source of baseline information is data collected through ABS Censuses (ABS 2021). The Study Area involves ABS statistical geographies as summarised below:

Local study area: Burroway suburb/locality and Narromine

Regional study area: Dubbo surrounds and Narromine LGA

State: NSW

4.1 PROJECT SOCIAL LOCALITY

4.1.1 Key Features of Project Locality

The Project falls within the traditional country of the Wiradjuri peoples. The subject site is in the Burroway locality of the western portion of the statistical area (level 2) (SA2) of Narromine, located ~18km northeast of Narromine. Major features of the Narromine LGA are the Macquarie River, Goobang National Park, the Narromine Aerodrome, the Trangie Wungunja Cultural Centre and the Narromine Iris Farm (visitNSW, 2023). The Shire also offers wetlands, lakes and wildlife in abundance, a historic gold mine and history dating back to Cobb & Co. The Narromine Shire LGA forms part of the Orana Region in central northern NSW which has a diverse industry base, rich history and geographical uniqueness, as well as many beautiful natural assets. It is rich in resources, with a highly productive agricultural sector providing food, wine and fibre to global markets as well as an increasing industry in renewables.

The Project area is situated at the south-eastern edge of the Brigalow Belt South bioregion, within the Pilliga subregion (NPWS 2003). The Brigalow Belt South bioregion extends from central Queensland to central western NSW. The Project area is located within the Macquarie (Wambuul) River catchment. The Macquarie River catchment, also referred to as the Macquarie-Bogan catchment, covers more than 74,000 square kilometres and is located within the Murray-Darling Basin. Several named and unnamed tributary drainage lines associated with the Macquarie River including Coolbaggie, Ewenmar, and Kookaburra Creeks extend to within 1.5 km of the Project area, however, no permanent waterway is within the Project area.

There are no residential dwellings within the proposed Project Area. The nearest dwelling (an associated dwelling) is located approximately 1.1km to the south-west of the western boundary. The surrounding land uses area predominantly agricultural, with 16 lot parcels within 5km of the Project hosting residential houses.

The Eumungerie Road corridor runs north-south adjacent the western boundary of the Project Area lot. The approved Inland Rail will traverse along the western edge of Eumungerie Road once constructed. Other infrastructure includes roads within 5km of the Project which are Narromine Shire Council owned. The Project Area is also covered by an exploration lease through Sunrise Energy.

4.1.2 Project Description and Area

The Project will involve the construction, operation and decommissioning of a PV solar facility with a generating capacity of 100MW, a BESS with a 100MW / 400MWh capacity and associated infrastructure. The Project will supply electricity to the distribution electricity grid via the existing electricity distribution network.

The Capital Investment Value has been estimated by Denary Quantity Surveying and reported to NSW DPHI and Narromine Shire Council separately to this EIS.

The Project description and key components is summarised in Table 4-1 below and shown in Figure 3. Further detail on the Project components is provided in the following sections.

Table 4-1: Project Description and Key Components

Project Terminology	Summary
Project Name	Burroway Solar Farm
Applicant	Edify Energy Pty Ltd
Project Area	Lot boundary to which the Development Application applies of approximately 495ha
Disturbance Footprint	Maximum directly disturbed area by Project construction and operation includes 398ha.
Temporary Disturbance	The maximum area of land that will be temporarily disturbed during construction of the Project is estimated to be 391ha.
Permanent Disturbance	The area of land that will be subject to permanent disturbance because of construction and operation of the Project until decommissioning is estimated to be 7ha.
Project Elements	
Solar Arrays	Capacity of up to 100MW AC, with 200,000 individual panels over approximately 391ha
BESS	• 100MW / 400MWh capacity. • De-centralised design will require separate enclosures (installed similar to inverter enclosures) throughout the subject lot. • Centralised design will be within the 2-5ha area allocated to the BESS and substation footprint.
Solar PV Conversion Units (PCU)/ Inverters	Approximately 27 PCUs throughout the subject lot.
Substation	• 33/132kV substation with associated step-up transformer. • Footprint approximately 100m x 80m. • Substation likely to be subdivided from Lot 70 on Deposit Plan 1251856 as per Essential Energy requirements.
Electrical Reticulation Infrastructure	• Internal underground high-voltage (HV) cables between solar arrays, BESS and transformers, and substation. • Approximately 30m distance between substation and existing 132kV line.
On-site Permanent Supporting Infrastructure	• Site access entry's, site access road and internal roads. Perimeter road for firebreak purposes. • Operations and Maintenance building containing maintenance building, including workshop, office, toilet and showers, kitchen/lunch-room, first-aid area, meeting room waste bins and reception area. Footprint of approximately 10m x 8m, not including 4-5 staff parking spaces. • Water tanks for emergency and potable water supply. • Minimal outdoor lighting. • Security Fencing (surrounding entire site and separately around substation).
Off-site Supporting Infrastructure	• Waste disposal facilities • Existing public road and communications networks • Upgrade of existing public road
Construction	
Duration	Approximately 18 months
Hours	7am to 6pm Monday to Friday 8am to 1pm Saturdays No Sundays or Public Holidays.

Project Terminology	Summary
Workforce	250 full-time equivalent across construction duration: • 30 for 16 months of general construction phase • 60 for site mobilization • 150 site-setup • Up to 250 for solar panel and BESS construction • 60 for substation construction
On-site Temporary Infrastructure	• Parking and turn-arounds for construction vehicles and machinery expected to be located within 5ha area dedicated to O&M building and construction parking area. • Laydown for equipment, within 5ha area for O&M building and construction parking area.
Ancillary Activities	Import of construction materials
Transport Route	Main equipment delivery via Port of Botany. External road upgrades to Eumungerie Road for site entry requirements.
Operations	
Duration	Operational life of 30 years
Hours	24 hours a day, seven days a week
Workforce	Approximately 4-5 full-time equivalent

The Project Area (Figure 3) will extends over Lot 70 on Deposit Plan 1251856 and in two minor locations along Eumungerie Road for the purposes of site entry locations. The disturbance footprint represents the maximum impacts associated with the construction and operation of the Project. It encompasses 398ha and represents:

- Temporary disturbance footprint, which is the area of land that will be temporarily disturbed during construction of Project with areas to be rehabilitated progressively throughout construction and on completion of construction, and
- Permanent disturbance footprint, which includes the area of land that will remain disturbed throughout the operational life of the Project and will not be suitable for co-use with agriculture, including the BESS, substation and associated facilities infrastructure.

Table 4-2: Land Use in Project Area

Landholder	Project Component	Land Description
Associated	Solar Farm and BESS	Lot 70 DP1251856
Narromine Shire Council	Site Entry Points	Eumungerie Road
Essential Energy	Connection into existing 132kV line	Powerline easement

The Project Area includes areas declared as Non-development Zones which includes:

- The patch of PCT 202 in the southern portion of the lot,
- The stand of PCT 55 (planted) in the center of the lot,
- Three mature isolated trees,
- Four farm dams, and
- The Kookaburra Homestead complex.

The Project Area design currently includes a 10m Asset Protection Zone (APZ) set 15m from the solar arrays boundary, and a 10m APZ surrounding all Non-development Zones. All infrastructure including the solar arrays, inverters, BESS (both centralized and de-centralised options) and substation are setback at least 50m from the lot boundary.

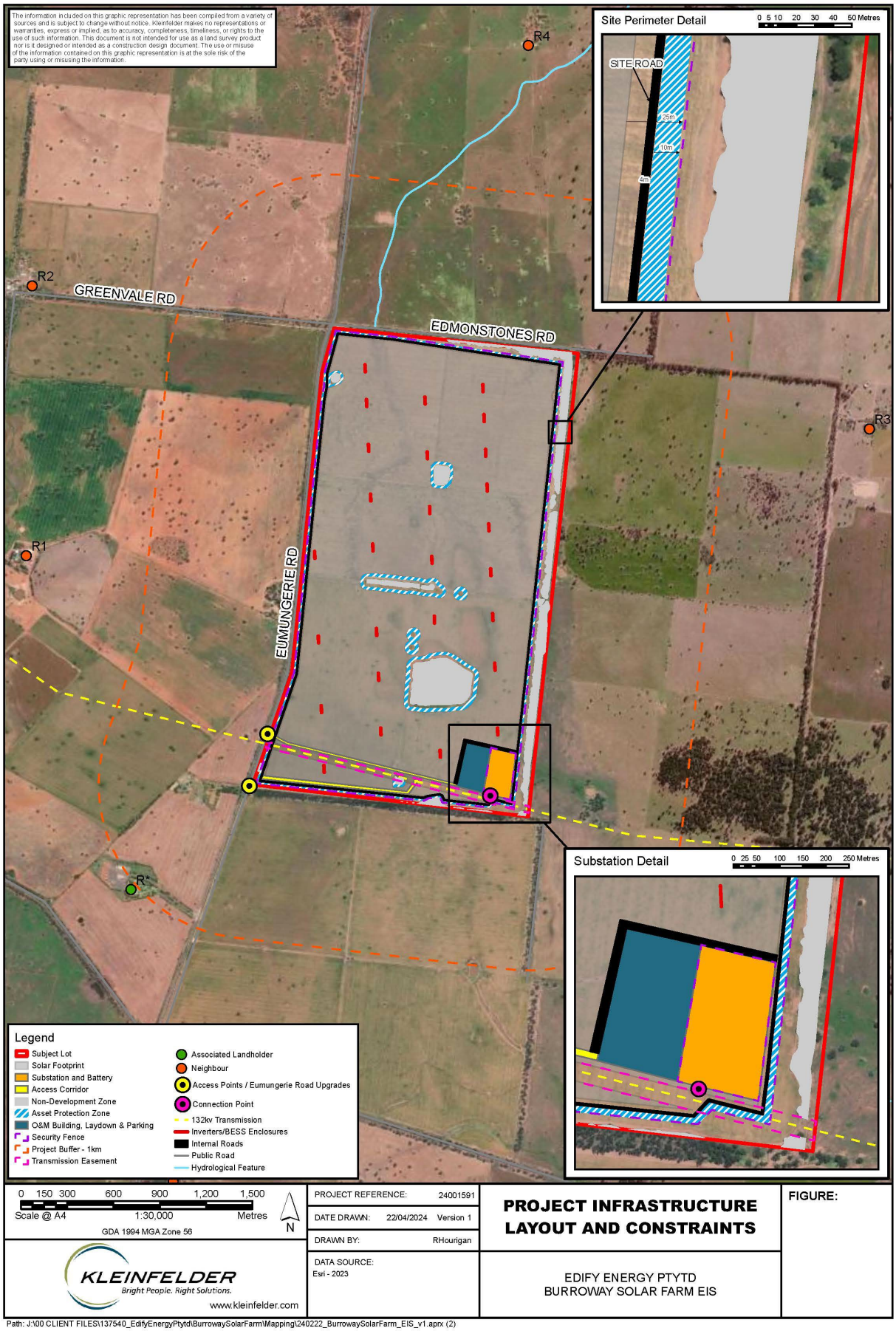

Figure 3: Project Infrastructure Layout

4.1.2.1 Project Timeframes and Activities

Construction

The construction of the project is expected to take approximately 18 months and to commence in the 2026/27 financial year, with the peak construction period over 6-9 months, to allow for the gradual development and commissioning of the facility and will typically be undertaken in four stages. Construction activities will be undertaken during standard hours for construction works (i.e. 7 am to 6 pm Monday to Friday and from 8 am to 1 pm on Saturdays). Any construction or commissioning activities outside these standard working hours will require approval from relevant authorities. Any affected local residents will be informed of the timing and duration of the proposed activities, prior to the commencement of any works.

While the project is yet to undertake a detailed EPC tender process, the typical construction stages are as follows and presented in Table 4-3:

- Stage 1: Upgrades to Eumungerie Road for access to allow site mobilisation, including establishment, earthworks and drainage requirements
- Stage 2: Site setup, including construction of concrete hardstands, internal access tracks, civil works, and delivery of solar and battery infrastructure
- Stage 3: Installation of infrastructure solar panels, BESS units, transformers, switch room, control room, operations and maintenance building and electrical works (may overlap with Stage 2). Installation of substation and connections.
- Stage 4: Post-construction site rehabilitation (to occur progressively following solar panel installation in Stage 3 and post-construction)

Table 4-3: Estimated Construction Schedule

Stage	Month																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Upgrade Eumungerie Road																		
Site mobilization and setup																		
Installation of infrastructure																		
Site rehabilitation																		

Stage 1: Eumungerie Road- Site Access Upgrade

The intersection between Eumungerie Road and the site access would require a Basic Right Turn (BAR) treatment. Rural Basic Right-turn Treatment (BAR) design as per the Austroads Guide to Road Design (Part 4A) would involve minor widening of the carriage way to accommodate passing vehicles, sealing of the access and construction of widths for heavy vehicle access as per the Appendix C of the Traffic Impact Assessment (Appendix K).***Stage 2: Site Preparation and Set-up***

Once final project consents are obtained, site preparation will commence immediately across the development area to allow for the timely installation of access points, internal roads and drainage, and to undertake preparatory earthworks. Site preparation activities will generally involve the following:

- undertaking land survey, geotechnical and other preliminary investigations
- removing existing fencing and establishing boundary security fencing
- establishing the site access points and internal roads for delivery of machinery and equipment
- establishing temporary ancillary facilities for use during construction including lay-down areas and contractor facilities.Delivery of solar and battery infrastructure

Stage 3: Infrastructure Installation

The installation of infrastructure will commence directly after site preparation works are finalised. The key infrastructure activities will include:

- installing drainage works and regrading of surface features (where required)
- constructing the O&M building and associated site facilities
- installing mounting structure foundations by driving steel piles pneumatically into the ground using specialist equipment (dependant on ground conditions ground screws may be used)
- attaching steel mounting structures to the ground piles
- installing solar panels onto the mounting structures, including tracker units
- installing and connecting the solar panels to the DC boxes with above-ground cabling
- installing BESS units
- installing the inverter enclosures, containing inverters and transformers
- laying concrete slab for substation and installing substation components, including transformers
- connecting the DC boxes to the inverter enclosures and connecting the inverter enclosures to the centralised switchboard, by trenching and underground cabling
- connecting the BESS units to the centralised switchboard
- grid connection through the installation of an above-ground transmission line from the substation to the Essential Energy distribution line
- commissioning and testing of solar panels, inverters, BESS units switch equipment, step-up transformers, monitoring systems, and electrical protection systems.

Construction traffic is expected to generate 48 vehicle movements per day during the peak construction (approximately 6 months) reducing to approximately 25 vehicle movements per day during the subsequent solar panel and battery construction phase (approximately 3.5 months). In addition, it is estimated that three over-mass (OM) vehicle return trips to site will be required during substation construction works, undertaken outside of peak periods.

Operation

The operational lifespan of the facility is expected to be in excess of 35 years. Operational activities involve monitoring of equipment on a daily basis, full servicing of inverters, the BESS and substation equipment on an annual basis, and cleaning of the solar panels at regular intervals depending on system performance benchmarked to weather conditions. The solar panels are expected to need cleaning up to two times per year. Edify's experience is that cleaning of solar panels may not be required each year, due to rainfall providing a natural cleaning mechanism. Any water required for cleaning of the panels will be brought to site in water trucks. Land between the panels and along the boundary of the solar farm will require maintenance to control vegetation growth. Such maintenance will be undertaken either through the use of livestock (sheep) or by mowing with a slasher. There will be minimal storage of hazardous or dangerous goods or materials on site during the operation of the project.

The operational hours of the solar farm will be 24 hours per day, 7 days per week.

The average traffic generation during operation will not exceed eight vehicle movements per day (single trips to or from the project site).

4.1.2.2 Workforce

Construction

Up to 250 full-time equivalent jobs are expected to be created during construction. The expected average workforce during the construction period is anticipated as follows:

- general across the construction phase – 30 (16 months)
- site mobilisation – 60 (2 months)
- site setup – 150 (5.5 months)
- solar panel and battery construction – 250 (2.5 months)
- substation construction – 60 (6 months)

Peak construction workforce levels will be reached during solar array and battery construction when up to 250 workers may be on site at the same time, including Edify staff and personnel from the EPC contractor and sub-contractors. During general construction periods outside of the peak up to 60 people may be present.

Most of the workforce is expected to be sourced from the local area. Non-local workforce or contractors are likely to come from other areas of NSW and are likely to seek accommodation in Dubbo or Narromine and other nearby towns. It is expected that a significant proportion of the construction staff movements will be made to and from site using buses from either of those two towns. Some contractors will need to travel to and from site using their own vehicles due to the equipment required.

In particular, large numbers of technicians, tradespeople, machinery operators, drivers and labourers will be required during construction. Edify's policy, to be passed down to the EPC contractor, will be for the project workforce to be preferentially sourced from the local region where the requisite skills and experience exist. Edify's policy will also be for local services to be preferentially sourced from the local region. Indirect, multiplier effects will also flow into local towns and communities from increases in local business activity during construction and, to some extent, operation. When salaries are earned and spent locally, the money can in turn be re-spent locally, raising the overall level of economic activity, paying more salaries, and building the local tax base.

Operation

During operation, it is expected that there will be up to four full-time equivalent personnel based at the solar farm to manage site activities and to support routine plant operation and maintenance. The operational staff are likely to originate from Narromine and Dubbo region or the surrounding LGA's.

4.1.2.3 Project Accommodation

Accommodation for non-local hired workers is anticipated to be sourced through available rental and motel accommodation in Narromine and surrounding major towns such as Gilgandra, Dubbo, Wellington and surrounding areas. Non-local hires include those residing outside of a safe commute distance, and as such will require local accommodation. Trangie, Warren and Peak Hill are three regional centres within 100km of the Project with acceptable commuting times that could also provide accommodation options and a local workforce.

4.2 Policy and Planning Context

This section provides a summary of the relevant policy, plans and strategies that inform an appreciation of potential social impacts and benefits associated with the Project. The Project's overall consistency with relevant policies and plans is also addressed in Section 3.2 and Appendix C of the EIS.

4.2.1 State

NSW Electricity Strategy

The NSW Electricity Strategy is the NSW Government's plan for a reliable, affordable and sustainable electricity future that supports a growing economy. The NSW Government's strategy to respond to these challenges and to achieve its objectives is to: first, improve the efficiency and competitiveness of the NSW electricity market by reducing risk, cost, process-driven delays and by ensuring investment in new energy saving, demand response and generation technologies.

Implementing the Strategy will lead to a $3.4 billion net economic benefit and support cleaner air for NSW. This Strategy is designed to complement the work of the national energy market bodies. This Strategy sets out actions to address the specific needs of NSW while long term national reforms are developed and implemented. Its purpose is to provide certainty to investors and foster community confidence about how the NSW Government will improve the affordability and reliability of the electricity system while also protecting the environment.

The Project will contribute to the development of the declared Orana-West REZ. The REZ will in turn meet the aims of the Electricity Strategy by ensuring a secure, reliable energy system. This region has been formally identified as an ideal location to play a key role in renewable energy generation due to excellent renewable energy resources and the opportunity to utilise existing transmission infrastructure, rehabilitated mining land, port and transport infrastructure and a skilled workforce.

NSW Climate Change Policy Framework

The NSW Climate Change Policy Framework outlines the NSW Government's long-term objectives to achieve net-zero emissions by 2050 and to make NSW more resilient to a changing climate. This policy framework has a vision to expand clean energy, helping households and businesses reduce their bills by saving energy and preparing for the impacts of climate change. The framework also guides the NSW Government's policy and programs. The Project will contribute to the overall reduction of carbon emissions in NSW, helping the State of NSW to achieve its objective of net zero emissions by 2050.

Net Zero Plan

The Net Zero Plan Stage 1: 2020–2030 is the foundation for NSW's action on climate change and goal to reduce emissions by 70% by 2035 and reach net zero emissions by 2050. The Project will contribute to this plan by reducing carbon emissions by producing clean energy.

NSW Electricity Infrastructure Roadmap

In November 2020, the NSW Government released the NSW Electricity Infrastructure Roadmap (the Roadmap). The Roadmap is the State's 20 year plan to transform the electricity system into one that is cheap, clean and reliable. The Roadmap proposes to lay the foundations for future generations to enjoy more secure, reliable and affordable electricity. The Roadmap is enabled by the Electricity Infrastructure Investment Act 2020 (EII Act).

The Roadmap envisages a range of public and private entities will help to coordinate investment in transmission, generation, storage and firming infrastructure as ageing coal-fired power plants are retired from 2023.

The Roadmap will support the private sector to deliver at least:

- 12 gigawatts of new renewable electricity generation,
- 2 gigawatts of long-duration storage, such as pumped hydro.

The Electricity Infrastructure Roadmap will give industry and investors the certainty they need to invest in the infrastructure, with at least and estimated $32 billion of private sector investment to be injected into the NSW economy by 2030. The project will contribute to this need for additional energy generation, providing with to 100 MW of generating capacity

Renewable Energy Zones

Renewable Energy Zones (REZs) combine:

- New renewable energy infrastructure, including generators (such as solar and wind farms) storage (such as batteries and pumped hydro),
- high-voltage transmission infrastructure.

By connecting multiple renewable energy projects and electricity storage, these REZs capitalise on economies of scale to deliver cheap, reliable, and clean electricity for homes and businesses in NSW. The NSW Government expects REZs will deliver multiple benefits to NSW, including:

- Energy bill savings from reduced wholesale electricity costs,
- Emissions reduction from a cleaner energy sector,
- Reliable energy from significant amounts of new energy supply,
- Host community benefits through strategic planning and best practice engagement and formalised benefit sharing arrangements.

The NSW Government is in the development phase for the State's first Renewable Energy Zone (REZ) in the Central-West Orana region (which includes the subject site). The Central-West Orana REZ is approximately 20,000 square kilometres centred by Dubbo and Dunedoo. The REZ will initially unlock at least 3 gigawatts of new network capacity by the mid-2020s, enough to power 1.4 million homes. New transmission infrastructure will enable generators (such as solar and wind farms) participating in the REZ to export electricity to the rest of the network. It is expected to bring up to $10 billion in private investment to the Central-West Orana region by 2030. At its peak, this REZ is expected to support around 5,000 construction jobs in the region.

The location of the Central-West Orana REZ was chosen following a detailed statewide geospatial mapping exercise undertaken by the NSW Government in 2018. This initial analysis sought to identify optimal locations to host renewable energy generation around the State, including areas with strong renewable energy resource potential, proximity to the existing electricity network, and consideration of potential interactions with existing land uses, including agricultural lands and biodiversity conservation.

The importance of the Central-West Orana REZ has also been recognised in the Australian Energy Market Operator's (AEMO's) Draft 2024 Integrated System Plan (ISP). The Central-West Orana was the first REZ to be declared in Australia and has enormous potential for the development of solar and wind projects that can contribute energy to the National Electricity Market (NEM), support jobs and drive investment across the regional economy.

Large-scale Solar Guideline

The NSW Large Scale Solar Guideline provides the community, industry, applicants and regulators with guidance on the planning framework for the assessment of large-scale solar energy projects under the EP&A Act. The guideline applies to development of large-scale solar energy projects that are declared as a state significant development (SSD) such as the proposed development.

20-year Economic Vision for Regional NSW

A 20-Year Economic Vision for Regional NSW (February 2021) is the NSW Government's plan to drive sustainable, long-term economic growth in regional NSW. It seeks to build on unprecedented NSW Government investment in commercial, economic, environmental and social infrastructure by committing to further develop regional NSW's key enablers of economic growth. Priorities of the strategy are to work together with broader government strategy to position thriving and resilient regional communities to:

- be an appealing alternative to city living, with enhanced connectivity via the hub and spoke model described in the Future Transport Strategy 2056 and improved local amenity through programs that improve digital connectivity, local infrastructure and access to services,
- contribute to future transformation envisaged under the Global NSW Strategy, with globally significant precincts in technology, food and agribusiness, logistics and advanced manufacturing,
- remain at the forefront of Australia's drive for high productivity and world-leading infrastructure, with a highly educated, creative workforce and a global source for trade, investment and tourism, as outlined in the NSW 2040 Economic Blueprint.

The 20-Year Economic Vision document recognises renewable energy as an emerging industry that is driving reliable, affordable and sustainable energy future that supports a growing economy. Narromine is considered a Growth Centre under the plan and is noted to require *long-term planning will be important to support this anticipated growth to ensure these areas have the right infrastructure and services.* Burroway SF will be key in providing reliable energy infrastructure to support power needs of the Narromine Shire.

The Burroway SF is an opportunity for priority actions of the strategy to be reached through the Project, in particular the provision of or addition to:

- the reliable accessible water and energy,
- the skilled labour force for current and future needs of the regions, and
- regulation and planning to promote commercial opportunities.

The project will contribute to this vision by assisting with the economic growth of regional NSW and further encouraging renewable energy project development through its successful operation.

4.2.2 Regional

Central West and Orana Regional Plan 2041

The Central West and Orana Regional Plan 2041 (CWORP41) considers a 20-year timeframe with a focus on the next 5 years. This plan will guide land use planning decisions in the region by the NSW Government, councils and others to the year 2041.This plan sets out 23 objectives relating to four broad themes for the region around region-shaping investment, sustainable and resilient place, people, centres, housing and communities, and prosperity, productivity and innovation.

The project is compatible with these goals, and in particular with the following:

- **Objective 2:** Support the State's transition to Net Zero by 2050 and deliver the Central-West Orana Renewable Energy Zone. The Burroway SF will facilitate and contribute to the Net Zero plan and growth of the REZ through its delivery of renewable energy and storage facility.
- **Objective 4:** Leverage inter-regional transport connections. Construction of the Burroway SF will utilise regional transport connections.
- **Objective 7**: Plan for resilient places and communities. The Project EIS phase has considered all potential hazards associated with the infrastructure and the surrounding environment, including the changing climate, as part of the design and planning.
- **Objective 8:** Secure resilient regional water resources. The Burroway SF will not source or impact on the groundwater resources of the site and wider locality.
- **Objective 9:** Ensure site selection and design embraces and respects the regions landscapes, character and cultural heritage. The Scoping Report and EIS phase of the Burroway Project has assessed and considered site selection and design throughout all planning and specialist studies with respect to landscape, character and cultural heritage.
- **Objective 10:** Protect Australia's first Dark Sky Park. The Landscape Character and Visual Impact Assessment for Burroway SF assessed the Project against the Dark Sky Planning Guideline, to ensure the Project would not impact on the Dark Sky Park.
- **Objective 12:** Sustain a network of healthy and prosperous centres. Edify is committed to sourcing labour and services from the local region, supporting growth of new and existing businesses in regional centres.
- **Objective 16**: Provide accommodation options for seasonal, temporary and key workers. Edify is committed to hiring locally (where possible) to reduce accommodation burdens and will work closely with Narromine Council and other key stakeholders in Trangie and Dubbo to develop an Accommodation and Employment strategy to minimise negative impacts on the rental market and other users of short-term accommodation, such as tourists.
- **Objective 18:** Leverage existing industries and employment areas and support new and innovative economic enterprises. Edify is committed to sourcing labour and services from the local region, supporting growth of new and existing businesses and enterprises.
- **Objective 19:** Protect agricultural production values and promote agricultural innovation, sustainability and value-add opportunities. Edify will assess the potential combination of sheep grazing in combination with the solar farm operation and is committed to rehabilitation of the site back to the pre-existing agricultural condition.
- **Objective 20:** Protect and leverage the existing and future road, rail and air transport networks and infrastructure. The Burroway Project will leverage the existing and future road network for transport during construction, operation and decommissioning.

The development of the Burroway SF is consistent with CWORP41's themes more broadly, and in particular, majority of the objectives under each theme.

4.2.3 Local

Narromine Community Strategic Plan 2032

The Narromine Community Strategic Plan 2032 (NSC), which was developed by the Council, outlines the future vision and aspirations of the community to assist with long-term planning, prioritisation and decision making within the Narromine Shire community. The Plan is the highest-level strategic planning undertaken by Council, with a ten-year time frame. It is the primary driver for all planning undertaken by the Council and other stakeholders. The following four guiding principles were identified and developed through extensive community consultation:

- Vibrant Communities. Creation of a safe, healthy and connected region that encourages participation and creates a strong sense of pride in our community and each other's wellbeing.
- Growing Economy. Diverse economy with thriving businesses that offer a range of employment opportunities supported by skill development options.
- Protecting and Enhancing the Environment. Value of the natural and built environment, and Narromine's resources for the enjoyment of the community and visitors to the Shire.

- Proactive Leadership. Open and accountable local government that involves community in the decision-making processes and effectively manages public resources through sound financial management and well-informed strategic planning for the Shire's future.

The Burroway SF is compatible with these guiding principles, in particular with the following:

- **Growing Economy:**
  2.1.2 Form Partnerships and alliances to market the Shire to new residents and businesses. Compatibility with this action is in the form of a VPA and selection of Narromine Shire for development.
  2.2.5 Planning mechanisms that support the provision of suitable and serviceable land that will support infrastructure that allows for localised employment opportunities. Compatibility with this strategy is demonstrated by Edify's commitment to sourcing labour and services from the local region, as well as the selection of suitable land for renewable infrastructure.
  2.3.1 Support the growth and development of new and existing businesses and industry. Compatibility with this strategy is demonstrated by Edify's commitment to sourcing labour and services from the local region, supporting growth of new and existing businesses. Edify is also aiding in the growth of the renewables industry via location of a renewable development in the Shire and wider REZ.
- **Protecting and Enhancing the Environment:**
  3.1.5 Reduce waste to landfill through effective and efficient domestic waste and recycling service to the community. Edify's compatibility with this strategy is demonstrated through early planning for management of waste during construction, operation and decommissioning. Edify has undertaken extensive consultation with recycling companies for solar farm infrastructure once decommissioning is required.
  3.2.3 Support, promote and encourage environmentally sustainable practises throughout our businesses. Edify's compatibility with this strategy is evident in the overall business approach to the supply of renewable resources for the NSW and wider Australian power system.
  3.3.1 Implement water and energy efficiency programs and identify activities and initiatives for alternative water and energy sources. Compatibility with this strategy is evident by the very nature of the proposed project.
  3.3.2 Ensure development needs align to utilities infrastructure. The infrastructure proposed for the Project is for the support of the existing electricity system for the Shire and wider region.
  3.6.1 Ensure local and regional road network best meets the needs of road users and industry. Extensive consultation with Narromine Shire Council and Transport for NSW for the development of a Traffic Impact Assessment, to ensure the local and regional road network are suitable for the Project requirements.
- **Proactive Leadership:**
  4.3.2 Ensure sufficient resources to meet current and future needs of the community. Compatibility is demonstrated through the proposal itself, which is reliable renewable energy to facilitate electricity needs of the Shire.
  4.4.3 Develop and build partnerships with state and federal governments, industry and community organisations to foster development and delivery of community services and emerging business sectors. The emerging renewable industry is being fostered by Projects such as Burroway SF, which will foster development of renewables and relevant business streams within the Shire.

The development of the Burroway SF is consistent the broad tenure of the Narromine Community Strategic Plan's goals.

4.3 COMMUNITY SETTING

The subject site is in the Burroway locality of the western portion of the statistical area (level 2) (SA2) of Narromine, located ~18km northeast of Narromine. The Burroway area is mostly zoned for Primary Production (99.78%) and Infrastructure (0.22%), with a large portion of persons who are employed in Agriculture, Forestry and Fishing (47%), and Construction (8%).

Narromine Shire is rural, with several townships which include residential, industrial and commercial areas. Much of the rural area is used for agricultural activities predominantly sheep, cattle and wool production, as well as broadacre cereal crops. Cotton production has increased in recent years. Major commercial nurseries and research facilities at Narromine support the national forestry and vegetable industries and the Trangie Research

Centre is one of the largest broadacre agricultural research centres in Australia. Significant mineral resources have been discovered near Tomingley in the south of the Shire.

Major features of the Narromine LGA are the Macquarie River, Goobang National Park, the Narromine Aerodrome, the Trangie Wungunja Cultural Centre and the Narromine Iris Farm (visitNSW, 2023). The Shire also offers wetlands, lakes and wildlife in abundance, a historic gold mine and history dating back to Cobb & Co.

The Narromine Shire LGA forms part of the Orana Region in central northern NSW which has a diverse industry base, rich history and geographical uniqueness, as well as many beautiful natural assets. It is rich in resources, with a highly productive agricultural sector providing food, wine and fibre to global markets as well as an increasing industry in renewables.

Narromine and Trangie offer public, catholic and independent education from Kindergarten to Year 12. The TAFE NSW Dubbo campus which offers a wide variety of practical courses.

The community boasts a comprehensive health care system and local providers who are committed to delivering high quality health services to the community. The Western Region Area Health Service manage two public hospitals (Narromine and Trangie) encompassing a broad network of general and specialist practitioners and a range of outreach services (NSC, 2023). Medical centres, dental clinics, pathology and aged care facilities are accessible within the Shire, whilst Dubbo and Orange provide the region with an extensive range of specialist services and private hospitals.

The Narromine Aerodrome has a strategic plan to guide future developments in and around the Aerodrome to firstly protect the facility and secondly to encourage appropriate developments within its boundaries. In 2015 Council revised the original strategy and developed the Narromine Aerodrome Strategic and Master Plan in consultation with the Aerodrome users and the community to guide development in the Aerodrome precinct for the following 25 years (NSC, 2023). Narromine Shire is set to benefit from the new 1700 km freight rail connection between Melbourne to Brisbane – Inland Rail.

4.4 Population and Demography

Burroway has a recorded population 171 residents (ABS, 2021). The wider Narromine LGA has an estimated population of 6534 (ABS, 2021) over an area of 595,625.4ha, with the working age population (aged 15-64 years) consisting of 3731 people (57.1% of the population). The main town centre and majority of the population within the LGA resides in Narromine with the remainder of the Shire spread between:

- Trangie: 35 km to the west (approximate population of 1,070),
- Tomingley: 50 km to the south (approximate population of 340),
- Approximately 1,450 people live in the surrounding rural areas.

Major towns and respective LGAs within approximately a 100 km radius of the project site include Dubbo (Dubbo Regional LGA), Wellington (Dubbo Regional LGA) and Gilgandra (Gilgandra LGA). The latest population data for these towns and others within approximately 100 km of the project site and populations over 2000 are listed in Table 4-4.

Table 4-4: Towns within 100km of Narromine with Populations >2000

Town	Population	Distance from Site (km)
Dubbo	40,614	30
Wellington	4,628	77.5
Gilgandra	3,506	50

4.5 VULNERABLE GROUPS

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 change. Understanding vulnerability and vulnerable groups in local and regional areas facilitates understanding of the differential distribution of impacts across stakeholder groups.

There are certain demographic and social 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 recipient to welfare and/or social housing and/or who are unemployed.
- Culturally and linguistically diverse populations, such as those people who do not speak English as their primary language.

Table 4-5 lists indicators of potentially vulnerable groups in the SIA study area, with data for NSW provided for comparison.

Table 4-5: Indicators of Potentially Vulnerable Group in SIA Study Area

Indicator	Local area-total		Dubbo Surrounds		Narromine LGA		NSW	
Population	3507		5963		6360		8,072,163	
People aged 14 years or under	796	22.7%	1259	21.1%	1347	21.2%	1,470,012	18.2%
People aged 65 years or older	823	23.5%	1062	17.8%	1387	21.8%	1,424,135	17.6%
Youth (15 to 24 years)	432	12.3%	605	10.1%	671	10.5%	954,079	11.8%
Need for assistance	178	5.1%	239	4.0%	306	4.8%	464,712	5.8%
Renter households where rent payments are greater than or equal to 30% of household income	123	3.5%	28	0.5%	154	2.4%	335,404	35.5%
Unemployed	80	2.3%	64	2.1%	121	1.9%	84,732	4.9%
Households where a non- English language is used	29	0.8%	36	0.6%	65	1%	2,126,268	22.4%

According to the 2021 Census, when compared to NSW, the vulnerable groups in the local area and Narromine LGA may include:

- people aged 14 years or under,
- people aged 65 years or older, and
- youth (15 to 24 years) (local area only).

Disability can be understood as people who need assistance in their day to day lives with any or all of the following core activities: self-care, mobility or communication because of a disability, long-term health condition (lasting six months or more) or old age. In the local area, 5.1% of people have a need for assistance which is higher than the regional area (4.8%) but lower than NSW (5.8%).

4.5.1.1 Aboriginal and/or Torres Strait Islander Population

At the time of the 2021 Census, 31.9% of the total population within the local area, 8.4% of Dubbo Surrounds and 20.4% of the regional area population identified as Aboriginal and/or Torres Strait Islander compared to 3.2% in NSW.

The largest demographic in the Aboriginal and/or Torres Strait Islander community in the regional area is children (aged 5–14 years). Compared to the total population of the regional area and NSW, there is a much smaller proportion of persons aged 65 years and older who identify as Aboriginal and/or Torres Strait Islander in the local area.

4.6 EMPLOYMENT, INDUSTRY AND INCOME

There is a range of data relevant to analysis of workforce skills and capacity. Due to the small population of the local study area, the workforce for this Project is likely to be sourced from key urban areas, the regional study area and further afield.

4.6.1 Labour Force

Within the local study area the total labour force was 1,465 people, 3095 in Dubbo Surrounds and Narromine LGA hosting a total labour force of 2,773. In the Narromine LGA, the working age population (aged 15-64 years) is 3731 people, equalling 57.1% of the population.

The unemployment rate of the local study area is confined to the Narromine locality at 5.8%, 2.1% in Dubbo Surrounds and 4.4% of the wide Narromine LGA, in comparison to 4.9% for NSW.

4.6.2 Labour Market

Analysis of the regional labour market provides an understanding of the potential availability of skills to support Project construction. Occupations relevant to project construction include manufacturing, electricity, gas, water and waste services; transport, postal and warehousing; construction and professional, scientific and technical services.

In 2021, across the regional area the construction industry provided employment for 511 workers. Across the other four related industries, an additional 755 workers are employed.

Should the Project have workforce needs that cannot be met by the Narromine LGA, there are an additional 822,421 people in NSW employed across the five construction-related industries. Workforce availability based on the five employment industries across the regional area and area of reference based on 2021 ABS census data is presented in Table.

Area	Electricity, gas, water and waste services	Construction	Transport, postal and warehousing	Professional, scientific and technical services	Manufacturing
Local	32	102	73	36	54
Regional	84	511	261	185	225
NSW	35,584	169,608	315,520	326,595	201,654

4.6.3 Occupation

Occupations most relevant to the Project include technicians and trade workers, labourers and machinery operators and drivers.

In the local study area, technicians and trades workers have the highest occupation rate at 13.9% with labourers following at 13.8%. The regional study area comparatively has an occupation rate of 14.3% for technicians and trades, 10.7% for labourers and 9.0% for machinery operators. This demonstrates a diverse range of occupations that could benefit from the Project, either through employment or procurement.

4.6.4 Industry of Employment

The top three industries of employment in the local study area at 2021 consensus were:

- Health Care and Social Assistance (14.6%)
- Agriculture, Forestry and Fishing (12.4%)
- Education and Training (11.2%)

The agriculture, forestry and fishing and health care and social assistance industries are also the top two employment industries in the regional study area at 18.4% and 12.8% respectively. The construction industry was 5.8% and education and training industry 4.6% for the regional area. This demonstrates the significance of the agriculture, forestry and fishing for the study area.

4.6.5 Income

Individual income data is one of many indicators of socio-economic status and is linked to factors such as employment status, age (e.g. students and pensioners often receive a lower income), qualifications and type of employment.

At the 2021 consensus, Narromine had the lowest total median personal income, total household income and total family income. Table 4-6 details the median weekly incomes for the local and regional study area localities.

Table 4-6: Median Weekly Incomes in Local and Regional Study Areas

Locality	Median total family income ($/week)	Median total household income ($/week)	Median total personal income ($/week)	Average Household Size
Burroway	2,562	2,062	833	3.4
Narromine	1,566	1,159	654	2.4
Dubbo Surrounds	2,154	1,952	863	2.8
Narromine LGA	1,721	1,308	717	2.5

4.7 Social Infrastructure and Services

Central to supporting the quality of life and well-being of communities, social infrastructure can be defined as the "community and individual support services and resources such as health, education, early childhood, community support, community development, culture, sport and recreation, parks and emergency services" (Australian Government Centre for Population 2020). Due to the likely need for the Project to source a proportion of the workforce from outside the local and regional area, it is important to identify the capacity of service provision and social infrastructure in the key urban centres and regional study area.

4.7.1 Education

In the local area, there are two childcare services and four schools for primary and secondary education. An additional childcare service and two schools are available in the wider Narromine LGA. For students choosing to attend school in Dubbo, a daily return coach service operates from Narromine also.

A total of 81 students attend preschool in the local area, compared to 278 students in the wider regional area. Students attending primary school in the local area make up 312, with 238 students attending secondary school. In the wider regional area, 1098 students were in primary school with 852 students in secondary school. Tertiary education is available in the nearby city of Dubbo, approximately 40km east of Narromine. According to ABS 2021 data for the Narromine LGA, the highest level of educational attainment of people aged 15 years and over is Year 12 (35.6%), followed by Year 10 (29.7%) and Certificates (22.2%).

Major commercial nurseries and research facilities in the local area support the national forestry and vegetable industries and the Trangie Research Centre is one of the largest broadacre agricultural research centres in Australia, in the Narromine LGA.

4.7.2 Health and Emergency Services

The local and regional study areas provide health care systems and local providers including the Western Region Area Health Service who manage two public hospitals (Narromine and Trangie). Medical centres, dental clinics, pathology and aged care facilities are accessible within the regional study area, with Dubbo providing a range of specialist services and private hospitals.

The local area also has a police station, ambulance station and fire and rescue station. The wider Narromine LGA has an addition police, ambulance and fire station all located at Trangie.

4.7.3 Community Services

Social infrastructure refers to community facilities, services, and networks that help individuals, families, groups and communities meet their social needs, maximise their potential for development and enhance community wellbeing.

The Narromine LGA is noted to have:

- child and family services
- housing services
- aged care services
- arts and cultural facilities
- health and recreation services.

4.7.4 Road Infrastructure and Transport

There are limited forms of public transport (train, bus, ferry, tram) in the local and regional area. As a result, the main mode of travel to work in the local and regional area is by car as either the driver or passenger.

The main road network in the local area is Mitchell Highway and Eumungerie Road. Narromine is located on the Micthell Highway which links to Newell Highway in Dubbo. The Mitchell Highway connects to the Great Western Highway at Bathurst in the east, eventually leading into Sydney.

Private companies operate bus services within Narromine, which provide services to Dubbo and Sydney. The nearest major domestic and international airports are Sydney Airport and Newcastle Airport which are both approximately 5.5 hours and 5 hours drive from Narromine respectively.

4.8 Baseline Summary

A strength of the local community is that the local and regional area is well serviced with social infrastructure and services particularly for vulnerable members of the community. This is also the case for educational services and institutions available in the regional study area. The high proportion of people occupied as technicians and trades workers and labourers, and high proportion of construction businesses is recognised as a strength and opportunity in relation to the Project in terms of local procurement.

However, the Narromine community does demonstrate relatively low levels of socioeconomic advantage with low incomes, tertiary qualification rates and high unemployment noting a 5.8% unemployment rate which is higher in comparison to 4.9% for NSW.

Potential direct, indirect, and cumulative impacts associated with the Project could occur across the local area. As the closest service centre and key township to the Project, Narromine is likely to experience the most direct social impacts and benefits, particularly with regards to:

- Project locality and activities.
- economic and business opportunities.
- access to housing and short-term accommodation.

5 SOCIAL IMPACTS AND BENEFITS

Findings from technical reports and initial stakeholder consultation have been used to capture local knowledge in the identification and assessment of social impacts, and to develop appropriate impact mitigation, and enhancement strategies. Assessment of social impacts considers a range of factors and potentially competing interests. The impact assessment is reflective of this and has:

- assessed some aspects of the project as both negative and positive as they relate to different groups of people included potential impacts and benefits on local communities and the broader region
- considered potential impacts on vulnerable sectors of affected communities
- considered community access to services such as housing and health care.

The following data and information have been used to identify the impacts and their associated risks:

- data collected as part of the social baseline
- findings from preliminary stakeholder engagement activities
- findings from technical studies

5.1 POTENTIAL IMPACTS AND BENEFITS

5.1.1 Project Locality and Activities

The project is expected to have a generally positive impact on the local and wider economy during construction (and decommissioning), with adverse impacts being minimal given the temporary (12-18 months) nature of the construction phase and the implementation of the management and mitigation measures.

This section provides an assessment of Project locality and activity benefits and impacts related to the theme of locality which refers to those impacts only likely to be experienced by people in areas immediately surrounding the Project area and associated activities. The specific locality impacts which have been assessed are:

- changes to the visual character of the local landscape
- perceived reduction in agricultural productivity
- increased traffic congestion and commute times due to Project construction

5.1.1.1 Changes to Visual Character of Local Landscape

During the construction and operation phase of the Project, changes to the visual character of the local landscape may occur. During operation, residents with views of the Project may experience a changed landscape and glare from the solar panels. Visual impacts to the local landscape may cause stress and anxiety for nearby residents and the broader community.

The Land Character and Visual Impact Assessment (LCVIA) undertaken for the EIS (Kleinfelder, 2023) assessed the visual impact of the Project during its construction and operation. The LCVIA identified potential temporary visual impacts during construction including traffic and vehicle movements, temporary laydown areas, installation of solar panels and BESS, installation of transmission towers and overhead wires, and construction of substations. The LCVIA noted visual impacts from Project construction are temporary in nature however standard practices and guidelines such as minimising creation of dust from vehicles and wind and restoring or remediating any earthworks undertaken during construction will be implemented.

The LCVIA noted that there are a minimal number of residential dwellings in the area. Views from existing residential dwellings were found to be limited or obscured already due to the distance and the existing environment with road reserve vegetation, stands of vegetation on neighbouring properties and paddock trees on other properties. No specific mitigation measures such as visual screening in the form of landscaping is considered to be required based on the findings of this report. The visual impact for motorists will be tapered by a road condition such as speed and angle of the road towards the Site.

5.1.1.2 Perceived Reduction in Agricultural Productivity

To accommodate the solar panels, substation and associated infrastructure the land will likely need to alter current agricultural land uses. Currently, the land is used for cropping. Agriculture is seen as Narromine LGA's main industry.

A Soil and Agricultural Impact Assessment noted there is a high level of certainty about the status of agricultural resources and enterprises in the Study Area, locality and broader region, based on the site verification assessment undertaken, consultation and desktop studies carried out. Further, there is a high level of confidence regarding the Project activities and requirements and commitments to returning land to pre-disturbance agricultural status following the life of the Project. Based on these factors, the impacts on agriculture as a result of the Project are determined to be minimal, temporary, and limited to the Study Area. These impacts can be summarised as the following:

- Temporary removal of up to 494.9 ha from agricultural land use within the Study Area for the duration of the Project.
- Temporary removal of potential agricultural primary productivity to the estimated value of up to $203,919 per year for the duration of the Project.
- Temporary removal of potential agricultural secondary productivity to the estimated value of up to $444,219, per year for the duration of the Project.
- Temporary impacts on soil resources within the Study Area where surface disturbance occurs.

The temporary impacts on agriculture listed above are considered a negligible impact in the context of the gross commodity values and land use coverage of the agricultural industries operating within the Narromine Shire LGA. Further, at the scale of the enterprises operating within the Study Area, impacts are considered offset as the involved landowners would be financially compensated.

Following construction and resting period of approximately one year, subject to the approval of Project stakeholders, Edify anticipates the implementation of agrisolar, the integration of solar panels and livestock grazing. This offers the potential to enable the continuation of agricultural land use within the Study Area and mitigate the above listed temporary impacts of the Project.

It is anticipated that by adopting the principles of impact minimisation and targeted soil and erosion management during Project construction and operation and implementing effective decommissioning and rehabilitation at the end of Project life, the Project will have no permanent negative impacts on agricultural resources or enterprises.

5.1.1.3 Project Construction Traffic Impacts

Project construction traffic, particularly during peak hour, may adversely impact local drivers particularly along Eumungerie Road. Increased traffic from the Project's construction vehicles could increase traffic congestion and cause delays in the local area and along the haulage routes.

The Traffic Impact Assessment (TIA) undertaken for the EIS (Amber, 2023) assessed the impact of Project construction traffic on existing traffic conditions. It is anticipated that during peak construction the project could generate up to 96 heavy and 43 light vehicle movements per day. The project is expected to generate approximately 48 vehicle movements during the morning and evening peak hour during the peak construction period, which would reduce to 27 vehicle movements over the typical construction periods.

In order to determine the traffic impact generated during construction, an analysis of the operation of 4 nearby intersections was carried out using the SIDRA computer modelling program. The assessment also included allowance for the cumulative traffic movements on the road network generated by other major projects in the surrounding area. All plant is expected to be delivered via Port Botany or the Port of Newcastle. Amber has undertaken an assessment of the expected access route from the port/point of origin to the site which identified a Basic Right Turn treatment is recommended for site access on Eumungerie Road. Based on the assessment, it is concluded that the proposed access arrangements for the project are suitable to accommodate the expected vehicle types and traffic volumes during the construction, operation, and decommissioning phases of the project.

In order to mitigate the impacts of the project during construction a Construction Traffic Management Plan would be prepared which outlines a range of traffic management measures in order to ensure the construction traffic would have a minimal impact to the capacity and safety of the surrounding road network.

5.1.2 Local Employment and Procurement

The key potential social and economic impacts (both positive and negative) that are expected to result from construction of the project include:

- increase in local employment, as the project will create direct employment for up to 250 staff and contractors during construction and up to 5 during operation.
- increase in local and regional economic activity due to preferentially sourcing project-related materials and services from local providers.
- increase in local workforce skills from the training and experience gained working on the project,

5.1.2.1 Local Employment and Training

The Project may employ local people and contract local businesses to provide services which would benefit the local economy. Studies show that ongoing local employment creates a multitude of local benefits, including continued provision of income for local workers, recirculation of a greater share per dollar into the local economy due to local supply chains and investment in local employees (Civic Economics 2012, 2013), as well as improved community well-being and resilience (Adams 2018).

Construction of the project will provide immediate social and economic benefits to the local community due to the need of the Engineering, Procurement and Construction (EPC) contractor to establish a workforce with the capabilities required for the different phases of the project, starting with site preparation. Opportunities will exist for a range of personnel, such as:

- managers
- engineers
- technicians
- tradespeople
- machinery operators
- drivers
- labourers
- administrative personnel
- human resources personnel
- consultants.

In particular, large numbers of technicians and trades workers, machinery operators and drivers and labourers will be required during construction. Edify's policy, to be passed down to the EPC contractor, will be for the project workforce to be preferentially sourced from the local region where the requisite skills and experience exist. As outlined in the Social Baseline, the local and regional study areas already have strong construction sector experience, and a significant proportion of the workforce is currently working in relevant occupations.

Edify's policy will also be for local services to be preferentially sourced from the local region.

5.1.2.2 Local Procurement

Procurement opportunities from the construction phase of the Project may benefit local and regional businesses. The Project will procure various goods and non-goods to construct the Project. The flow on effects of the construction phase will likely include demand for accommodation and food services, transport, postal and warehousing, rental, hiring and real estate services, and administrative and support services.

Indirect, multiplier effects will also flow into local towns and communities from increases in local business activity during construction and, to some extent, operation. When salaries are earned and spent locally, the money can in turn be re-spent locally, raising the overall level of economic activity, paying more salaries, and building the local tax base. For example, the 14.6% in the local area and 12.8% in the regional area of people employed in health care and social assistance, and 11.2% and 4.6% of people occupied education and training for the local and regional areas respectively, will likely benefit from a local increase in both population and customers with disposable income during the up to 18-month construction period.

The project will accordingly increase local employment opportunities and help drive growth in the area, while helping NSW to sustainably meet its energy needs.

5.1.2.3 Housing and Services

This section provides an assessment of Project benefits and impacts upon infrastructure and services. Impacts and benefits on infrastructure and services include:

- reduced availability of housing, short-term accommodation and community services for residents

- stimulation of the local economy through demand for accommodation, hospitality and retail services from additional workers from outside the area,

Pressure on local services has the potential to increase over the construction period due to the relocation of construction workers into the area. Short-term pressure on accommodation, local services such as health facilities, and local traffic, especially if construction of other major proposed developments or events in the region overlap with construction of the Burroway SF project.

In addition to Narromine, accommodation options and services are available in other regional centres within acceptable commuting times of the project site. The nearest major centres include Dubbo (46 km by road from the site), Wellington (96km by road from the site) and Gilgandra (74 km by road from the site). Trangie (43 km by road from the site, population 768), Warren (62 km by road from the site, population 1592) and Peak Hill (78km by road from the site, population 1287) are three regional centres within 100km of the Project with acceptable commuting times that could also provide accommodation options and a local workforce. It is therefore likely that the majority of the workforce can be locally sourced and that major migration into the area can be avoided, reducing risk of pressure on existing accommodation and services.

While the majority of the workforce is likely to be locally sourced, a number of short-term accommodation options are available within the Narromine Shire LGA and Dubbo Regional LGA (and neighbouring LGAs) including hotels, motels, motor inns and caravan parks, indicating that additional construction worker force could be practically accommodated in the town/region. The partial filling of existing accommodation vacancies will be a positive benefit for owners of those businesses and properties. Impacts during decommissioning are expected to be similar to those outlined above for construction. In addition, local reuse or recycling of infrastructure may provide community and economic benefit.

As well as impacting on the local community's cost of living, limited housing and accommodation can be a critical barrier to delivering the REZs on time and within budget (OECC, 2022b). These issues are well recognised by local and state government. In particular, the Central West- Orana Regional Plan has a strong focus on the current context of housing and accommodation shortages. There is also a Regional Housing Taskforce which is coordinating regional housing policy and action. There is common understanding of the need to ensure adequate accommodation is available to residents and non-resident workers, while also supporting the tourism industry (DPHI2022a).

5.1.3 Environmental and Cultural Heritage Values

This section provides an assessment of potential Project benefits and impacts on the social impact theme – environmental and cultural values. Project derived impacts on environmental and cultural values include:

- perceived increased fire safety risk from the Project's batteries
- potential impacts to unknown items or sites of Aboriginal cultural significance.

5.1.3.1 Battery Fire Safety Risks

The Project infrastructure will include the installation of battery energy storage systems. A Preliminary Hazards Analysis was undertaken to inform risks and project phase mitigations due to these aspects.

A multi-level risk assessment approach was used to determine the assessment level required. A Level 1 qualitative risk assessment is appropriate due to there being no expected major off-site consequences and hence, negligible societal risk resulting from the BSF development. The methodology used to conduct the PHA for BSF is a hazard identification followed by consequence analysis and subsequent reporting. The qualitative analysis determined that a battery fire has the potential to lead to non-major off-site consequences As such, that scenario was carried forward for consequence analysis. BESS fire modelling was performed for two indicative types of modular BESS units.

The modelling results will be used as a guide for ongoing project development. As the models assume a conservative worst-case scenario, it is expected that the ultimate technology selection will provide further detail that can be used as the basis to reduce the recommended spacing requirements. Notwithstanding the modelling results, a 20 m setback distance from the outermost battery units to the site boundary is recommended to mitigate the risk of external fire events impacting the BESS installation and the risk of a fire incident at the BESS propagating off site.

5.1.3.2 Potential Impacts to Aboriginal Cultural Heritage

Impacts experienced by Aboriginal stakeholders could include disturbances to culturally important places, sites, or artefacts. Aboriginal people often experience grief and loss due to the loss of cultural artefacts or sites. The traditional custodian of the land and water that comprise Narromine LGA are the Wiradjuri People.

The Aboriginal Cultural Heritage Assessment Report (ACHAR) undertaken for the EIS (OzArk Environment and Heritage, 2023) identified Aboriginal sites or places near or within the Project construction envelope and assessed their cultural significance. The Project can avoid impact to 10 of the 15 Aboriginal sites identified during the survey and 10 sites will be conserved within the landscape. Five sites cannot be avoided by the proposal and it is recommended that these sites be salvaged through a collection of surface artefacts before Project works commence. The methodology for the salvage is presented in the ACHAR and will be incorporated into an Aboriginal Cultural Heritage Management Plan (ACHMP) that will be developed and approved prior to works commencing. The potentially impacted sites are a low-density artefact scatter consisting of two artefacts and four isolated finds.

5.1.4 Cumulative Impacts

This section provides consideration of the Project's potential to generate cumulative social impacts. Simultaneous development or decommissioning of multiple projects in a geographic area can exacerbate the social and economic impacts and benefits associated with a single project, as well as stimulate additional unique impacts.

The energy transition towards renewables is being driven by the retirement of ageing coal-fired power stations, the relatively low costs of wind and solar as replacement technologies, as well as legislation, policies and plans being implemented by the Australian Government and states targeting a net zero emissions future. The last five years has also seen the proliferation of renewable projects across much of NSW. These include solar and wind energy projects, large scale battery and pumped hydro projects. The NSW Government's Electricity Infrastructure Roadmap has identified the Orana-West Renewable Energy Zone (REZ) as a hub for investment in renewable projects.

The EIS (Section 7.13) includes an assessment of cumulative impacts of future projects for the Project, focusing on key matters that could be materially affected. The Project is located within the Narromine Shire LGA. The cumulative impact assessment has considered other future projects (on the DPE Major Projects Planning Portal) that have the potential to interact with the Project. Projects within 50km of the Project have been included in this assessment. There are eight state significant projects, all SSD, recently approved or proposed in the local area identified through DPHI's Major Projects Planning Portal. A radius of approximately 50 km from the project has been used to identify future projects of relevance. These have been identified as projects for consideration of cumulative impacts. Of the eight SSD projects within 50 km of the project:

- The Narromine BESS is a separate Edify Energy project,
- Three are within the Narromine Shire Council LGA,
- Four are energy related SSDs,
- Four are non-energy related SSDs of which three are modifications to operational projects (South Keswick Quarry, Dubbo Project and Dubbo Quarry).

The greatest potential for cumulative impacts of future projects and the project are related to (Table 5-1):

- Heavy vehicle access routes through Dubbo and Narromine during construction of the Project in relation to the operation of the Dubbo Quarry, South Keswick Quarry and the Dubbo Project.
- construction of the Inland Rail and Wallaby Creek Wind Farm which has the potential for the construction period to overlap with the project and have substantial workforce requirements that may draw construction workers from the same region.

The estimated timing of projects is based on the best information available but is subject to change as some projects have not yet gained regulatory approval and others require internal stakeholder approval and access to finance. These factors may affect whether projects proceed to development, and subsequent timelines for construction and operation. Where projects are currently under construction, environmental and process factors can cause uncertainty regarding the completion date.

Table 5-1: Cumulative Impact Assessment of Projects within 50km of the Burroway SF

Project Name and Development	Distance to Project	Status	Potential Cumulative Impacts with Project
Inland Rail- Narromine to Narrabri	Adjacent Eumungerie Road	• Determination February 2023. • Site investigations occurring throughout 2024. • Construction, including early works investigations, expected to take 4 years with a 2000-person workforce. Will be split into 4 construction areas, with 500 people in each area.	The Project involves the construction of a new ~300km inland railway line from Narromine to Narrabri. The Narromine section makes up 1 of the 4 construction areas which may potentially interact with the Burroway SF during construction: • Two temporary workforce accommodation locations are proposed to host a combined capacity of approximately 500 people within the Narromine work area. • Inland Rail have proposed haul roads and other ancillary activities (stockpile/ compound) within the rail footprint to minimize use and impacts on the public road network and land. Transport of workforce to site is proposed in buses from the temporary accommodations to limit traffic movements. • Construction noise impacts to sensitive receptors are expected in the Narromine works area, with out-of-hours works also expected in this area. No cumulative impacts are expected during operation of the solar farm.
Narromine BESS	~20km	• Prepare EIS Stage. • Construction anticipated to commence 2026/27 FY. • Operational for 20-25 years or more.	This Project is the construction and operation of a 125MW/250MWh BESS in Narromine. • Construction is anticipated to occur concurrently with Burroway SF and utilize same working force and accommodation resources. No cumulative impacts are expected during operation of the solar farm.
Forest Glen Solar Farm	~25km	• Determination February 2023. • Construction 12-18 months, 150-200 staff in peak construction (3 months). • 35-year operational life.	The Project is a solar farm with 90MW AC capacity and a 25MW/50MWh BESS. • The Project has been approved with initially construction timing set for 2022/23. • The Project site is ~7km from Dubbo and is has a preferred haulage route from Botany Bay with minor use of the Mitchell Highway east of Dubbo. No cumulative impacts are expected during operation of the solar farm.

Project Name and Development	Distance to Project	Status	Potential Cumulative Impacts with Project
Dubbo Firming Power Station	~30km	• Project is within the EIS assessment phase. • The Project anticipates operation in Q4 of 2025 following a 12-month construction (peak period of 6 months). • Peak construction will require 130 persons. Operation will require 5-6 persons. • Project will be operational for 40 years.	The Project involves a 60MW gas fired power station, a 20MW hydrogen electrolyser and gas pipelines. • The Project is approximately 4km North of Dubbo. There is no potential for cumulative impacts related to construction as the power station should be fully operational before construction of the project commences (2026/27).
Wallaby Creek Wind Farm	~35km	• Prepare EIS, assessing as a bilateral agreement (SEARs issued August 2023). • Construction is expected to take 1-2 years and require 150 staff. • Operation life of 30 years.	The Project is a 250MW wind farm with 44 turbines, a 100MW/200MWh BESS and associated infrastructure located ~10km South of Narromine. • Potential transport routes for large components from Port Kembla or Port of Newcastle. • Potential conflict with project for workforce and accommodation resources. No cumulative impacts are expected during operation of the solar farm.
Dubbo Quarry Continuation	~40km	• Operational. Expansion mod determination March 2023. • Extension of the project life by up to 25 years.	The proposal involves the expansion of an existing hard rock quarry into two new resource areas. • The Project is ~2-3km southeast of Dubbo. • No additional workforce is required. • No change or addition of fixed infrastructure. • No change to access points and transport routes. • Some heavy vehicles accessing the site over 2 months for construction of an internal road. This existing project is spatially distant from the project and is already factored into the baseline condition of the region. No cumulative impacts during construction and operation are expected due to the negligible change in traffic and socio-economic factors.

Project Name and Development	Distance to Project	Status	Potential Cumulative Impacts with Project
South Keswick Quarry	~45km	• Operational. Production increase mod is preparing EIS. • Continued operation for a further 30 years.	This Project involves the expansion of an existing quarry from 495,00 to 750,00 tones per annum, with changes to the extraction area. • The Project is ~2-3km southeast of Dubbo. • The expansion may increase traffic volumes. • An additional 12 operational personnel may be required. This existing project is spatially distant from the project and is already factored into the baseline condition of the region. No cumulative impacts during construction and operation are expected due to the negligible change in traffic and socio-economic factors.
Dubbo Project	~50km	• Operational. Mod to change mine layout determination March 2023. • Construction expected over 2 years. • Additional 8 years for Project life (2045).	This project involves changes to the mine layout, infrastructure and reagent transportation. • The Project is ~13km south of Dubbo. • An additional 225 persons will be required throughout construction and 24 for operation. • Construction is expected to be completed prior to Burroway SF construction (2026/27). This existing project is spatially distant from the project and is already factored into the baseline condition of the region. No cumulative impacts during construction and operation are expected due to the negligible change in traffic and socio-economic factors.

5.1.4.1 Biodiversity

The impacts of this proposal are, by themselves, very small; however, considering the scarcity of native cover within the local landscape (c. 9% of the study area retains native vegetation) and the marked historical reduction in extent of PCT 55 (estimated at 83%), these impacts are not inconsequential. Considered individually, this proposal is highly unlikely to result in significant adverse impacts to biodiversity at either local or state level. Taken cumulatively, however, the impacts of this and other local development activities contribute to the ongoing decline in biodiversity values across the state.

Other Projects within 50km of the Burroway SF Project will be following the same avoid, minimise and offset process during the EIS to ensure biodiversity impacts are lessened to the greatest extent possible.

5.1.4.2 Land Use

Cumulative local land use impacts for the Burroway locality are not expected as the Inland rail is linear infrastructure predominantly abutting existing linear infrastructure (road) in the locality of the Project, and the Burroway SF will be returned to the pre-existing land use (agricultural) on decommissioning.

The risk of cumulative land use impacts is considered negligible, as the project will only result in a temporary loss of land, that is locally common in nature, during the period of project operations. This temporary loss will be minimised if, as is likely, the site accommodates a co-use agricultural activity (sheep grazing) during operations. Other Projects within 50km of the Project site are also energy-related SSD's and as such the expectation is that the land, they are on will be returned to its pre-existing use on decommissioning.

5.1.4.3 Traffic and Transport

The cumulative impact assessment undertaken as part of the TIA indicates that a number of projects are expected to generate additional vehicle movements within Dubbo and Narromine. These vehicle movements would be distributed on the surrounding road network and are expected to have a minimal cumulative impact on the operation of the road network. Construction of these SSD projects will have cumulative positive benefits to the community in facilitating improvements to the operation and safety of the local road network as a result of the road and intersection upgrade works committed by each of the projects. Commissioning and operation of the solar farm will result in negligible traffic volumes, which will not result in cumulative impacts.

Inland Rail

There are some potential cumulative impacts if peak construction periods and delivery of major equipment for Burroway SF and the Inland Rail overlap, as access to the Narromine works area will conflict with the Project through use of the Mitchell Highway and Eumungerie Road. Preliminary accesses and the construction of the haul road proposed for Inland Rail is expected to lessen this impact. The section of Eumungerie Road that is adjacent to Burroway SF is not currently proposed for any accesses into the rail corridor for construction which will reduce conflict with accessing the Burroway site. Workforce transport will be from two main locations in Narromine to the Narromine work areas, however it will be facilitated through a vehicle pooling or busses, allowing for less vehicle movements. Burroway SF also proposes this method which will lessen the cumulative traffic volumes if the construction periods overlap.

Forest Glen Solar Farm

There is some potential for cumulative impacts related to construction if there is an overlap of solar farm construction with the Burroway SF construction period. The potential overlap period may be up to 3 months (peak construction and delivery period for Forest Glen) however it will only involve minor interaction of heavy and OSOM vehicle movements associated with the delivery of equipment and infrastructure on a small section of Mitchell Highway.

Wallaby Creek Wind Farm

There is some potential for cumulative impacts related to construction if there is an overlap of wind farm construction with the Burroway SF construction period. The potential overlap period may be up to 6 months (peak construction and delivery period for Burroway) however it will only involve potential interaction of heavy and OSOM vehicle movements associated with the delivery of equipment and infrastructure on the Port of Newcastle route. The Wallaby Creek Wind Farm has three potential routes associated with the Port of Newcastle option and as such potential cumulative impacts would only be possible if the construction and delivery periods align and selection of the exact same transport route is selected for both Projects.

5.1.4.4 Noise and Vibration

There is some potential for cumulative noise impacts during construction however there is uncertainty on the peak construction periods and timing of main noise-generating works for Inland Rail. Worst-case construction noise scenarios were run, for which Burroway Project is still expected to comply with Noise Management Level's for sensitive receptors. Both projects' closest receptors are R1 and R2 on the western side for this locality, which are more than 1.7km away from both Project footprints.

Cumulative out-of-hours work noise is not anticipated as Burroway SF does not expect any out-of-hours works.

Any cumulative noise and vibration impacts with other Projects within 50km would be limited to the construction phase of the project (for Inland Rail only) and are anticipated to be negligible during operation due to the distances between the project's.

5.1.4.5 Workforce and Resources

The employment demands for the future projects may cause potential impacts on the availability of skilled workforce in the local area, should construction periods overlap substantially. This may require additional workers to be sourced from outside the local and regional areas. The potential of a non-resident and relocating workforce to service the concurrent developments may contribute to the cumulative impacts in the local area. This may result in impacts on the capacity and availability of local service providers, accommodation providers and increased traffic. However, potential cumulative benefits may also be associated with the high number of SSD projects in the local area, such as increased employment and economic opportunities for local businesses and suppliers. Any impacts with other Projects within 50km would be limited during operation due to the low number of operational staff, the preferred sourcing of locals living within the region and the optionality of various towns for housing needs.

Inland Rail

There is no cumulative accommodation pressure expected on the Narromine region as the Inland Rail is likely to host all workforce in temporary accommodations.

Forest Glen Solar Farm

There is some potential for minor cumulative impacts related to construction workforce and accommodation resourcing if there is an overlap of the construction periods. The Forest Glen SF construction workforce is approximately 200 people, with Burroway SF requiring approximately 250 persons during peak periods. The peak construction for Forest Glen is over 3 months, with Burroway experiencing its peak period over 6 months.

Wallaby Creek Wind Farm

There is some potential for minor cumulative impacts related to construction workforce and accommodation resourcing if there is an overlap of the construction periods. The Wallaby Creek Wind Farm construction workforce may be approximately 150 people, with peak workforce requirements unknown, however the Burroway SF will require approximately 250 persons during the 6-month peak period only.

6 MITIGATIONS AND MANAGEMENT

This section provides a summary of the identified social impacts. A range of proposed social impact mitigation and management strategies have been proposed (Table 6-1). Not all of the potential impacts will be the responsibility of the proponent to mitigate or manage, their role may be to cooperate or inform the mitigation, provide data and information, through to direct responsibility for mitigation and management of the identified potential social impacts and the opportunity for partnerships.

Table 6-1: Social Impact Proposed Mitigations and Management

Social Theme	Matter	Proposed Mitigation and Management
Project Locality and Activities	Changes to the visual character impacting amenity	Views and the scenic quality of the surrounding agricultural landscape are typically highly valued. Assessment found construction impacts are temporary in nature and can be managed through standard procedures. The assessment found residences will not have any views of the site. Whilst the assessment found that the visual impact was low, surrounding residents may wish to apply mitigations such as screening tailored to their individual property
	Perceived reduction in agricultural productivity	The Project proponent may investigate the opportunity to implement Agri-solar. Research demonstrates the productivity benefits of sheep on solar farms. The Project land will be returned to the original agricultural use on decommissioning.
	Increased traffic congestion and commute times during construction	There is an opportunity for minibuses to be utilised to transport Project construction workers to and from the Project site daily. This would also decrease worker fatigue. Encouraging carpooling is also an option to decrease the amount of traffic on local roads. Generally it was found the Project construction volumes would not adversely impact on the proposed transport route.
Local employment and procurement	Reduced availability of rental housing and short-term accommodation for residents	Maximise recruitment of local residents for the construction workforce where possible. Innovative housing solutions such as refurbishment of existing unoccupied dwellings in exchange for rent could reduce the demand for short-term accommodation. Encourage non-local workers to be accommodated in surrounding towns to further reduce the impact on Narromine. Development of Accommodation Strategy in consultation with Narromine Shire Council during pre-construction.
	Reduced access to services for residents due to increased competition for social services	Engagement with the Narromine Shire Council to identify potential service limitations and implement measures such as provision of on-site first aid facilities to reduce competition for the GP services most proximal to the site.
Environmental and cultural heritage	Perceived increased fire safety risk associated with the Project wiring and batteries	Implement design mitigation measures from PHA such as setback distances from lot boundary. Implement mitigation and management measures recommended in the Bushfire Impact Assessment such as provision of water tanks on site and routine maintenance of Asset Protection Zones to reduce fuel load. Further, allowing sheep on solar farm land can also reduce fire risk by keeping the surrounding pasture down.

Social Theme	Matter	Proposed Mitigation and Management
	Potential for impacts to unknown items or sites of Aboriginal cultural significance	The effective implementation of the proposed Aboriginal Cultural Heritage Management Plan (ACHMP), as outlined in the ACHAR, is key to effective mitigation of the disturbance to culturally important places, sites, or artefacts.
Cumulative	Cumulative impacts with other projects within 50km of Burroway SF	Implementation of a construction traffic management plan which will incorporate adaptive management measures to ensure that potential cumulative impacts can be effectively managed and minimised as far as practical. Vehicle pooling or busses to produce less vehicle movements. Development of Accommodation strategy in consultation with Narromine Shire Council and potential other developers to consolidate project resourcing requirements.

A summary of benefits is provided in Table 6-2.

Table 6-2: Social Benefits of Project

Social Theme	Matter	Benefits
Local employment and procurement	Local employment and training	Procurement opportunities from the construction phase of the Project may benefit local and regional businesses. The Project will procure various goods and non-goods to construct the Project. The flow on effects of the construction phase will likely include demand for accommodation and food services, transport, postal and warehousing, rental, hiring and real estate services, and administrative and support services.
	Local procurement opportunities	A local procurement strategy will ensure early and regular engagement with local businesses and the Narromine Shire Council to establish relationships with the Project. Local businesses are often smaller and require more lead time to prepare for tenders and to potentially recruit people for their business. Encourage the Project workforce, particularly during the construction phase, to support and contribute to the local and regional community through local spending.

6.1 MONITORING AND MANAGEMENT

A monitoring and management framework is to be implemented to track and measure the effectiveness or otherwise of proposed management measures. In accordance with the intent of adaptive management of social impacts, changing socio-economic characteristics and trends in the Narromine LGA also need to be considered. The proposed monitoring and management framework encompasses the following elements:

- track the implementation of mitigation and management strategies
- assess actual project impacts against predicted impacts
- identify how information will be captured for reporting to impacted stakeholders including landholders, communities and government on progress and achievements
- key performance indicators, targets and outcomes
- responsible parties
- mechanisms for ongoing adaption of management measures when and if required.

To ensure the effectiveness of the management measures for the identified positive and negative impacts, the Community Consultation and Engagement Plan has been developed by the proponent and appended to the EIS.

7 REFERENCES

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Kleinfelder 2024 Environmental Impact Statement for Burroway Solar Farm, prepared for Edify Energy. Including appended assessments:

- 2023 Aboriginal Cultural Heritage Assessment Report
- 2023 Landscape Character and Visual Impact Assessment
- 2023 Preliminary Hazards Analysis
- 2023 Biodiversity Development Assessment Report
- 2023 Preliminary Hazards Analysis
- 2023 Soil and Agricultural Impact Assessment

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APPENDIX A SUITABLY QUALIFIED CV

Greg Lutton

With over 30 years' experience in environmental consulting, Greg has had responsibility for delivering environmental services, assessments and advice across a range of disciplines including environmental management and environmental and social impact assessment, contaminated land and sustainability on projects in Australia and the UK.

Greg has an excellent knowledge base of the issues surrounding environmental and regulatory constraints, social impact and associated sustainable infrastructure provision. Relevant experience includes the management of civil engineering and contaminated site assessment and remediation projects at all stages from planning through to implementation, the production of environmental policy and operational guidance for government bodies, environmental and social impact assessment, the development and implementation of environmental reporting procedures on a number of major infrastructure projects, and the assessment of environmental performance.

Education

Post Graduate Certificate in Engineering Management, Engineering Management Partnership, 2003, UK

BEng (Hons) Civil and Environmental Engineering, University of Newcastle upon Tyne, UK 1990

Training & Certifications

Member of the Environmental Institute of Australia and New Zealand (MEIANZ)

Planning Institute of Australia Affiliate (PIA (Assoc))

Member of the Institution of Civil Engineers (MICE)

Chartered Engineer (CEng)

Infrastructure Sustainability Accredited Professional (ISAP)

CEEQUAL Assessor

Radiation Protection Supervisor

Lead Auditor Environmental Management Systems ISO 19011:2018 & 14001:2015 (Exemplar Global # EGAUCA/4066/20)

Relevant Experience

The following is a selection of Greg's relevant project experience:

Port Playford Export Facility – Port Augusta Operations

Greg is leading the approvals and consents process for the development and operation of a new iron ore transhipping export facility at the site of the former Northern Power Stations near Port Augusta. The site is adjacent to state coastal waters within the Upper Spencer Gulf Marine Park (and North Spencer Gulf Bioregion).

Having obtained Crown Development sponsorship from the Department for Energy and Mining, the key aspects investigated for the project Development Assessment included socio-economic, air quality, noise and vibration, flora and fauna (terrestrial and marine), traffic, Aboriginal heritage, coastal processes, site contamination surface water and waste. Social impacts and stakeholder consultation were of key importance as the local community had been highly sensitised to site activities, following a serious uncontrolled release of dust when the site was under the control of the former owners. As the in-channel works are in State-controlled waters and constitute a "future act", negotiations with the Traditional Owners are ongoing. Planning consent, under S131 of the Planning Development and Infrastructure (PDI) Act was obtained from the Planning Minister in January 2021. Additional operational approvals, including EPA licences, are being sought, and the development of the Port Operating Agreement is currently in progress.

Walkergate Technology College and Sir Charles Parsons School at Waverdale EIA – AURA LEP, UK

Responsible for production of an Environmental Impact Assessment (EIA) relating to a new dual-school facility to be provided in Newcastle upon Tyne as part of Newcastle Schools Building Schools for the Future (BSF) programme. The contaminated site also had a range of historic social uses with the context of a deprived urban neighbourhood and a Social Impact Assessment (SIA) was prepared to ensure stakeholder management was sensitive to local concerns throughout.

A189 Moor Farm Upgrade, Highways Agency, Northumberland UK:

Supervised production of Environmental Assessment for a range of options for the Highways Agency's proposed upgrade to a key route interchange in Northumberland, UK. As part of the Highways Agency assessment guidelines, as Social Impact Assessment was prepared, with particular attention paid to impacts related to physical separation, air quality and noise, together with improved safety and economic benefits.

DIT – Rural Road Upgrades – Various EHIAs

Over the past two years, Greg has acted as project director for the production of three Environment and Heritage Impact Assessments (EHIAs) for DIT in support of works relating to its Rural Road Safety Upgrade Programme. The Commonwealth funding supporting these upgrades has been allocated on a "use it or lose it" basis, so a rapid turnaround of the EHIARs has been required to allow early commencement of site activities and meet the client's challenging timeframes. In excess of 200 individual proposed work sites have been assessed, with a total chainage of over 120 km. EHIAs have been produced to comply with DIT templates, and have combined desk-top study with field survey in areas including flora, fauna, Aboriginal and non-Aboriginal heritage, Native Title, air quality, water quality, noise and vibration, social impacts and land use, planning and zoning. For all sites, the EHIARs have included vegetation surveys and clearance reports, completed in accordance with Native Vegetation Council requirements and DIT's internal requirements.

Trincomalee Wharf, Hartlepool EIA. Jomast Developments:

Production of EIA for a high-specification mixed residential, hotel and retail development adjacent to Hartlepool's historic quay. Trincomalee Wharf will be a major mixed-use redevelopment. Key EIA issues related to contaminated soil and reptile disturbance, with the Social Impact Assessment focusing on the likely increase of tourist visitors to the area, particularly in the evenings, and the impacts on access to the Waterfront.

Murray St., Gawler EIA- Town of Gawler, SA

Greg prepared an Environmental Impact Assessment report (EIA) as part of Development Approval submission for a project to upgrade a section of highway in Gawler town centre. Key issues included the proposed works to the Gawler Mill Bridge over the South Para River, the ecological communities adjacent to the river, the potential for historic contamination, the proximity of sensitive land uses to the construction area and the impacts on local businesses of the amended road layout. A draft CEMP was also developed to inform the tendering process for the construction works.

London 2012 Whitewater Canoe Centre (LWWCC). Olympic Delivery Authority (ODA).

Led on environmental management and sustainability issues for the design team on the new Whitewater Canoe Centre at Broxbourne, UK. A Socio-Economic Impact Assessment was prepared which included; quantification of potential economic and social impact of the LWWCC on the region over a five year period, identification of interventions that would maximise local economic and social benefits of new development; and any improvements to local infrastructure required to support new leisure development around the LVWWC, including both physical infrastructure and social-infrastructure (e.g. employment training etc).

Review of Major Development Guidelines - Department of Planning, Transport and Infrastructure, SA

Greg led a review of the Major Development (S46) guidelines and impact assessment processes for the SA Planning Department. The project included an evaluation of the current legislation, practice and approach, to help develop guidelines that were focused, risk-based and pragmatic in the context of either an EIS, PER or DR. Outputs included a risk assessment matrix to determine level of assessment, an update to the Guide for Proponents, and wording for the re-drafting of Regulation 63 of the Development Act.