Prepared for Samsung C&T Renewable Energy Australia (SREA) Pty Ltd

Scoping Report

Mangoplah BESS

Wagga Wagga LGA, Mangoplah, NSW

October 2024

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We acknowledge the traditional owners of this land and pay our respect to Elders past, present and emerging. We recognise that the First Nations peoples of Australia have traditionally managed the resources of this land in a sustainable way, and that they are the original stewards of the Australian environment.

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Acronyms and Abbreviations

Acronyms	Definition
ACHA	Aboriginal Cultural Heritage Assessment
AHD	Australian Heritage Database
AHIMS	Aboriginal Heritage Information Management System
APZ	Asset Protection Zone
ASL	Above Sea Level
BCD	Biodiversity Conservation Division
BDAR	Biodiversity Development Assessment Report
BAM	Biodiversity Assessment Methodology
BESS	Battery Energy Storage System
BOS	Biodiversity Offset Scheme
BSAL	Biophysical Strategic Agricultural Land
CBS	Community Benefit Scheme
CEMP	Construction environmental management plan
Cth	Commonwealth
CSP	Community Strategic Plan
DA	Development Application
DPE	Department of Planning and Environment (NSW) (now DPHI)
DPHI	Department of Planning, Housing and Infrastructure (NSW)
EDC	Estimated development cost
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
FTE	Full-time equivalent
GHG	Green House Gas
ha	hectares
Heritage Act	*Heritage Act 1977* (NSW)
IPC	Independent Planning Commission
ISP	Integrated System Plan
km	kilometres

LEP	Local Environment Plan
LGA	Local Government Area
LSC	Land and Soil Capability
m	metres
MNES	Matters of National environmental significance under the EPBC Act (*c.f.*)
MW	Megawatt
NEM	National Energy Market
NPW Act	*National Parks and Wildlife Act 1974* (NSW)
NSW	New South Wales
PCT	Plant Community Type
PHA	Preliminary Hazards Assessment
RET	Renewable Energy Target
REZ	Renewable Energy Zone
SEPP	State Environmental Planning Policy (NSW)
SHI	State Heritage Inventory
SIA	Social Impact Assessment
SREA	Samsung C&T Renewable Energy Australia Pty Ltd
SSD	State Significant Development
TISEPP	State Environmental Planning Policy (Transport and Infrastructure) 2021 (NSW)
VIA	Visual Impact Assessment
VPA	Voluntary Planning Agreement
WWCC	Wagga Wagga City Council

Key terms in this report

Term	Description
Mangoplah Battery Energy Storage System	The development, construction, operation and decommissioning of an up to 100 MW / 400 MWh (4hr) Battery Energy Storage System (BESS), generally comprising of battery storage units, transformers, access roads, underground and above ground cables, on-site substation and associated operational facilities.
The Project	Mangoplah Battery Energy Storage System
The Applicant	Samsung C&T Renewable Energy Australia Pty Ltd (SREA)
Involved Lands	All lots and easements that are intersected by the Project Site (listed in Section 1.1)
Subject Lot	The lot of the associated receiver who would host the battery. This lot is Lot 222 DP754557
Project Site	The area of land that is being investigated for siting of the Project. It is a smaller representation of the Involved Land to exclude areas not subject to proposed development but may not be included in the final Development Footprint (see below).
Development Footprint	For this Scoping Report, the Development Footprint is not yet defined. The Development Footprint would be a representation of the maximum impact area of the Project Site. The Development Footprint would be defined during the Environmental Impact Statement phase as further detailed study into environmental impacts are undertaken.
Indicative Layout	The Indicative Layout refers to the current concept layout of the Project that is presented in the Project Description (refer to Section 3). This definition is indicative as further assessment in the Environmental Impact Statement may lead to layout changes.
Associated receiver	A receiver on privately-owned land in respect of which the owner has reached an agreement with the Applicant in relation to the development and management of impacts. They are considered 'Project associated'.
Non-associated receiver	A residence on privately-owned land in respect of which the owner has not reached an agreement with the applicant in relation to the development. or A residence on privately-owned land in respect of which the owner has reached an agreement with the applicant in relation to the development, but the agreement does not cover the relevant impact or the performance measure for such impact under that agreement has been

Term	Description
	exceeded. Non-associated receivers are fully assessed for all environmental impacts, such as noise, vibration and visual impacts.

1. Introduction

1.1. Project overview

Samsung C&T Renewable Energy Australia Pty Ltd (The Applicant) is proposing the development of the Mangoplah Battery Energy Storage System (the Project). The Project would involve the construction, operation and decommissioning of a Battery Energy Storage System (BESS) with a capacity of up to approximately 100 Megawatts (MW) / 400MWh (4 hours).

The Project would be located within the Wagga Wagga Local Government Area (LGA), approximately 3.1 kilometres (km) east of the township of Mangoplah, and approximately 30.6 km south of the regional city of Wagga Wagga, New South Wales (NSW). The site address is **4178 Holbrook Road, Mangoplah NSW 2652.**

Other nearby towns include The Rock, located 17.8km northwest, Big Springs 13.1km northeast and Westby 15.4km southeast. The location of the Project is shown in Figure 1-1.

Lots and easements that are intersected by the Project (Involved Lands) and the area of land that is being investigated for siting the Project (the Project Site) are detailed in Table 1-1. The Project Site covers an area of approximately 13.1 hectares (ha).

Table 1-1 Lots and easements intersected by the Project

Owner	Proposed usage for the Project	Lot	Deposited Plan (DP) / easement	Area within the Involved Lands
Involved landowner	Siting of the BESS and grid connection point (termed the Project Site)	222	DP754557	10.4ha
Involved landowner	Site access from private road off Holbrook Road	225 228	DP754557 DP754557	2.7ha
TOTAL				13.1ha

Holbrook Road
Mangoplah
Creasys Road
Lot 222
DP754557
Mcraes Road
Burrandana Road
Lot 225
DP754557
Henty Road
Holbrook Road
PAPER FOREST CREEK
Lot 228
DP754557
Zadows Road

LEGEND

- Project Site
- Involved Lands
- Site access

Local features

- 132kV Transmission Line
- Town
- Road
- Waterways

Datum: GDA2020 / MGA Zone 55

0 0.5 1 km

Mangoplah BESS

Figure 1-1 Locality

1.2. Project objectives

The Project objectives centre on the construction of a viable and appropriate energy storage facility that will provide a meaningful contribution to the state's transition to renewable energy. Additional storage provided by the Project will better integrate the contribution of renewables and should act to stabilise the grid and drive prices down.

Energy storage technologies can unlock electricity generation growth in areas experiencing network constraints. They will also support on-demand energy needs as the network transitions to more renewable sources of energy.

The development of energy storage facilities projects aligns with both the NSW governments identification that batteries can (NSW Govenment, 2013):

> *'… increase the value of renewable energy to individuals, network operators and investors. Storage allows renewable energy investors to increase revenue by selling power at times of peak market prices as opposed to when the electricity is generated. This in turn places downward pressure on electricity prices by encouraging more supply at times of peak demand and reducing the need for additional distribution and transmission infrastructure*.'

As well as these broader benefits, to ensure the Project is appropriate to its context, the objectives of the Project are to:

- Assist Australia's energy transition from fossil fuels to renewable energy and contribute to achieving net-zero emissions by 2050.
- Provide system strength services to the transmission (and distribution) networks in the area and therefore, provide security of supply and safeguard the energy network.
- Increased economic activity locally and more broadly though grid investment.
- Delivering direct employment and labour opportunities
- Avoid minimise, and mitigate adverse impacts on the environment and community during construction and operation
- Establish a strong network of positive relationships within the local community
- Make efficient use of existing electrical infrastructure, notably the existing 132kV transmission line that intersects the Project Site to minimise the need for additional easements.

1.3. Subdivision

The Applicant would lease part of Lot 222 DP754557 from the primary associated landholder for the operation of the Project. Electrical substations are treated as premises rather than fixtures due to the substantial and permanent nature of their construction. The need for subdivision, particularly in relation to the onsite substation would be confirmed and detailed in the EIS following further engagement with TransGrid, the Applicant and the landowner.

1.4. The Applicant

The Project is being developed by Samsung C&T Renewable Energy Australia Pty Ltd (The Applicant) (refer to Table 1-2).

Samsung C&T Renewable Energy Australia Pty Ltd (SREA) began operations in Australia in 2022 and has solar and storage project interests across New South Wales, Victoria, and Queensland. SREA currently operates out of offices in Sydney and Brisbane, with personnel working remotely in Victoria.

To meet the needs of clients aiming to diversify their energy mix amid stringent carbon emissions requirements, SREA strives to become a full-spectrum energy provider in the clean energy sector. The company is committed to deploying sustainable energy resources with a vision to create value globally.

Over the past two decades, Samsung has completed several renewable projects worldwide, including the world's largest wind and solar power cluster in Ontario, continuously delivering solutions that enable customers to fully leverage renewable resources.

Table 1-2 Applicant details

Condition	Detail
The Applicant	Samsung C&T Renewable Energy Australia Pty Ltd
ABN	74 661 046 331
Office Address	Suite 8.04, Level 8, 227 Elizabeth Street Sydney NSW 2000

1.5. Related development

There is no additional development related to the Project.

All works associated with construction and operation of the BESS, including connection works to the transmission line, will be assessed under this Development Application (DA).

1.6. Project background

SREA has been investigating the potential to develop a renewable energy project in the area since 2023. Specific consideration was given to grid connectivity and capacity, commercial viability, statutory legislation and environmental and planning constraints.

Ongoing refinement of the Project with consideration of the above will continue through the development of the EIS. At this stage of the Project, the environmental scoping assessment (Section 6) has identified minimal notable issues requiring avoidance or risk minimisation/offsetting. Some standard mitigations have been noted such as a minimum 10m Asset Protection Zone (APZ) for bushfire management and the general requirement that the Project would undertake a Biodiversity Development Assessment Report (BDAR) that would determine offsetting requirements.

1.7. Purpose of the document

This Scoping Report has been prepared to support the lodgement of a DA to the Department of Planning, Housing and Infrastructure (DPHI). An EIS is required to support the DA under Section 4.12(8) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). An EIS is required, as the Project has an estimated development cost (EDC) exceeding $30 million and is therefore classed as State Significant Development (SSD).

This Scoping Report provides a high-level description of the Project, including its strategic context, statutory context, and identifies key environmental issues relevant to the Project and proposed investigation strategies for them. The format and content within this scoping report is guided by the:

- *State significant development guidelines – preparing a scoping report* (DPE, 2022)
- *Undertaking engagement guidelines for state significant projects* (DPHI, 2024)
- *Social impact assessment guideline for state significant projects* (DPIE, 2023)
- *Cumulative impact assessment guidelines for state significant projects* (DPIE, 2022)

A detailed breakdown of the requirements from all the guidelines State significant development guidelines – preparing a scoping report are included in Appendix B.

2. Strategic context

Context important to the development of this Project includes:

- Regional and local setting, zoning and key environmental features
- Strategic need for energy storage in NSW

Together, these support the justification for the Project as set out below.

2.1. Regional setting

The Project is located on the outskirts of the suburb of Mangoplah within the Wagga Wagga LGA. The LGA is situated within the Riverina Murray Region of NSW, with a population of 67,609 people as per the 2021 Census (Australian Bureau of Statistics, 2021).

The Wagga Wagga LGA and surrounds have been identified as a "Candidate Renewable Energy Zone (REZ)" since 2018, within the relevant Integrated System Plans (refer to Figure 2-2). Candidate REZs such as the Wagga Wagga REZ may account for 11% of the total projected utility-scale variable renewable energy developments in New South Wales (AEMO, Integrated System Plan 2024, 2024).

Most of the population in the LGA is centralised around Wagga Wagga, located approximately 30km south of the Project Site. Wagga Wagga has a number of facilities including Wagga Wagga Base Hospital, banks, retail outlets, grocery stores, public and private schools, accommodation facilities including motels, caravan parks and short-term rentals.

Mangoplah itself has a population of 307 people as per the 2021 Census (Australian Bureau of Statistics, 2021). Mangoplah has a small pub, hall, two churches, a recreational reserve, a football and netball club, and general store and a rural produce distributor. The football and netball club (the MCUE Goannas) have a strong presence within the community, having been established as early as 1913.

Figure 2-1 Mangoplah hotel (source WikiPubs)

The Involved Lands are characterised as gently undulating landforms with open cropping and grazing areas. Remnant vegetation is found along creek lines, including Burkes Creek to the north. In addition, there is one first order stream that runs to the west of the Project Site, however will not be impacted by the proposed development.

Livingstone National Park is located 2.5km northeast of the Project Site. There are no state listed heritage items in proximity to the Project Site. The historic Scots Uniting Church is listed as a local heritage item and is located 4.1km west of the Project Site, within the town of Mangoplah.

LEGEND

- Project Site
- Involved Lands
- Site Access

Solar and BESS Projects in NSW

- Operational
- Planning
- Withdrawn
- Local Government Area Boundary
- NPWS Reserve
- Highway
- 132kV Transmission Line
- Waterways

100 MW Bomen SF
Estella
Wagga Wagga
A20
Glenfield Park
Rowan
Sturt Highway
Hume Highway
47 MW Gregadoo SF
400 MW Belhaven BESS
160MW Mates Gully SF and BESS
Ladysmith
Lockhart
Olympic Highway
104 MW Maxwell Downs SF and BESS
A41
Culcairn
350 MW Culcairn SF and BESS
Holbrook
Mangoplah
Creasys Road
Holbrook Road

Datum: GDA2020 / MGA Zone 55

0 10 20 km

Mangoplah BESS

Figure 2-2 Regional context

2.2. Local setting

2.2.1. Zoning

The Project Site is zoned Primary Production (RU1) under the *Wagga Wagga Local Environmental Plan 2010* (Wagga LEP) (refer to Figure 2-3). The objectives of this zone are:

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base
- To encourage diversity in primary industry enterprises and systems appropriate for the area
- To minimise the fragmentation and alienation of resource lands
- To minimise conflict between land use within this zone and land uses within adjoining zones
- To foster strong, sustainable rural community lifestyles
- To maintain the rural landscape character of the land
- To allow tourist and visitor accommodation only where it is in association with agricultural activities

Due to the small area of impact proposed, the Project will have minimal impact on existing and adjacent areas of primary production and minimise conflict of resource lands. The Project will encourage diversification of appropriate land use and primary industry enterprises and is highly compatible with the existing transmission infrastructure.

The Project Site is also located within SP2 Infrastructure land zoning, where site access would be facilitated (i.e. road works). This land zoning as appropriate for road works and is associated with Holbrook Road.

Development of electricity generating works are permitted with consent in land zoned RU1 under the Wagga LEP, and also is permissible with consent under the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP).

The selection of the site to develop an energy facility supports the above objectives. It will:

- Be highly compatible with the existing electrical infrastructure
- Encourage employment opportunities during construction and operational phases
- Be located in proximity to the transmission line, so would not lead to fragmentation of agricultural land and assets
- It will also avoid the need for third-party easements and long transmission lines.

RU5
RU5
RE1
RE1
Creasys Road
SP2
RU1
RU1
Holbrook Road
Henty Road

LEGEND

- Project Site
- Involved Lands
- Road

Land Zoning

- RE1
- RU1
- RU5
- SP2

Datum: GDA2020 / MGA Zone 55

NGH

0 0.5 1 km

Mangoplah BESS

Figure 2-3 Land Zoning

2.2.2. Project Site values

The area surrounding the Project Site includes rural farmland, scattered vegetation, and is adjacent to Burkes Creek on the northern border of the Project Site. The Livingstone National Park and Nest Hill Nature Reserve are located 2.5 km northeast and 13.2 km southeast of the Project Site.

There are two mapped dams, connected by an ephemeral 1st order steam on the western extent of the surrounding area. The site is not mapped as flood prone.

There are no buildings within the Project Site. The Project Site is traversed by one 132 kV transmission easement, that transects north to south through the centre of the site.

The Project Site is currently utilised for agricultural purposes, predominantly cropping. The entirety of the site and surrounding area is mapped as Class 4 in accordance with the Land and Soil Capability Scheme (LSC) (NSW OEH, 2012). This category is described as important for its high potential as grazing land with capacity for occasional sowing of pastures and crops, however it does have moderate to severe limitations for some land uses (refer to Figure 2-4 and Figure 2-5).

The Project site is not located on identified Biophysical Strategic Agricultural Land (BSAL).

Figure 2-4 Cropped Project Site

Figure 2-5 Exotic pastures within the Project Site

Parts of the surrounding area supports terrestrial biodiversity and are mapped as biodiverse riparian land. The indicative access road crosses over Paper Forest Creek, which is mapped as biodiverse riparian land and as key Fish Habitat (KFH).

There is a historic Exploration License (EL9347) (as of May 2024) across the site, which no longer shows on the MinView webpage.

The site is bushfire prone category 3 (medium risk of bushfire).

The proximity of sensitive receivers from the Project has been considered within 2km and 4km from the Subject Lot. Due to the small scale of the development (in comparison to a solar or wind farm) amenity impacts (such as noise and visual) focus on the 2km zone while social considerations and consultation extend to all receivers within 4km. Within 2km, there are 12 identified non-associated receivers as shown in Table 2-1 and in Figure 2-6.

Table 2-1 Non-associated receivers within 2 km

Receiver ID	Approximate distance from the Subject Lot[1]
R1	680 m
R2	907 m
R3	967 m
R4	892 m
R5	795 m
R6	1372m
R7	1402m (Associated receiver)
R8	1503m
R9	1501m
R10	1789m
R11	1861m
R12	1960m
R13	1985m

[1] At this stage of the assessment the 2km buffer has been taken from Lot 222 DP754557 only. Following further detailed design in the EIS the buffers would be adjusted to be taken from the Development Footprint.

Datum: GDA2020 / MGA Zone 55

NGH

Mangoplah BESS

Figure 2-6 Nearby receivers

2.3. Alignment with strategic setting

The Project addresses key federal, state and local planning policies as set out below.

2.3.1. Federal

The COP21, also known as the 2015 Paris Climate Conference, achieved a legally binding and universal agreement on climate with the aim of keeping global warming below 2 degrees Celsius, chiefly by reducing greenhouse gas emissions.

On September 8, 2022, the Albanese Government's *Climate Change Bill 2022* passed the Senate and the House of Representatives.

The Bill enshrined into law (as the Climate Change Act 2022) an emissions reduction target of 43 percent from 2005 levels by 2030, and net zero emissions by 2050. In addition, the legislation ensures a whole-of-government approach to drive towards the target. The government has formally lodged this target as an enhanced Nationally Determined Contribution under the Paris Agreement.

The Act backs onto the Labour Government's Powering Australia plan, which is focused on creating jobs, cutting power bills and reducing emissions by boosting renewable energy.

The Project would form part of the Australian effort to help meet this target. The development of utility battery storage is an important contribution to:

- Providing for further reductions in Green House Gas (GHG) emission intensity for generation in the National Energy Market (NEM)
- Supporting the Government's Renewable Target (RET) of 20 percent renewable energy by 2020. While the Large-scale RET target was met in 2019/20, the scheme will continue to require high-energy users to meet their obligations under the policy until 2030.

2024 Integrated Systems Plan

Published every two years, the Integrated Systems Plan (ISP) details what, when, where, and how much electricity transmission, generation and storage is required in the NEM. This assists governments and industry to plan and invest to meet people's current and future energy needs.

The 2024 ISP was first introduced as a draft in December of 2023, and released for comment in January 2024. The final ISP was released in June of 2024. The Plan confirms that urgent investment is needed in new renewable energy generation, transmission, storage and flexible gas generation to continue to deliver secure, reliable and affordable energy, and reach the renewable electricity generation targets of NEM jurisdictions.

The key messages from the plan include:

- Household and business electricity consumption from the grid is forecast to nearly double by 2050.
- With coal expected to retire faster than currently announced, the NEM is forecast to need a seven-fold increase in large-scale wind and solar generation by 2050. The 2024 ISP predicts a 90% (or 21GW) closure of all coal plants by 2030, a significant increase from the forecast two-thirds of coal plants (or 14GW) from the 2022 ISP.
- It also requires building close to 10,000 km of new transmission lines and upgrades to existing networks by 2050 to connect new generation across the power system.
- Delivering the transmission projects identified in this plan is expected to avoid $17 billion in additional costs to consumers if those projects were not delivered.

The 2024 ISP sets out how the Australian Energy Market Operator (AEMO) has identified the optimal development path (ODP) for the NEM and is a roadmap through the energy transition. The 2024 ISP shifts

from the 2022 ISP, the adjustment being in response to economic, physical and policy environmental changes. The AEMO states that “there will be a demand for 82 GW of utility-scale wind and solar in the NEM by 2034-35, and 126 GW by 2049-50. 34GW of this energy would need to come from NSW".

In response to an accelerated timeline for the closure of coal fired energy plants, the optimal development path is Step Change. Step Change is predicted to be the lowest cost, resilient and pragmatic path to the NEM’s energy future rather than Progressive Change which reflects slower economic growth and energy investment or Green Energy exports which is focused on strong industrial decarbonisation and low emission energy exports. Under forecasts for the Step Change scenario (AEMO, 2023), the optimal development path requires investment that would:

- Triple grid scale variable renewable energy by 2030 and increase it seven-fold by 2050. Focus grid scale generation in REZs Almost quadruple the firming capacity using utility scale batteries, hydro and gas-powered powered generation support a fourfold increase in rooftop solar capacity.
- Leverage system security services and operational approaches.

There is an earlier need for renewable energy with a need for 6GW of new renewable energy per year compared to 4GW in the 2022 ISP to replace the coal generation capacity that is existing faster and to meet the higher demand forecast compared to the 2022 ISP.

As detailed above, the Wagga Wagga LGA is situated within a Candidate REZ (N6). While not currently within a REZ, the proposed BESS would benefit the network by shifting electricity storage closer to local consumption, thereby contributing to regional grid capacity enhancement.

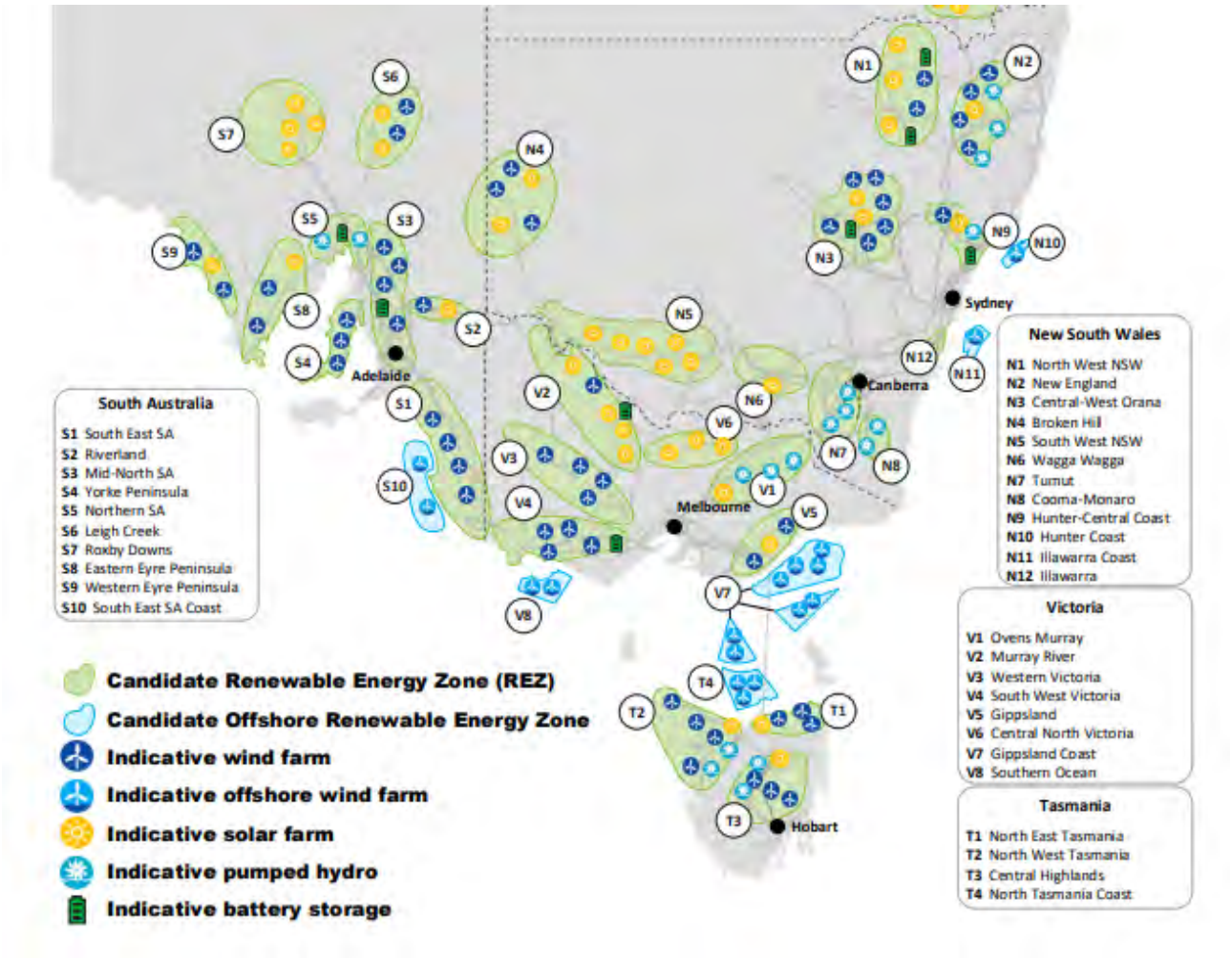


Figure 2-7 Candidate REZ in southern Australia (AEMO, Integrated System Plan 2024, 2024)

2.3.2. New South Wales Government

NSW Climate Change (Net Zero Future) Act 2023

The NSW Climate Change (Net Zero Future) Act 2023 was assented on 11 December 2023. It aims to '*set objective for New South Wales to be more resilient to a changing climate; and to establish the Net Zero Commission to monitor, review and report on progress towards the 2030 and 2050 targets and the objective and to exercise other related functions'*

The Act commits the NSW government to effective action on climate change to ensure a sustainable and fair future for the people, economy and environment of NSW. It legislates:

- Guiding principles for action to address climate change that consider the impacts, opportunities and need for action in NSW
- Emission reduction targets for NSW:
    - 50% reduction of 2005 levels by 2030
    - 70% reduction on 2005 levels by 2035
    - Net zero by 2050
- An object for NSW to be more resilient to a changing climate.
- Establishing an independent, expert Net Zero Commission to monitor, review, report on and advise on progress towards these targets (NSW Government, 2023).

This Act supports the Commonwealth governments' *Climate Change Act* 2022.

NSW Net Zero Plan

In March 2020, the NSW Government released the NSW Net Zero Plan. This plan sets out how the NSW Government will deliver on these objectives over the next decade. The Net Zero Priorities include to:

- Drive uptake of proven emissions reduction technologies that grow the economy, create new jobs or reduce the cost of living.
- Empower consumers and businesses to make sustainable choices.
- Invest in the next wave of emissions reduction innovation to ensure economic prosperity from decarbonisation beyond 2030.
- Ensure the NSW Government leads by example.

The Net Zero Plan Stage 1: 2020-2030 is the foundation for NSW's action on climate change and goal to reach net zero emissions by 2050. The proposed Project aligns with this goal.

2.3.3. Local

Riverina Murry Regional Plan 2041

The Riverina Murry Regional Plan 2041 provides a framework for recent government priorities, and draws from the local strategic planning statements prepared by each council for their LGA. The key outcomes in the regional plan relevant to the Project are:

- Ensure the aims of the *Biodiversity Conservation Act 2016* are considered early in the strategic planning and development process
- Support the transition to a net zero carbon emission State by 2050, including enabling the establishment of the South-West REZ
- Plan for the implications of climate change and the need for resilient and sustainable communities

The Project specifically aligns with two (2) of the planning objectives of the Regional Plan. These are objective 11 and objective 13 and is considered suitable development for the area.

- Objective 11: Community and places – Plan for integrated and resilient utility infrastructure

The Project aligns with the objectives through firming the grid, providing a reliable electricity supply that will be readily available for the area.

- Objective 13: Economy – Support the transition to net zero by 2050.

As renewable electricity generation demand increases, so does the requirement for effective storage. The Project assists with the regions transition to net zero by 2050 through providing reliable energy storage and electricity grid distribution in times of high energy demand.

Wagga Wagga Local Environmental Plan 2010

'Electricity generating works' as defined by the Standard Instrument - Principal Local Environment Plan (2006) includes electricity storage.

The Project Site is zoned Primary Production (RU1) under the Wagga Wagga LEP. Electricity generating works are permitted without consent under this zone within the LEP.

As detailed in Section 2.2.1 above, the selection of the site to develop an energy storage facility supports the RU1 objectives. The development of a prescribed non-residential zone is permissible with consent under the LEP and the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP).

Wagga Wagga Operational Plan 2024 – 2025

The Wagga Wagga Operational Plan outlines the actions that Council will undertake each financial year that contribute to achieving the commitments of the overarching Delivery Program and Community Strategic Plan. It identifies the annual budget required to deliver the actions and the responsible service area and is created each financial year and is year four of Council's four-year Delivery Program 2022/23 – 2025/26. The five strategic directions outlined in this Plan are:

- Community leadership and collaboration
- Safe and healthy community
- Growing economy
- Community place and identity
- The environment

The construction of the Project aligns with the Plans strategy to support and empower the community to help the transition to net zero emissions through firming the grid and providing reliable energy supply in times of high demand.

Wagga Wagga Local Strategic Planning Statement 2040

The Wagga Wagga Local Strategic Planning Statement 2040 set the long-term strategic framework for planning and development in the Wagga Wagga LGA over the next 20 years. The Project aligns closely with two planning principles for the Wagga Wagga City Council (WWCC). These include Principle 1, and Principle 2, and is considered suitable development for the area.

- Principle 1: The environment – Protect and enhance natural areas and corridors

The Project aims to balance the natural environment and development through minimising impact on terrestrial biodiversity within the Project Site and surrounding areas.

- Principle 2: The environment – Increase resilience to natural hazards and land constraints

The Project's objectives align with Council's for achieving the NSW Governments Net Zero 2050 goal through providing a meaningful contribution to the state's transition to renewable energy and stabilising the grid.

Wagga Wagga Community Net Zero Emissions 2050 Roadmap

In 2022, WWCC resolved to set a target of 50% reduction in community emissions by 2030, and zero by 2050. Community emissions refer to all emissions attributed to the LGA, while corporate emissions refer to emissions created by WWCC in its day-to-day operations.

The Roadmap (WWCC, 2022) identifies a list of pathways the LGA needs to consider to achieve the targets for net zero emissions. This involves achieving an overall balance between greenhouse gas emissions produced and greenhouse gas emissions taken out of the atmosphere.

Although the Project does not play a driving role in this strategic goal, it is clear from the Roadmap that WWCC is supportive and committed to contributing to the net-zero emissions goal for the LGA, NSW, and Australia by 2050.

2.4. Project justification

2.4.1. Supporting the clean energy transition

The Project's key justification is in its contribution to electricity reliability, including:

- Facilitating energy shifting and provide for peak demand periods
- Easing energy wastage (curtailment)
- Easing the peak demand and defers the alternative costly network upgrades associated with providing energy in remote locations. Increasing population and economic development results in an increase on energy demands and pushes for costly network expansion
- Improved voltage support and improved power quality
- Support the Australian transition to a renewable energy future through the implementation of a large-scale BESS.

While most of Australia's electricity is currently provided by coal-fired power stations, as many as three-quarters of these plants are operating beyond their original design life (Department of Industry and Science, 2015). The reduction in energy supply from coal-fired power stations requires the development of reliable and sustainable energy supply.

Electricity consumption in Australia is exceptionally high, resulting in costly electricity bills and frequent disruptions to electricity supply during peak times. The renewable energy sector has responded to this high demand and to the need for viable alternative options for electricity generation contributing to 39.4% of Australia's overall electricity in 2024 (Clean Energy Council, 2024) with 5.9 GW of renewable generation capacity added in 2023. By the end of 2023, 27 utility-scale batteries were under construction with $4.9 billion in new investments in large-scale storage during 2023.

The Project would benefit the electricity grid by balancing the network through the addition of energy storage. This stored energy would be utilised during periods of low renewable output into the energy grid. This is especially important during the states transition from centralised to decentralised power generation as coal fired plants are decommissioned. Greater utilisation of large-scale battery storage in conjunction with other dispatchable energy resources may decrease peak wholesale prices. This is due to the ability of battery storage to buffer the energy market during tightened supply times when demand is high (Finkel, Moses, Munro, Effeney, & O'Kane, 2017). The market price effect of dispatchable energy resources such as battery storage is modelled below in Figure 2-8.

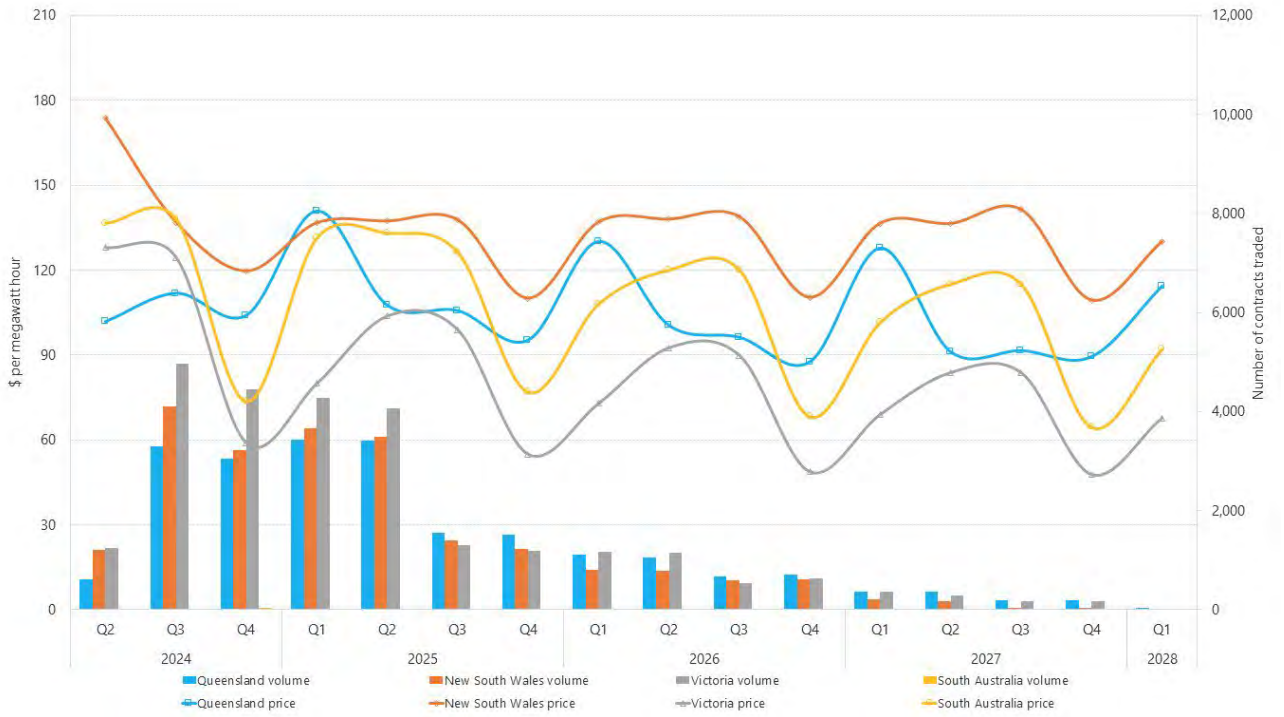


Figure 2-8 Quarterly base future prices and volume traded AER (AEMO, Quaterly base futures prices and volume traded, 2024)

In early 2023, renewables accounted for almost 40% of the total energy delivered through the NEM peaking at 72% in October (AEMO, 2024). Projects such as this will be important to maintain the functioning of the NSW energy system. They will ensure that the state's residents, business owners and service providers to have secure reliable and secure energy as energy supply sources change.

In August 2023, the AEMO released their 2023 Electricity Statement of Opportunities (AEMO, 2023 Electricity Statement of Opportunties, 2023). The report details the need to accelerate the transition into renewable energy in NSW, in line with the delayed closure of the Origin Energy 2.88 GW Eraring coal fired power plant, expected in August 2027.

The Statement reports that if planned big battery storage projects are built and connected on time, then the reliability standards will likely not be breached in NSW with the closure of the Eraring Plant in two years' time.

The AEMO has forecasted potential reliability gaps in every state in the coming years (refer to Figure 2-9) However, this forecast does not include many renewable projects that are yet to be built or those that are in the pipeline. Figure 2-9 shows increased reliability risk but does not reflect the reliability potential for the 248 GW pipeline of proposed generation and storage projects.

The AEMO findings further justify the need for battery storage in NSW.

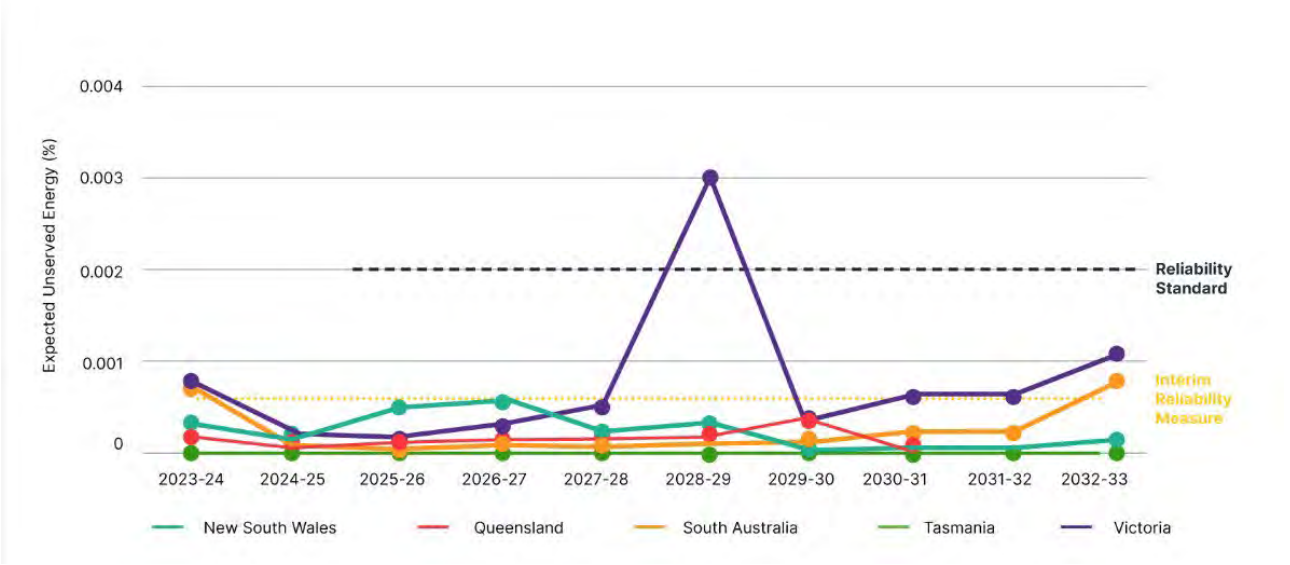


Figure 2-9 Expected unserved energy and reliability (ieefa, 2024)

2.4.2. Job creation

Job creation would be a socio-economic benefit of the Project by providing employment and economic stimulus, primarily through the construction phase. The Project is expected to create up to 60 project related jobs during construction and two (2) operational staff.

Largely due to the influx of workers, the Project would generate economic stimulus in Mangoplah and Wagga Wagga and throughout the Wagga Wagga LGA during this time. These areas would provide accommodation, food, fuel and trade equipment and services, mostly during the construction phase.

During operation of the BESS, economic benefits would be less, focussing on monitoring and inspections, maintenance, repair and upgrade of infrastructure, much of which is likely to be provided by the local labour force.

2.4.3. Site suitability

The Project Site has been selected with the goal of balancing the assessed social, environmental and economic aspects associated with the development of a BESS. A focus objective is the establishment of a project that would proceed at a scale that takes these factors into consideration.

The site is considered suitable as it is not on identified BSAL, it is a relatively small footprint and would not impact greatly on the surrounding agricultural enterprises due to its small size and location to an existing 132kV electricity transmission network.

The site does not hold high ecological values, having been used excessively for cropping and other agricultural purposes. While there are paddock trees within the Involved Lands, the siting of the BESS is devoid of all standing trees and woodland, with extremely low-quality exotic pastures present.

2.5. Likelihood for cumulative impacts

The Project is likely to result in cumulative impacts, most notably with the Maxwell Downs Solar Farm, Belhaven BESS and Gregadoo Solar Farm, also located in the southern area of the Wagga Wagga LGA. These are addressed in Section. 6.12 and would be assessed in detail in the EIS in accordance with the

Cumulative Impact Assessment Guidelines for State Significant Projects (NSW Department of Planning, Industry and Environment, 2021).

2.6. Project agreements

An agreement is proposed with the associated receiver within the Involved Lands. At this stage, no other agreements have been entered into with neighbouring properties or other groups. The Applicant may seek to enter into additional benefit sharing agreements in consultation with nearby neighbours, or if relevant EIS assessments identify that relevant impact criteria cannot be met at non-associated receiver.

Associated and non-Associated receivers within and surrounding the Project Site are shown on Figure 2-6.

The Applicant is committed to ensuring there are local benefits as a result of the Project and will continue to consult with landowners, WWCC and the local community throughout development of the EIS.

3. The Project

The Project would involve the development, construction, operation, and decommissioning of a BESS with a capacity of up to 100 MW / 400MWh. It would supply electricity to the national electricity market during peak demand periods.

A BESS is a device that stores energy by accumulating energy though reversible electrochemical reactions. The energy is stored/extracted in DC (Direct Current) and converted/inverted into AC (Alternating Current) by an accompanying bi-directional inverter sized to the storage capacity.

The Project Site is approximately 13.1 ha, with the indicative investigation area for the BESS and related substation occupying approximately 10.4ha of that area. However; the entirety of the Subject Lot 222/DP754557 (120ha) is being considered for development as a precaution in case some land does need to be used for features such as laydowns or to avoid impacts. The overall Project Site is not considered the final impact area, allowing for the final Development Footprint to be developed throughout the EIS The Project Site (i.e. investigation area) for the BESS and substation are inflated to allow flexibility during the detailed design stage. At this stage, the estimated operational footprint is approximately 4ha (excluding access road upgrades). A breakdown of the land included in the Project Site is included in Table 1-1.

3.1. Project description

The Project would include the following key built form features:

- BESS including battery enclosures, inverters, transformers, switchgear and control room
- Onsite substation including transformer switch bays and switchgear housed in portable substation containers
- Connection from the onsite substation to the existing overhead 132kv transmission line
- Permanent office, operation and maintenance (O&M) buildings, hardstands and Project signage
- Site access to the BESS from Holbrook Road, internal site access tracks and parking
- Stormwater management infrastructure, lighting, fencing and security.

The Project Site boundary and Indicative Layout is provided in Figure 3-1. The final Project Site that will be assessed in the EIS will be informed by community and stakeholder consultation, and detailed environmental investigations.

Lot 222
DP754557

Lot 225
DP754557

Lot 228
DP754557

Creasys Road

Holbrook Road

Henty Road

LEGEND

Project Site

- Indicative BESS site
- Indicative access road corridor
- Involved Lands
- Site Access

Indicaitve Layout Components (within Project Site)

- BESS Investigation Area
- Onsite Substation Investigation Area
- 132kV Transmission Line
- Road

Datum: GDA2020 / MGA Zone 55

NGH

0 0.5 1 km

Mangoplah BESS

Figure 3-1 Indicative Layout

3.1.1. Project delivery

The Project delivery post approval can be separated into four key stages: Site establishment, construction, operation and decommissioning. The details of these stages are outlined below and would be described in more detail during the EIS phase.

Table 3-1 Indicative timeline

Phase	Approximate commencement	Approximate duration
Project Approval	2024	1 – 2 years
Construction	2027	12 – 15 months (including site establishment)
Operation	2028/29	Approximately 20 years*
Decommissioning	BESS expected to be operation for 20+ years with potential for extension	Within 18 months of the cessation of operations

* The battery enclosures have a design life of 20 years. At the end of operational life, this may be extended subject to the replacement and/or refurbishment of components and market conditions.

Construction work hours

Construction hours will be limited to:

- 7am to 6pm Monday to Friday
- 8am to 3pm Saturday
- No work on Sunday or public holidays.

The delivery of materials requiring an escort and/or emergency works may occur outside of the above construction hours. Any additional planned outside hours works would be considered in the EIS.

3.1.2. Site establishment

The site establishment phase would include the establishment of the site access and associated road treatments required to facilitate the traffic movements for the construction phase. This period would be undertaken over approximately three months. The details of the access treatments would be covered in the EIS. However, the access would likely be via the existing private access track from Holbrook Road, which is currently used for agricultural purposes.

During this site establishment, activity on site may occur for early delineation of the site such as marking no go zones and compound area marking. Additional pre-construction works that may be undertaken also include installation of fencing, artefact survey and/or salvage, overhead line safety marking and geotechnical drilling and/or surveying.

3.1.3. Construction

The construction phase would begin following the road upgrades and is expected to take approximately 12 - 18 months. During peak construction there would be up to 60 workers onsite. The construction program may be staged, further detailed would be provided in the EIS. Construction will involve the following key activities:

- Contractor mobilisation.
- Site establishment including site access, access treatments (if required), clearing and grubbing, security fencing, temporary construction facilities/laydown, safety controls and environmental controls
- Earthworks and internal access roads as required.
- Construction of foundations.
- Delivery of module components.
- Delivery of cabling, communication, and earthing components.
- Trenching.
- Installation of module components.
- Delivery and installation of inverter-transformer stations.
- Overhead/ Underground powerline connection. Connection to overhead transmission line
- Construction of ancillary buildings and structures.
- Testing and commissioning
- Removal of construction facilities/laydown and reinstatement of temporary areas.

Materials

The following materials would be required to construct the Project. More information on material quantities and equipment needed would be provided in the EIS.

- Aggregates, gravel road base, and concrete
- Fencing, gates and lighting
- Cabling and conduit
- Container-based modules containing the battery units
- Inverters and transformer stations
- Building structures (including temporary structure for construction)
- Control room and switchgear
- Skid-based Power Conversion Units, Ring Main Units and transformers.
- Steel wall cladding and roofing for operations and maintenance building and control room with a steel frame structure.
- Timber and fixtures for building fit-out.

The material quantities would be estimated in more detail in the EIS when the Development Footprint is developed

Equipment

The following typical equipment would be used throughout the construction of the Project. Further details and quantities of these equipment would be provided in the EIS:

- Excavators
- Mobile cranes
- Graders
- Telehandlers
- Forklifts

- Drum / padfoot rollers
- Wheeled loader
- Dump truck
- Trencher
- Water truck
- Hand tools

3.1.4. Operation

It is anticipated that the Project would operate for about 20 years. It is envisaged that some individual components, such as battery modules and inverter units, may need to be replaced before the end of this term due to unforeseen faults or general wear and tear.

At the end of operational life, this may be extended subject to the replacement and/or refurbishment of components and market conditions. It is expected that with improved technology, the battery enclosures could be upgraded and be maintained to extend the life of the BESS. Any wholescale repowering would seek to make use of the existing foundations, connections and substation and would generally comprise swapping out and recommissioning BESS modules.

It is estimated that two (2) full-time equivalent (FTE) staff would be employed onsite during operation, with an additional influx of staff required for refurbishment works. The BESS would primarily be operated remotely, which would require further remote full-time staff. Additional contractors local to the Wagga Wagga region would also be required for jobs such as weed and pest control.

3.1.5. Decommissioning

The Project has a finite life span. When that lifespan is reached, an upgrade of the BESS could be undertaken and consequently either request an extension or lodge a new DA with a more current technology.

If the site is not repowered at the end of its useful life than it will be decommissioned. The decommissioning phase would involve removal of all above ground infrastructure and below ground infrastructure where possible and return of the site to its existing land capability.

3.2. Estimated development cost

The estimated Development Cost (EDC) of the Project would be in excess of $30 million. The final EDC figure would be subject to a detailed EDC report would be submitted to the assessment agency with the EIS.

3.3. Restrictions or covenants over the land

There are no known restrictions or covenants that apply to the Project Site.

A transmission easement runs north-south through the Project Site. Ongoing consultation with TransGrid to confirm connection requirements will be undertaken in the EIS phase.

3.4. Analysis of alternatives

Alternatives considered below include statements regarding alternative site locations and alternative energy generating/storage technologies.

3.4.1. Alternative technologies and components

The critical components of a BESS include:

- Battery modules.
- Nearby grid connection infrastructure.

Over recent years, the underlying technology surrounding BESS development has been evolving at an increasingly rapid rate. The Applicant would utilise the latest technical and cost-efficient technology available at the time of construction.

3.4.2. Storage technology

At this stage, lithium-ion technology is the preferred electrical storage technology because it is cost-effective and a proven technology which is readily available for broad scale deployment at the site. At this stage there are no notable battery technologies competing with Lithium-ion for this scale of development however, no technology is being ruled out for consideration The storage technology would be confirmed in the EIS.

3.4.3. Grid connection

The Project would connect to the existing overhead 132 kV transmission line that transects the Project Site. An onsite substation area is currently being investigated where it will connect to the transmission line. The final layout and connection point would be refined during the EIS phase.

3.4.4. Site location

Geographical location

An alternative site within the Greater Hume LGA was considered. However, the Mangoplah site was chosen as the site provides and optimal combination of

- Sufficient levels of available capacity on the grid distribution system
- Proximity to a grid connection,
- Suitable planning context
- Extremely low potential impacts to biodiversity and heritage
- Excellent road access
- Minimal sensitive receivers within 2km of the Project Site
- Low land use conflict.

Once the general area was selected by the Applicant, the only alternative option is to not undertake the Project. This is reflected below as option 1.

Site access

Consideration was also given to accessing the site from the WWCC owned Paper Forest Road, and travelling north on an unnamed, unsealed road. This was however deemed unsuitable, as the unsealed road passes a number of non-associated receiver dwellings and private driveways. However, use of this road will continue to be explored within the EIS stage in consultation with potential impacted receivers.

To reduce overall impact to nearby non-associated receivers, the associated receivers private access road is being considered.

3.4.5. Alternative options

Option 1: Do nothing

The do-nothing option considers the consequences of not carrying out the development. The strategic need for the Project outlined in Section 2 of this report is justified to address the state's current need for storage methods that address grid firming to support climate change commitments that are moving away from reliance on fossil fuels. Not undertaking the Project would not assist in the transition away from fossil fuel reliant energy production.

The do-nothing option would have the benefit of not having the environmental impacts of the proposed Project, however, the scale of the Project is not expected to have significant local or regional impacts, with further impact considerations and mitigation measures to be considered in the EIS.

Option 2: Construction the Mangoplah BESS

The advantages and disadvantages of the Project have been summarised in Table 3-2. Mitigation measures would be considered in the EIS to ensure the Project does not result in any significant or unnecessary environmental impacts.

Table 3-2 Advantages and disadvantages of constructing the Mangoplah BESS

Advantages of Option 2	Disadvantages of Option 2
• Aligns with the strategic needs and Project justification • Generally low environmental values of the site, allowing the Project to avoid significant impacts o Detailed studies will be completed in the EIS that will prioritise avoidance of impacts prior to considerations for impact minimisation and offsetting. • Broader benefits to the community through project agreements with the WWCC. • Assists with firming supply of electricity, which is critical to a renewable grid.	• Select environmental impacts that will be minimised through mitigation measures to be developed in the EIS.

As noted in Section 1.6 and Section 6, minimal notable issues requiring avoidance or risk minimisation/offsetting have been identified at this scoping stage. Standard mitigations are proposed and would be further detailed in the EIS.

4. Statutory context

Relevant statutory considerations for the Project are presented in Table 4-1. It is categorised in alignment with the DPHI's scoping report guidelines (DPE, 2022).

Table 4-1 Statutory context

Category	Statutory requirements	Relevance to Project
Power to grant consent	State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP) *Environmental Planning and Assessment Act 1979* (EP&A Act).	Section 20 of Schedule 1 of the Planning Systems SEPP states that the following is considered an SSD: *Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that:* *(a) has an estimated development cost of more than $30 million…* 'Electricity generating works' as defined by the *Principal Local Environment Plan 2006* include electricity storage. The Project would have an EDC of more than $30 million. Therefore, the Project is classified as "State Significant Development" under division 4.7 of the EP&A Act. The Minister for Planning and Public Spaces is the consent authority for SSD, and SSD applications are assessed by DPHI (unless specific conditions occur e.g., where 50 or more people have objected to the application, the local council has objected to the application; and/or the applicant has disclosed a reportable political donation, whereby the Independent Planning Commission (IPC) would be the consent authority. The provisions of the EP&A Act are regulated by the control authority through the application of the Environmental Planning and Assessment Regulation 2021.
Permissibility	State Environmental Panning Policy (Transport and Infrastructure) 2021 (TISEPP)	The site is located within land zoned (Primary Production RU1) under the Wagga Wagga LEP. Electricity generation is permissible with consent in this land zone. Section 2.36(1)(b) of the TISEPP states development for the purpose of electricity generating works

Category	Statutory requirements	Relevance to Project
	Wagga Wagga Local Environmental Plan 2010 (Wagga Wagga LEP).	may be carried out by any person with consent on any land in a non-prescribed residential zone. The land is zoned RU1 and under Section 2.35 of the TISEPP, a non-prescribed residential zone.
Other approvals	*Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), *Environmental Planning and Assessment Act 1979* (EP&A Act), *Roads Act 1993* (Roads Act), *Conveyancing Act 1919,* *Fisheries Management Act 1994* (FM Act) *Heritage Act 1977,* *National Parks and Wildlife Act 1974* (NPW Act), *Rural Fires Act 1997,* *Water Management Act 2000* (WM Act).	**EPBC Act approval** If a matter of national environmental significance is impacted by the Project an EPBC Act referral would be undertaken. The access road corridor travels through exotic vegetation (canola), woodland and low condition native grassland. The Plant Community Type (PCT) that forms the woodland and grassland (PCT 277) is associated with critically endangered BC Act and EPBC Act listed Threatened Ecological Communities (TEC). It is likely that the area along the access road corridor meets the criteria for the TECs. As such, any clearing for road widening for the access road may require referral under the EPBC Act. Further assessment during the EIS phase would be required to confirm presence or absence, however at this stage referral is considered unlikely. **Consistent approvals** • Section 4.42 of the EP&A Act states "An authorisation of the following kind cannot be refused if it is necessary for carrying out State significant development that is authorised by a development consent under this Division and is to be substantially consistent with the consent": • Consent under section 138 of the Roads Act for road upgrades to the public road network. • Part 8 Division 5 of the EP&A Reg specifies the form and content of EISs, which provide the basis for the Secretary's Environmental Assessment Requirements (SEARs) issued for Projects. • Section 59 of the EP&A Reg addresses public participation for SSD. • Section 251 of the EP&A Reg requires an EDC of a DA in order for the Planning Secretary to make their determination. **Other approvals** Approvals/licenses that will be required for the Project include: • A subdivision certificate under Division 6.4 of the EP&A Act. The subdivision would be

Category	Statutory requirements	Relevance to Project
		undertaken under the provisions of the *Conveyancing Act 1919*. **Approvals not required** Section 4.41 of the EP&A Act excludes the following approvals when the project is an SSD. • A Fisheries permit under the Section 201 and 219 of the *Fisheries Management Act 1994* • An excavation permit for details heritage surveys under Section 139 of the *Heritage Act 1977* • An Aboriginal heritage impact permit under Section 90 of the *National Parks and Wildlife Act 1974*[2] • The Project would not require a bushfire safety authority under Section 100B of the *Rural Fires Act 1997* • A water use approval (Section 89), a water management work approval (Section 90) and an activity approval (Section 91) under the *Water Management Act 2000* would not be required.
Pre-condition to exercising the power to grant consent	State Environmental Planning Policy (Transport and Infrastructure) 2021	• In accordance with Section 2.119 The consent authority must not grant consent unless it is satisfied of certain matters relating to vehicular access to the classified road, impacts on the safety, efficiency and operation of the classified road and sensitivity of development fronting the classified road. • Section 2.122 of the Transport and Infrastructure SEPP requires 'traffic generating development' to be referred to TfNSW.
Mandatory matters for consideration	Consideration under the EP&A Act and EP&A Regulation	The EIS would consider the following objects of the EP&A Act in detail. Section 1.3 - Relevant objects of the Act: • To promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources • To facilitate ecologically sustainable development by integrating relevant economic,

[2] Note that the Project will comprehensively assess impacts to Aboriginal heritage as part of an Aboriginal Cultural Heritage Assessment (ACHA) during the EIS.

Category	Statutory requirements	Relevance to Project
		environmental and social considerations in decision-making about environmental planning and assessment • To promote the orderly and economic use and development of land • To protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats. Section 4.15 - Relevant environmental planning instruments and any proposed instruments: • State Environmental Planning Policy (Transport and Infrastructure) 2021 • State Environmental Planning Policy (Planning Systems) 2021 • State Environmental Planning Policy (Resilience and Hazards) 2021 • State Environmental Planning Policy (Biodiversity and Conservation) 2021 • State Environmental Planning Policy (Primary Production and Rural Development) 2021 • Wagga Wagga Local Environmental Plan 2010 • Wagga Wagga Development Control Plan 2010 Note: The provisions of the TISEPP override the provisions of the Wagga Wagga LEP and Wagga Wagga Development Control Plan 2010, however specific relevant provisions of the LEP would be considered in the EIS. Relevant planning agreement or draft planning agreements: • The Applicant is undertaking planning agreement discussions with WWCC, with more detail to be provided at the EIS stage. Regulations • EP&A Regulation 2021 • Environment Protection and Biodiversity Conservation Regulations 2000 Under the provisions of the Act the Project would also consider:

Category	Statutory requirements	Relevance to Project
		• Likely impacts of the development (environmental, social and economic) • Suitability of the site for development • Submissions made in accordance with the Act or regulations • Public interest
Mandatory matters for consideration (specific instruments)	*Biodiversity Conservation Act 2016* (BC Act) State Environmental Planning Policy (Biodiversity and Conservation) 2021, State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP), *Native Title Act 1993*	• The Project would require a Biodiversity Development Assessment Report (BDAR) prepared in accordance with Section 7.9 of the *Biodiversity Conservation Act 2016.* The BDAR will be undertaken in consultation with the DPHI's Biodiversity Conservation Division (BCD) • City of Wagga Wagga is identified in Schedule 2 of the State Environmental Planning Policy (Biodiversity and Conservation) 2021 as a Koala LGA. As such the BDAR will consider Koala conservation in accordance with Chapter 3 & 4 of the SEPP. • A Preliminary Hazard Analysis (PHA) will be completed that addresses Section 3.7 of the State Environmental Planning Policy (Resilience and Hazards) 2021 for energy storage systems. • A search of the Native Tile Register was undertaken on the 4th of September 2024 revealed that no determined Native Title exists over the Project Site.

5. Engagement

Early engagement has commenced for the Mangoplah BESS with proactive engagement undertaken by the Applicant and NGH, as summarised below. A more detailed summary with supporting information can be found attached as Appendix C.

5.1. Community and stakeholder engagement

As outlined in the Engagement Summary Report (Appendix C), the engagement strategy aimed to achieve the following objectives:

1. Produce clear information on the Project, potential impacts (positive and negative) and benefits for the environment, community, and region by delivering high-quality communication channels across all targeted channels.
2. Endeavour to contribute towards positive impact in the region with shared local and broader regional social, economic and environmental benefits considered.
3. Develop a sense of local ownership in the Project by identifying local advocates.
4. Work together with the community in a collaborative way by identifying issues and likely mitigations throughout Project phases.
5. Support an uplift in the regional economy and level of local prosperity via a regional economic assessment.
6. Demonstrate sharing of Project benefits.
7. Support and engage local capabilities, engaging several local suppliers, including Aboriginal owned suppliers.
8. Maintain a positive corporate image for the Applicant and the renewable energy industry with the development of social licence and management of social and reputational risks.
9. To inform the Social Impact Assessment (SIA) and potential benefit sharing schemes.
10. Community information has been gathered via phone, physical mail, posted emails, an online survey, and face to face meetings.

In summary, this report has been informed by:

- A face to face meeting with WWCC.
- A face to face meeting with Wagga Wagga Business Chamber.
- A face to face meeting with a non-associated receiver (R1).
- A face to face meeting with a community member.
- A face to face meeting with 5 x community members and 1 x non-associated receiver (R2-R3)
- Targeted SIA interviews.
- An online meeting with the Member for Riverina.
- An online meeting with the Member for Wagga Wagga.
- 119 letters posted twice (238 total) introducing the project, giving a point of project and directing them to the online survey.
- 10 phone calls to non-associated receivers (R1, R2-R3, R12), community members, and First Nations Representative (Bundyi Cultural Tours).
- 5 responses to the online survey.
- Distribution of FAQ to all stakeholders (26 copies delivered via email).
- Distribution of Fact Sheet to all stakeholders (26 copies delivered via email).
- 60 emails total to targeted stakeholders, non-associated receivers, and the wider community.

5.2. Results of community and stakeholder engagement

5.2.1. Wagga Wagga City Council

In October 2024, NGH and the Applicant met with WWCC to discuss the proposed project. The Council was generally positive and open to working constructively with the Applicant throughout the DA process. SREA presented an overview, highlighting the connection point, access road, and the project's capacity in megawatts.

Key questions raised by the Council included the battery type (SREA confirmed lithium but no manufacturer yet), the Project's estimated cost, and whether it followed the SSD pathway. SREA and NGH explained that SEARs had not been received as the Project is still in the early stages. The Mangoplah site was chosen based on key criteria.

The Council raised concerns about the construction timeline, Project footprint, decommissioning, waste removal, worker accommodation, and landowner insurance. While NGH asked about using a local workforce, the Council doubted this, citing past housing shortages. Ongoing investigations into insurance impacts were noted.

Council stressed the importance of clear community communication to gain social license but expected minimal concerns given the Project's size. SREA confirmed the Project is privately owned. Discussions on a community benefit fund are ongoing, pending further guidelines during the EIS.

5.2.2. Member for Riverina - Michael McCormack MP

During the meeting, several key questions were raised regarding the project. Mr McCormack asked about the number of neighbouring properties that had been contacted, any concerns they had raised, and details of the agreement with the landowner, who has a good relationship with the local MP. Specific questions centred on the project's proximity to Holbrook Road and Mangoplah, its connection to Maxwell Downs Solar Farm, the colour of the battery containers, and potential vibration issues similar to those experienced with wind farms.

Concerns about noise impacts were also discussed. The Project Team explained that thorough assessments, including noise evaluations, are currently underway. The Project Team expressed confidence that the distance from neighbours would result in little to no effect. Additional questions included the project’s operational timeline, costs, and whether it qualifies as an SSD.

A request was made for all materials and updates to be shared via email, stressing the importance of keeping constituents informed about engagement with the developer and proposed mitigation strategies. Although no clear support for the proposal was expressed, the meeting was described as positive.

5.2.3. Member for Wagga Wagga – Dr Joe McGirr MP

Questions raised included the size and dimensions of the BESS, with the Project Team explaining that details were still being finalised. Questions about the location choice were addressed, noting grid studies since 2023 and the site’s natural shielding and minimal environmental impact.

Mr McGirr asked for more information about SREA’s operations and their experience in solar and wind energy projects. Clarification was also sought on the company’s ownership and operational methods.

Questions were raised about the BESS’s functionality, with the team stating it could power approximately 190,000 homes for one hour. Mr McGirr also expressed difficulty understanding the need for a BESS in the region. The possibility of a CBS was raised, alongside concerns about reliable internet following the decommissioning of the 3G network.

5.2.4. First Nations Representative

Key concerns focused on past experiences of inadequate community engagement by other developers, and environmental concerns around the BESS site, particularly its proximity to a creek that may overflow.

SREA agreed to undertake cultural awareness training and acknowledged the need for meetings between nearby neighbours and the First Nations community to foster better relationships.

Local Landcare groups were highlighted as valuable stakeholders due to their connections with First Nations individuals and farmers. Concerns about over-consultation with First Nations communities were raised by the Project Team, with the representative noting that promises, particularly around employment, often remain unfulfilled. It was suggested that developers include a clause in contracts to ensure the hiring and training of an Aboriginal person.

It was suggested that a board meeting with key stakeholders in a neutral setting would be the most effective approach to community consultation. A perceived disconnect between the biodiversity, heritage, and engagement teams was noted, with calls for RAPs to be involved from the beginning.

5.2.5. Wagga Wagga Business Chamber

The project team met with the Business Chamber in Wagga, where a representative raised questions about the project's business model, operational details, and employment numbers during both the construction and operational phases. The representative offered to connect SREA with local businesses and highlighted the Chamber's regular meetings and networking events, suggesting that SREA consider joining to enhance its brand reputation.

Valuable advice was given regarding project timelines, emphasising that delays could negatively impact local businesses reliant on SREA's involvement. Concerns about skills shortages and accommodation issues were reiterated, with a recommendation for SREA to prioritise employing a local workforce to address these challenges.

5.2.6. Non associated receivers and community members

NGH and SREA met with residents to address concerns regarding the BESS project, focusing on issues such as:

- The impact of road upgrades and planned earthworks that had previously diverted rainwater and caused flooding on farms.
- Potential inaccessibility of the access road in winter due to mud or flooding, complicating fire service access.
- One resident proposed using his internal road for construction access, noting its suitability for heavy vehicles and willingness to accept construction impacts in exchange for financial compensation.
- Concerns about heating and cooling systems during summer outages and potential impacts on insurance, which the Project Team is investigating.
- Issues raised regarding limited mains water access for firefighting and loss of prime agricultural land.
- Discussion of visual impacts, with an invitation extended for participation in the LVIA.
- Questions regarding runoff effects on irrigation creeks and fire safety management by the RFS were addressed.
- Clarification sought on the project's potential to initiate a subsequent solar farm, which SREA confirmed was not intended.

- Allocation of CBS funds was highlighted, with residents insisting these be directed to Mangoplah rather than managed by the Council.
- Residents questioned the BESS site choice, recalling prior discussions with the landowner about its placement for reduced visual impact.
- Residents expressed a preference for the relocation of the BESS towards the north of the block, closer to the watercourse.
- Advocacy for future consultations to be held as evening town hall meetings rather than small home gatherings.

5.2.7. Survey respondents

All five (5) respondents, who reside in the local area, expressed strong opposition to the proposed project. They identified the preservation of the landscape, views, and natural values, particularly biodiversity and ecosystems, as their primary concerns.

Four (4) respondents highlighted potential negative impacts on the local area as their main interest in the project. They stressed the importance of maintaining the visual appeal of the land, creeks, and trees, as well as preserving prime farming land in its untouched state.

In terms of environmental impacts, all five (5) participants deemed fire management practices crucial. Concerns about impacts on waterways, waste management, and native vegetation were noted by three (3) respondents each, while two (2) highlighted concerns regarding land use.

Socially and economically, four (4) respondents emphasised the disruption to community cohesion, while three (3) raised concerns about property values and the importance of engaging with neighbours.

Regarding amenity factors, all five (5) respondents were concerned about visual impacts on neighbouring properties, transportation planning, and the use of local roads. Additionally, four (4) expressed concerns about noise and temporary construction disturbances such as dust and traffic.

5.3. Agency engagement

5.3.1. Department of Planning Housing and Infrastructure

NGH and the Applicant conducted a virtual meeting with DPHI on 2 October 2024, to introduce the Project and discuss matters for consideration in the Scoping Report and the EIS.

DPHI discussed their general expectations for the Development Application and timing of lodgement of the Scoping Report. In particular, emphasis on the requirements for community consultation and abiding by the SSD guidelines for the preparation of the Scoping Report and EIS were made.

5.4. Future engagement activities

Future engagement activities for the EIS will continue to align with the Department's community engagement guidelines. Specifically, the continuation of engagement would include:

- Consideration of the Consultation Summary Report to consider concerns identified and the likely mitigation requirements
- Review this report to consider the concerns identified and the likely mitigation requirements.

- Engage with DPHI to further discuss the likely expectations for engagement, impact analysis/mitigation and community benefit planning required in the EIS stage.
- Share decisions on mitigations with the non-associated receivers within 4 km, WWCC, elected MPs, First Nations groups, and the wider Mangoplah and Wagga Wagga communities.
- Work closely with non-associated receivers throughout the wider SSD development application process, including participation within specialist assessments and sharing information about their outcomes with them.
- Continue engagement and develop relationships with the local First Nations community.
- Engage in ongoing discussions with affected stakeholders about the aspects of the project that their feedback can influence during the environmental assessment process. This includes considerations related to visual impacts, site/road access, as well as community benefits.
- Be open and transparent with stakeholders and be committed to sharing information about the Project throughout the entire planning process.
- Work proactively to develop strong relationships with neighbours, residents, and community members.
- Mitigate impacts, develop a CBS program, continue discussions regarding potential VPA with WWCC, and deliver a sophisticated communications and engagement program for the EIS that engages comprehensively with the wider community.

6. Environmental assessment

In accordance with the *State Significant Development Guidelines 2024* (DPHI, 2024) and the *State significant Development Guidelines – preparing a scoping report: Appendix A* (DPE, 2022), the scale of impact, nature of impact and sensitivity of the receiving environment for the environmental issues has been evaluated in this Chapter and summarised in the scoping summary table in Appendix A. The scoping summary table stipulates the level of assessment required for each matter for the EIS phase. In summary, the table identifies 7 matters requiring detailed assessment.

Table 6-1 Matters requiring detailed assessment

Matter	Cumulative assessment	Engagement	Supporting chapters/ appendices
Socio-economic impacts	Yes	Specific	Section 6.1 Appendix D
Amenity – landscape and visual	Yes	Specific	Section 6.2
Amenity - noise and vibration	Yes	General	Section 6.3
Biodiversity	No	Specific	Section 6.4
Hazards and risks Hazardous and offensive development – Battery Storage	No	General	Specific 6.6
Hazards and risks – battery bushfire	No	General	Section 6.6
Heritage - Aboriginal	No	Specific	Section 6.7
Access – traffic	Yes	Specific	Section 6.9
Water – hydrology and groundwaters	No	General	Section 6.13

Table 6-2 Matter requiring standard assessment

Matter	Cumulative assessment	Engagement	Supporting material appended
–Land – land use, soils and contamination	No	General;	Section 6.5
Hazards and risks - EMF	No	General	Section 6.6
Heritage – Non-Aboriginal	No	General	Section 6.8
Air - air quality and climate	No	General	Section 6.10

Matter	Cumulative assessment	Engagement	Supporting material appended
Waste Management	No	General	Section 6.11
Cumulative impacts	No	General	Section 6.12

6.1. Social and economic impacts

A Preliminary Social Impact Assessment (PSIA) has been undertaken by social impact specialists at NGH to gain initial insights into the potential social impacts and benefits of this Project. The report is included as Appendix D.

A mixed-method approach was adopted to inform the development which included targeted online interviews with key stakeholders, document analysis of grey literature and an online community survey.

6.1.1. Existing environment

Some of the key potential positive opportunities identified for the Project are:

- Employment: The Project has the potential to generate employment to the local community.
- Diverse economy: An increase in business opportunities through an increase in local business transactions, accommodation, use of services, etc., is foreseen in the locality.
- Training opportunities: With the existence of several similar projects in the region, the need for skilled workforce increases. There may be an opportunity for the Project, in collaboration with TAFE, local high schools and similar institutions to initiate short-term tailored courses and work placements to build local capacity.
- Community investment: The potential of benefit resulting from the community benefit sharing frame work.

However, during the PSIA numerous stakeholders that were interviewed expressed concerns about some of the perceived and potential opportunities of the Project. These concerns were at an individual and community level.

It was also noted that several of the proposed benefits of this project were considered unlikely to be experienced by the community, as they were considered to be unlikely or to be challenged by the local and regional social and economic context. Further key potential perceived positive and negative impacts were noted in the community feedback survey for the Project.

Some of the key negative impacts identified include potential changes in the amenity, and increased dust and noise levels impacting the health and well-being of locals. Further, the influx of workers during the construction phase could potentially increase pressure on accommodation and services, impacting the community.

6.1.2. Issues for consideration

The PSIA has identified potential social impacts and benefits arising from the Project. The key potential benefits and impacts of this Project and their associated level of assessment to be undertaken as part of the full SIA within the EIS Phase are summarised in the table below (refer to Table 6-3). Further, draft recommended enhancement and mitigation measures, directly responding to the identified potential social impacts and benefits, are suggested. Further work is required to refine, develop, add to, and test the suggested mitigation measures that are detailed within these overarching management strategies, as part of the full SIA to be undertaken within the Project's EIS phase.

Table 6-3 Social impact level of assessment required in full SIA

Potential impact	Stakeholder category	Assessment level in full SIA
Way of Life, and Health and Wellbeing		
Impacts on privacy, peace, and quiet enjoyment	Near-neighbours	Detailed
Stress and anxiety to those opposing the Project	Near-neighbours Interest Groups	Detailed
Amenity impacts (air quality, noise)	Near-neighbours	Detailed
Community		
Potential changes to community cohesion	Broader community	Detailed
Change in community feel	Broader community	Detailed
Increased community investment	Broader community but likely most impactful for near neighbours	Detailed
Access		
Increased pressure on housing and accommodation	Broader community	Detailed
Increased pressure on social infrastructure	Broader community	Standard
Increased traffic on local roads	All categories but likely most impactful for near neighbours	Standard
Culture		
Potential damage to Aboriginal cultural values and materials	First Nations	Standard
Surroundings		
Safety risks (Inc fire)	Near-neighbours Service deliverers	Standard
Change to landscape character and visual amenity	Broader community but likely most impactful for near neighbours	Detailed
Livelihoods		
Increased local employment opportunities	Industry First Nations	Detailed

Potential impact	Stakeholder category	Assessment level in full SIA
Increased economic activities (diversification of income stream)	Industry First Nations Service Deliveries	Detailed
Loss of agricultural land	Broader community but likely most impactful for near neighbours	Standard
Potential impacts to property values and insurances	Broader community but likely most impactful for near neighbours	Detailed
Decision-Making Systems		
Perceived lack of procedural fairness and exclusion from decision-making	First Nations Near neighbours Interest Groups Regulators and Elected Members	Detailed
Increased participation in decision making	First Nations Near neighbours Interest Groups	Standard

6.2. Landscape and visual amenity

Visual amenity impacts are assessed in terms of the change in visual character they produce (contrast) and the likely sensitivity of the landscape and receivers to the change. Important factors that elevate the impacts include the potential to:

- Create a dominant or surrounding view
- Create an elevated view or one that is otherwise difficult to screen
- Impact on important views, such as the entrance to a town, recreational areas, residential views.
- Contribute to cumulative impacts

6.2.1. Existing environment

The surrounding landscape is characterised by rural farmlands, agricultural fields, Burkes Creek to the north, and the nearby town of Mangoplah (3km to the northwest). The landscape also contains a high voltage transmission line that intersects the Project Site north to south, and the sealed two-lane Holbrook Road to the west.

The surrounding topography is flat with elevation of 275m above sea level (ASL) and remains consistent out west >5km. The elevation increases to the east at approximately 3km within the boundary of the Livingston National Park, with highest elevation at 480m ASL.

Aerial imagery and desktop analysis indicate that there are 12 Non-associated receivers within 2km of the Subject Lot. The nearest Non-associated receiver is R1, located 680m southwest of the Subject Lot.

The distance of the Non-associated receivers (as identified from aerial imagery) within 2km of the Subject Lot have been included in Table 6-4. These Non-associated receivers are rural residential properties and are

considered as sensitive receivers and would be somewhat sensitive to changes in the landscape character given historical disturbances and seasonal changes in the landscape.

The 2km buffer has been selected in this case over the 4km buffer in the *Large-Scale Solar Energy Guideline* technical supplement (DPE, 2022). This is due to the scale of a BESS project being significantly smaller and visually less intrusive than solar projects, and considering the values included in this early scoping consider the entire lot of landowners property to assume the worst case impacts of the BESS.

Table 6-4 Non-associated receivers within 2km of the Subject Lot

Receiver ID	Approximate distance from the Subject Lot (m)	Elevation above sea level (m)	Height of receiver in relation to the site (+ or – m)
R1	680	265	-10
R2	907	266	-11
R3	967	265	-10
R4	892	273	-2
R5	795	266	-9
R6	1372	264	-11
R7	1402 (Associated receiver)	276	+1
R8	1503	295	+20
R9	1501	264	-11
R10	1789	282	+7
R11	1861	264	-11
R12	1960	305	+30
R13	1985	275	0

Preliminary viewshed analysis

The preliminary viewshed analysis shown in

Figure 6-1 considers areas likely and unlikely to receive views of the BESS infrastructure purely based on topography. Screening by existing intervening structures or vegetation is not considered. This tool helps to define the areas that may be screened by topography and those areas with theoretical visibility. In reality, at distance and with the effects of vegetation and other structures, the visibility would be much less than that portrayed in this figure.

Preliminary assessment estimates approximately 41 receivers within 4km of the Project Site may have views of the Project. However, intervening vegetation and infrastructure is expected to reduce the number of potential receivers with views to the Project substantially.

The Preliminary viewshed has a limit of 4km in its assessment and as such visibility drops to 0% after this distance.

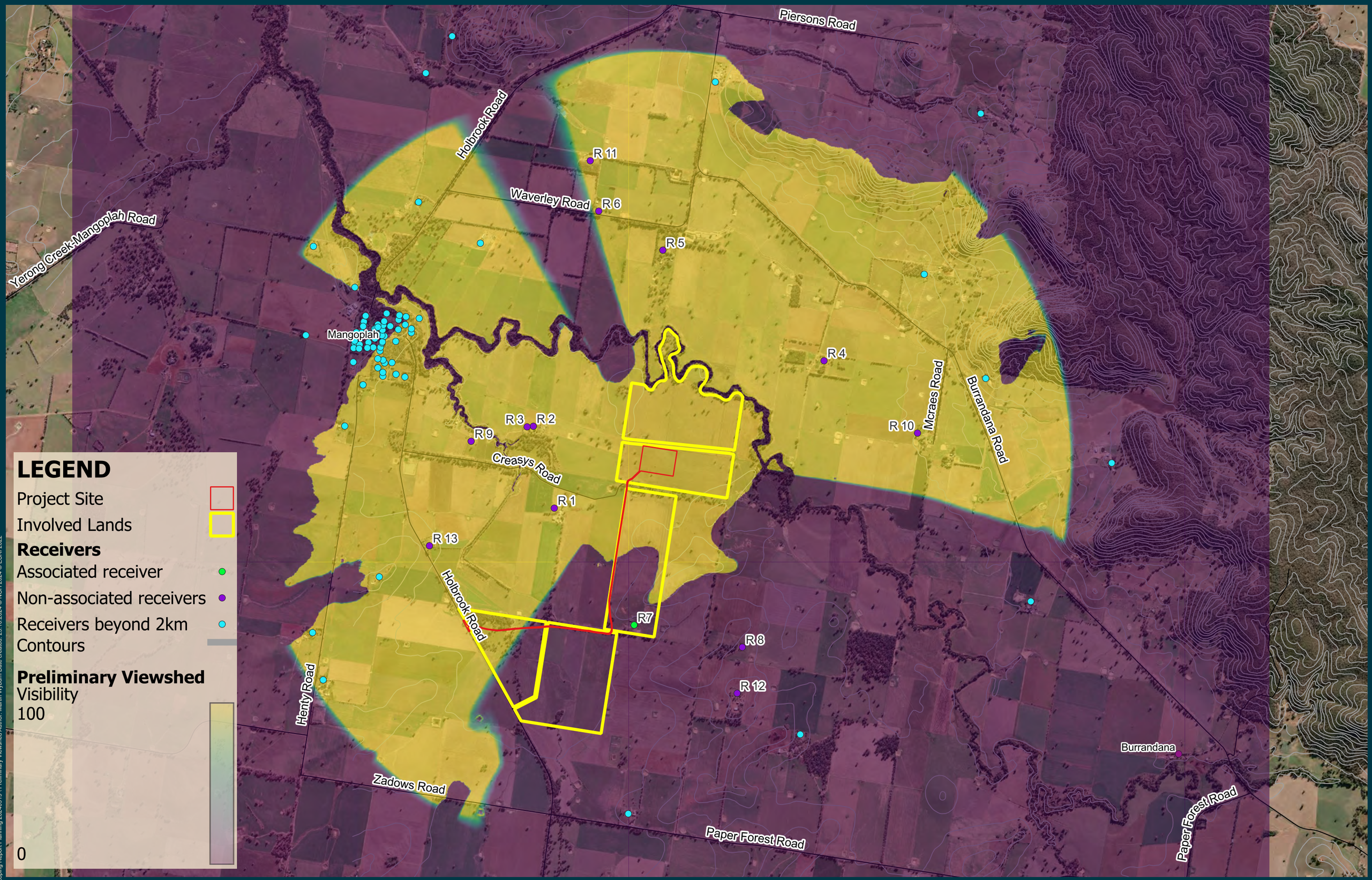
6.2.2. Issues for consideration

Discussions of visual concerns have been raised by non-associated receivers to the Project, and have been outlined in Section 5.2. While there is some existing screening around the Subject Lot boundary and in road reserve for Holbrook Road, and within potentially affected residents' properties, the Applicant is exploring further opportunity for vegetative screening, This will be addressed further in the EIS.

The Project Site may be visible to commuters along Holbrook Road. Generally, these views would be considered of limited duration and broken for passing motorists due to the existing vegetation and would not be considered a high impact in the site's context.

There is limited potential for cumulative visual impacts in regard to a broader change in land use, due to the size of the Project and no additional industrial developments proposed within close vicinity.

An assessment of the level of visual impact would be analysed in more detail as part of the EIS process and would include consideration of the effectiveness of mitigation options. In the absence of BESS specific guidelines, the VIA would reference the *DPE Draft Large-Scale Solar Energy Guideline's Landscape and Visual Impact Assessment Technical supplement* (DPE, 2022). The VIA would identify and include detailed assessments from key viewpoints and sensitive receivers.



Mangoplah BESS

Figure 6-1 Preliminary Viewshed

6.3. Noise and vibration

6.3.1. Existing environment

The Project Site is located in a rural setting with low relief setting at a distance from residential receivers. The main background noise would include traffic noise from Holbrook Road and routine agricultural machinery operation. There are 12 non-associated receivers within 2km of the Project Site.

6.3.2. Issues for consideration

Construction vehicles and machinery during the construction phase would be the most relevant in contributing to noise and vibration impacts.

During operation, noise would be generated at the BESS site primarily through cooling system noise.

A construction and operational noise and vibration assessment would be undertaken as part of the EIS to assess potential noise impacts for the identified sensitive receivers. This would identify maximum noise affected areas and provide the appropriate mitigation measures for each of the sensitive receivers. The report would include an assessment of road traffic noise as a qualitative assessment of offset traffic movements inclusive of a review of existing and future traffic movements for the Project.

The assessment would be undertaken in accordance with the Interim Construction Noise Guideline (Department of Environment & Climate Change, 2009), NSW Noise Policy for Industry (NSW Environment Protection Authority, 2017), Assessing Vibration: A Technical Guideline (Department of Environment and Conservation NSW, 2006) and NSW 'Road Noise Policy' (Department of Environment, Climate Change and Water, 2011). These guidelines aim to protect the majority of sensitive residences and land uses from noise and vibration impacts.

6.4. Biodiversity

6.4.1. Existing environment

Site visits were conducted by NGH ecologists on 22 May 2024 and 3 September 2024. It was determined that the Project Site including the access road corridor contain cropped paddocks, derived grasslands, and woodlands.

Vegetation and fauna habitat

The site visits found the following PCTs were present within the Involved Lands:

- PCT 79 River Red Gum shrub/grass riparian tall woodland or open forest wetland mainly in the upper slopes sub-region of the NSW South Western Slopes Bioregion and western South Eastern Highlands Bioregion.
- PCT 266 White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion.
- PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion.

The Project Site where the BESS will be sited is wholly exotic with no assigned PCT, dominated by cropped canola (*Brassica sp*.) and exotic ground cover. Part of the access road corridor traverses through exotic vegetation with no assigned PCT in the form of a cropped paddock (canola), with the balance traversing

through PCT 277 in two different vegetation condition zones - woodland and low condition derived grassland (refer to Figure 6-2).

PCT 277 is associated with two TECs:

- *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions* (BC Act, critically endangered).
- *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* (EPBC Act, critically endangered).

The site visit indicates it is likely that PCT 277 within the access road corridor meets the criteria for the BC Act and EPBC Act TECs however further assessment would be required to confirm presence or absence.

Hollow Bearing Trees (HBTs) were present in PCT 277 woodland areas. The HBTs contained hollows ranging in size from <5cm - >40cm. The hollows are likely to provide habitat for fauna with evidence of use (scratches on trunks) noted during the site visits. However, proposed access upgrades are unlikely to impact any HBT.

Paper Forest Creek, a 5th order stream, (under the Strahler Stream Order) crosses the access road corridor through Lot 228 DP754557and is mapped as KFH and Biodiversity Values (Biodiverse riparian land). Aquatic habitat was noted at culverts along the access road corridor during the September site visit.

Satellite imagery shows that a lone tree is present within the Project Site (refer to Figure 6-2). However, during the May 2024 site visit it was noted that this tree along with a number of trees within the Subject Lot were no longer present. These trees were removed during the course of agricultural activities by the associated landowner.

Threatened species

Background searches for threatened species were conducted on 14 May 2024. A BioNet search identified 18 threatened fauna and one threatened flora species within 10 km of the Project Site. A PMST search identified 36 threatened fauna and 11 threatened flora species within 10 km of the Project Site. No threatened species were observed during the site visits conducted by NGH ecologists.

6.4.2. Issues for consideration

As the Project is classified as SSD, the Biodiversity Offset Scheme (BOS) will be triggered and BDAR would be required as part of the EIS phase.

The area within the Project Site for siting of the BESS is entirely dominated by exotic vegetation. Further assessment is needed to determine if the exotic vegetation provides habitat for threatened species. The access road corridor contains native and exotic vegetation. The access road corridor contains vegetation that is likely to meet the criteria for BC Act and EPBC Act TECs. Habitat that is likely to be suitable for threatened species is present along the road corridor. Targeted surveys will likely be required for candidate species identified in accordance with the Biodiversity Assessment Method (BAM) 2020.

An assessment of the biodiversity values and the likely biodiversity impacts of the project, in accordance with Section 7.9 of the BC Act, having regard to the BAM will be documented in a BDAR.

All relevant MNES that are likely to be present would be included in targeted surveys with impacts reported upon and offset (where applicable) in the BDAR. The requirements for an EPBC Referral will be assessed following quantification of the impacts to all relevant listed entities. However, referral under the EPBC Act is considered unlikely given the existing access road may be wide enough to support heavy vehicle movements.

LEGEND

- Project Site
- Involved Lands

Vegtation and Habitat

- Aquatic habitat
- Native scattered tree
- Removed tree
- Habitat tree
- PCT 0 - Exotic
- PCT 277 - Grassland
- PCT 277 - Woodland
- Road - Existing
- Road - New

Datum: GDA94 / MGA zone 56

0 0.5 1 km

Mangoplah BESS

Figure 6-2 Preliminary vegetation assessment

6.5. Land use

6.5.1. Existing environment

Land use

Land use in the Project Site is currently mapped as cropping in the NSW statewide Landuse map (refer to Figure 6-3). The area within the Project Site is predominantly cleared of native vegetation and now is dominated by exotic pasture. The access road corridor traverses through several landuses, notably Grazing Native Vegetation (off Holbrook Road and again at the Project Site access), farm buildings/infrastructure, and cropping. The surrounding landuse is dominated by cropping, grazing native vegetation and farm buildings/infrastructure.

There is a historic Exploration License (EL9347) across the site. Whether the Licence is active or not will be explored further in the EIS.

The Project Site sits entirely within the Land and Soil Capability (LSC) Assessment statewide mapping as Class 4 Moderate capability land (refer to Figure 6-4). However, the small area of 10.4ha is not likely to significantly detract from the 387,808ha of Class 4 land in the Wagga Wagga LGA. It is not likely to lead to fragmentation of Class 4 land within the landscape.

Class 4 land has limitations that must be managed to prevent soil and land degradation. However, the limitations can be overcome by proper implemented land management practices and precautionary measures (OEH, 2012).

There is no Biophysical Strategic Agricultural Land (BSAL) mapped within or near the Project Site.

Soils

The Project Site is located within the Riverina Bioregion. The Riverina covers the alluvial fans of the Lachlan, Murrumbidgee and Murray Rivers west of the Great Dividing Range and extends down the Murray (NPWS, 2003). The upper catchment landscape is a series of overlapping, low gradient alluvial fans. The lower tract of the river is a floodplain with overflow lakes. Discharge from past and present streams, control patterns of sediment deposition, soils, landscapes and vegetation.

Alluvial sediments become deeper and older in the western half of the basin, reaching a maximum thickness of about 500m. Basement rocks are the early Palaeozoic sediments and granites of the Lachlan Ford belt, but almost no outcrops exist in the Riverina.

Modern river channels consist mostly of sandy soils and more saline heavy grey and brown clays towards the outer perimeter of the floodplains on the higher rarely flooded terraces Sandy soils also form levees, old channels, dunes and lunettes.

A search of the state eSPADE (NSW DPHI, 2024) soil mapping database identified the Project Site is located within the Mangoplah soil landscape, in which soils are predominantly moderately deep Subnatric Red Sodosols.

Contamination

A search of Section 58 of the *Contaminated Land Act 1997* (CLM Act) found four (4) sites listed within the Wagga Wagga LGA. Of the 4 sites, the closest site is a Former Gasworks, located at 54 Chaston Street, Wagga Wagga, approx. 32km north of the Project Site. There are no sites under Section 60 of the CLM Act for the suburb of Mangoplah.

6.5.2. Issues for consideration

Land use

The Project would involve earthworks, ground disturbance, and change its current usage to energy storage. This would be limited to the Project Site and access road corridor. The impact of the Project on all adjacent land uses, such as residential areas, cropping areas and grazing areas, would be assessed in detail in the EIS and a Land Use Conflict Risk Assessment (LUCRA) would be undertaken to ensure sustainable landuse and mitigate potential impacts across the different landuses.

The Project Site is currently mapped as LSC 4; however, the relatively small area of impact is not considered to fragment the agricultural landscape or impact significantly on LSC 4 available land.

A stand-alone Agricultural Impact Assessment is not required. The EIS will address suitability and the compatibility of the Project, detailing potential impacts on agricultural land.

Soils and contamination

Soil surveys to determine the soil characteristics and consider the potential for salinity, acid sulfate soils, and erosion will occur during the EIS phase, and would provide further detailed analysis of the erosion potential of the soils.

Consideration of best practice soil and erosion impact mitigation s in accordance with *Managing Urban Stormwater: Soils & Construction (Landcom, 2004) and Managing Urban Stormwater: Soils and construction - Volume 2A manual (Landcom, 2008)* and management of potential sources of contamination would be included within the EIS. This would include commitments to ensure the site is rehabilitated for a suitable alternative land use at the end of the project's life.

Creasys Road

Holbrook Road

Henty Road

LEGEND

Project Site

Involved Lands

Road

132kV Transmission Line

NSW Landuse

1.2.0 Managed resource protection

2.1.0 Grazing native vegetation

3.2.0 Grazing modified pastures

3.3.0 Cropping

5.4.0 Residential and farm infrastructure

5.4.1 Urban residential

5.4.5 Farm buildings/infrastructure

5.7.2 Roads

6.5.0 Marsh/wetland

Datum: GDA2020 / MGA Zone 55

NGH

0 0.5 1 km

Mangoplah BESS

Figure 6-3 Land use

Piersons Road
Range Trail
Pine Ridge Trail
Daisy Trail
Livingstone Trail
Skyline Trail
Dentons Trail
Grass Tree Trail
Holbrook Road
Waverley Road
Bulloc Hill Road
Yerong Creek-mangoplah Road
Cox Street
Meraes Road
Mohr Trail
Creasys Road
Grass Tree Trail
Burrandana Road
Livingston State Road
Long Creek Trail
Holbrook Road
Zadows Road
Paper Forest Road
Hillcrest Road
Emu Plains Road

LEGEND

- Project Site
- Involved Lands
- 132kV Transmission Line
- Roads

Land and Soil Capability

- Class 3 - High Capability Land
- Class 4 - Moderate Capability Land
- Class 5 - Moderate-Low Capability Land
- Class 6 - Low Capability Land
- Class 7 - Very Low Capability Land

Datum: GDA2020 / MGA Zone 55

0 1 2 km

Mangoplah BESS

Figure 6-4 Land and Soil Capability

6.6. Hazards

An environmental hazard is a thing or situation which can threaten the environment or human health. Hazards may be natural or artificial or result from the interaction between human activity and the natural environment. Hazards relevant to the Project include risks associated with hazardous materials, electromagnetic fields, and fire.

6.6.1. Hazardous Material – issues for consideration

A 100MW / 400MWh BESS is proposed which is classed as being potentially hazardous under the State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP).

A Preliminary Hazard Analysis (PHA) would be prepared by a specialist as part of the EIS in accordance with *Hazardous Industry Planning Advisory Paper No. 6 'Hazard Analysis'* (DoP, 2011a) and *Multi-level Risk Assessment* (DoP, 2011b). The PHA would detail the potential hazards and controls to mitigate hazards to ensure the fire prevention and protection systems are adequate to protect the BESS. The mitigation and control measures afforded by the Applicant and the proposed construction contractor would reduce the likelihood of these events to manageable risk levels and contain the effects on-site.

6.6.2. Electromagnetic fields - issues for consideration

Electromagnetic Fields (EMFs) are produced within the vicinity of existing powerlines. The 132kV powerline distributes electricity throughout the greater area and feeds into the Wagga Wagga 330kV Substation.

The Project is proposed to connect directly to the 132kV transmission line through an onsite substation and is predicted to produce additional EMFs within their vicinity. EMF levels associated with BESS would be well below the guideline for public exposure and would not be expected to have any adverse impact on human health. However, there can be perceived impacts for nearby residents.

EMF levels of the proposed BESS infrastructure would be assessed as part of the EIS against the *International Commission on Non-Ionizing Radiation Protection (ICNIRP) Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields*. Standard design provisions are expected to ensure impacts comply with relevant guidelines together with communication of potential issues as required.

6.6.3. Bushfire - issues for consideration

The Project Site is located in an area that would be classified as Category 3 vegetation which is the second highest category for bush fire prone land and represents a medium risk of fire. This category is associated with grasslands and semi-arid woodlands in this locality around and within the Project Site.

A stand-alone Bushfire Assessment Report will be completed in the EIS phase. The assessment would demonstrate compliance against the requirements of the *NSW RFS Planning for Bush Fire Protection 2019 (PBP) guide* (NSW RFS, 2019). At this early stage the Project can commit to the minimum 10m Asset Protection Zone buffer from buildings on site. The emergency protocols set out in the EIS would reflect advice from relevant agencies.

6.7. Aboriginal heritage

In NSW, Aboriginal heritage is principally protected by two legislative acts:

- The NSW *National Parks and Wildlife Act 1974* (NPW Act) and its subordinate legislation, the *National Parks and Wildlife Regulation 2019*; and
- The NSW *Environmental Planning and Assessment Act 1979* (EP&A Act)

All Aboriginal objects have blanket protection under the NPW Act.

6.7.1. Existing environment

A search of the Native Tile Register was undertaken on the 4th of September 2024 revealed that no determined Native Title exists over the Project Site.

A search of relevant heritage registers for Aboriginal sites and places provides an indication of the presence of previously recorded sites. A search of the NSW State Heritage Inventory (SHI) database was conducted which indicated that there are five (5) previously recorded Aboriginal Places listed under the NPW Act within the Wagga Wagga LGA and one (1) within the Lockhart LGA. None of these sites are located within or adjacent to the Project Site. The closest—The Rock Nature Reserve (Gazette No. 57)—is located more than 22km to the north west.

The Aboriginal Heritage Information Management System (AHIMS) is a database of previously recorded Aboriginal heritage sites in NSW. A search provides basic information about any Aboriginal sites previously identified within a search area. However, a register search is not conclusive evidence of the presence or absence of Aboriginal heritage sites, as it requires that an area has been inspected and details of any sites located have been provided to add to the register. As a starting point, the search will indicate whether any sites are known within or adjacent to the Project Site.

An extensive search of the AHIMS database was conducted centred on the Project Site on the 4th of September 2024. The AHIMS client service ID was 927212. There were 64 Aboriginal sites and no declared Aboriginal Places recorded in the search area. The results of the AHIMS search are summarised in Table 6-5 below and shown in Figure 6-5. No previously recorded AHIMS sites are located within the Project Site. Artefact sites (isolated finds or artefact scatters) were the most common site type in the search area followed by modified trees (carved or scarred)—a Water Hole, Aboriginal Ceremony and Dreaming, and Aboriginal Resource and Gathering, Aboriginal Ceremony and Dreaming, and Grinding Groove have also been recorded in the region.

Table 6-5 Breakdown of previously recorded Aboriginal sites in the search area.

AHIMS Site Type	Number	%
Artefact	38	59.3%
Modified Tree	23	35.9%
Water Hole	1	1.6%
Aboriginal Ceremony and Dreaming	1	1.6%
Aboriginal Resource and Gathering, Aboriginal Ceremony and Dreaming, Grinding	1	1.6%

AHIMS Site Type	Number	%
Groove		
Total	**64**	**100.00%**

In addition to the above searches there is a range of landscape features within NSW which are generally accepted to have higher potential to contain Aboriginal objects. It is therefore necessary to consider whether there are landscape features of undisturbed land that may contain Aboriginal objects within the Project Site. Landforms with increased Aboriginal heritage potential include:

- Areas within 200m of water;
- Areas located within a sand dune system;
- Areas located on a ridge top, ridge line or headland;
- Areas located within 200m below or above a cliff face; or
- Areas within 20m of a cave, rock shelter or cave mouth.

There are several ephemeral waterways directly within different portions or in proximity of the Involved Lands, ranging from 1st to 5th Strahler order—there is also a single perennial 6th order waterway present. Of these waterways, Burkes Creek (6th order, perennial) and Paper Forest Creek (5th order, ephemeral) are the most significant and are located on the northern and southern boundaries of the Involved Lands respectively.

As a result, despite the fact that no previously registered AHIMS sites are located within the Project Site there is a moderate potential for Aboriginal objects to be present because of the presence of sensitive hydrological landscapes and due to the high number of artefact and modified tree site types in the region.

6.7.2. Issues for consideration

An Aboriginal Cultural Heritage Assessment (ACHA), which includes Aboriginal community consultation with registered stakeholders must be undertaken in conjunction with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010a) and the *Guide to Investigating Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011) to appropriately assess any proposed impacts on Aboriginal objects within the Project Site.

Due to this being an SSD project, Requirement 14 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW, 2010b) should not apply to any possible test excavations which may be required as part of an ACHA.

An ACHA and its associated Aboriginal community consultation will be required to be completed as part of the EIS.

LEGEND

Project Site

Involved lands

Roads

AHIMS sites

Aboriginal Ceremony and Dreaming

Aboriginal Resource and Gathering, Aboriginal Ceremony and Dreaming, Grinding Groove

Artefact

Modified Tree (Carved or Scarred)

Water Hole

Strahler Stream Order

1st Order Stream

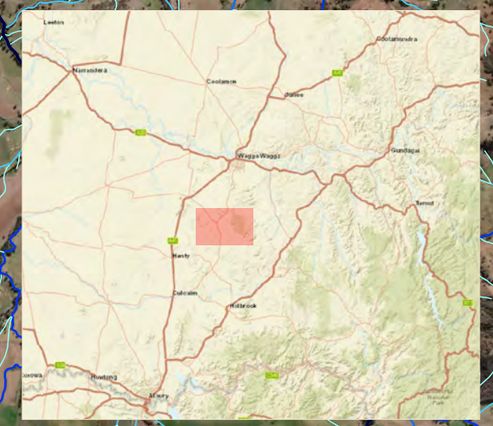
2nd Order Stream

3rd Order Stream

4th Order Stream

5th Order Stream

>5th Order Stream



Datum: GDA2020 / MGA Zone 55

0 2 4 km

Mangoplah BESS

Figure 6-5 Regional AHIMS Registered Sites

6.8. Non-Aboriginal heritage

In NSW, Historic heritage is principally protected by three legislative acts:

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC)
- *NSW Heritage Act 1977*; and
- *NSW Environmental Planning and Assessment Act 1979*

6.8.1. Existing environment

Desktop searches undertaken on the 4th of September 2024 of the relevant historic heritage registers including the Australian Heritage Database, State Heritage Inventory (SHI) and Section 170 registers, as well as LEP maps to identify any items that are currently listed within or adjacent to the Project Site. The Australian Heritage Database (AHD) includes items on the National and Commonwealth Heritage Lists while the SHI includes items on the State Heritage Register and items listed by state agencies and local government. Given that the Project Site is located close to the boundary of the Wagga Wagga and Lockhart LGAs, searches were done for both regions. The results of the Australian Heritage Database search indicated that:

- There are 20 heritage sites listed on the Register of National Estate (a non-statutory archive) within the Wagga Wagga LGA and two (2) listed within the Lockhart LGA. No items of national, Commonwealth or World Heritage significance are located within or adjacent to the Project Site.

The search results of the NSW SHI database indicate that:

- There are 338 previously recorded locally listed heritage sites within the Wagga Wagga LGA and 26 listed within the Lockhart LGA. None are located within the Project Site, however 8 are located within 3km of the Project Site. The closest four locally listed items are:
    - LEP #I159 – Scots Uniting Church, located approximately 2200m west.
    - LEP #I162 – St Michael Archangels Roman Catholic Church, located approximately 2320m west.
    - LEP #I158 – Mangoplah Public School, located approximately 2320m west.
    - LEP #I160 – Mangoplah Hotel, located approximately 2600m west.
- There are four (4) previously recorded sites on the State Heritage Register (SHR) within the Wagga Wagga LGA and one (1) listed within the Lockhart LGA. None of these sites are located within or adjacent to the Project Site. All SHR listed items are within The closest SHR listed item—The Rock Station and yard group (SHR #01268)—is located approximately 19km to the north west.
- There are five (5) Aboriginal Places located within the Wagga Wagga LGA and one (1) listed within the Lockhart LGA. None of these sites are located within or adjacent to the Project Site, the closest—The Rock Nature Reserve (Gazette No. 57)—is located more than 22km to the north west.

The locally listed historic heritage items are shown in Figure 6-6 below.

6.8.2. Issues for consideration

No known heritage places or items were located from a desktop search of the AHD and SHI. Therefore, from a desktop search NGH has not identified any historic heritage places or items within the Project Site. The probability of finding unrecorded but significant historic heritage in the activity area is low but still possible. Further investigation as part of the EIS may be required to confirm that there is no impact to significant historic heritage, and this can be completed during future fieldwork at the site. This fieldwork would occur in tandem with the ACHA.

LEGEND

Project Site

Involved Lands

Heritage

LEP Listed Heritage Items

Roads

Datum: GDA2020 / MGA Zone 55

0 2 4 km

Mangoplah BESS

Figure 6-6 Heritage - State Heritage Inventory

6.9. Access and traffic

6.9.1. Existing environment

The main haulage route the Project would be via the Hume Highway and Holbrook Road. The Project would be located to the east off Holbrook Road, approximately 3km northwest of the township of Mangoplah.

The Hume Highway is a sealed 4 lane dual carriageway (two lanes in each direction) that is maintained by Transport for NSW (TfNSW), The Hume Highway is one of Australia's most significant major highway and links the two state capitals of Sydney and Melbourne. The Hume Highway is an approved route for High Mass Limit (HML) B double vehicles, and also approved for B-triples and AB triples. The road supports a variety of vehicles, from B-doubles, caravan and tourist traffic, and standard freight deliveries between towns and interstate.

Holbrook Road is a dual carriageway maintained by the relevant local Council. From the Hume Highway, the Project is located 26km north. Holbrook Road is an approved 26m B-double route.

There is one indicative haulage route currently under consideration for the Project:

1. Port of Melbourne – 413km via CityLink, Hume Highway, Hume Freeway Offramp, Albury Street, Holbrook Wagga Road, Holbrook Road, unnamed private access road (refer to Figure 6-7).

6.9.2. Issues for consideration

The Project would result in increased traffic on the road network during the construction phase. Activities that would increase the number of vehicles on the road include:

- Construction of the hardstands for the BESS container units.
- Delivery of the key infrastructure components, including BESS containers, HVAC units, switch gear rooms, control room, cabling, fencing, sand and fill.
- Delivery of site personnel.

Over mass and over size vehicles would be required for transportation of BESS infrastructure during construction, in addition to heavy and light vehicles.

During operation, low numbers of light vehicle movements are anticipated to deliver operational staff and maintenance crews to site. The occasional heavy vehicle may be utilised to deliver replacement infrastructure components to the site.

Intersection upgrades, surface upgrades/sealing and other improvements to existing roads may be required to safely access the site. Investigation of impacts to road assets and road safety would require detailed assessment.

A traffic impact assessment will be undertaken by a specialist in consultation with the road's authorities will be undertaken as part of the EIS to determine if intersection or road upgrades are necessary to meet the best practice guidelines for road and intersection design which are:

- *Austroads Guide to Traffic Management Part 12 and TfNSW supplement*
- *Austroads Guide to Road Design and TfNSW supplements*
- *TfNSW Guide to Traffic Generating Developments*
- *Unsealed Roads Manual: Guidelines to Good Practice (2009).*

The Project Site includes site access off Holbrook Road, and further investigations during the EIS stage will inform the required road treatments.

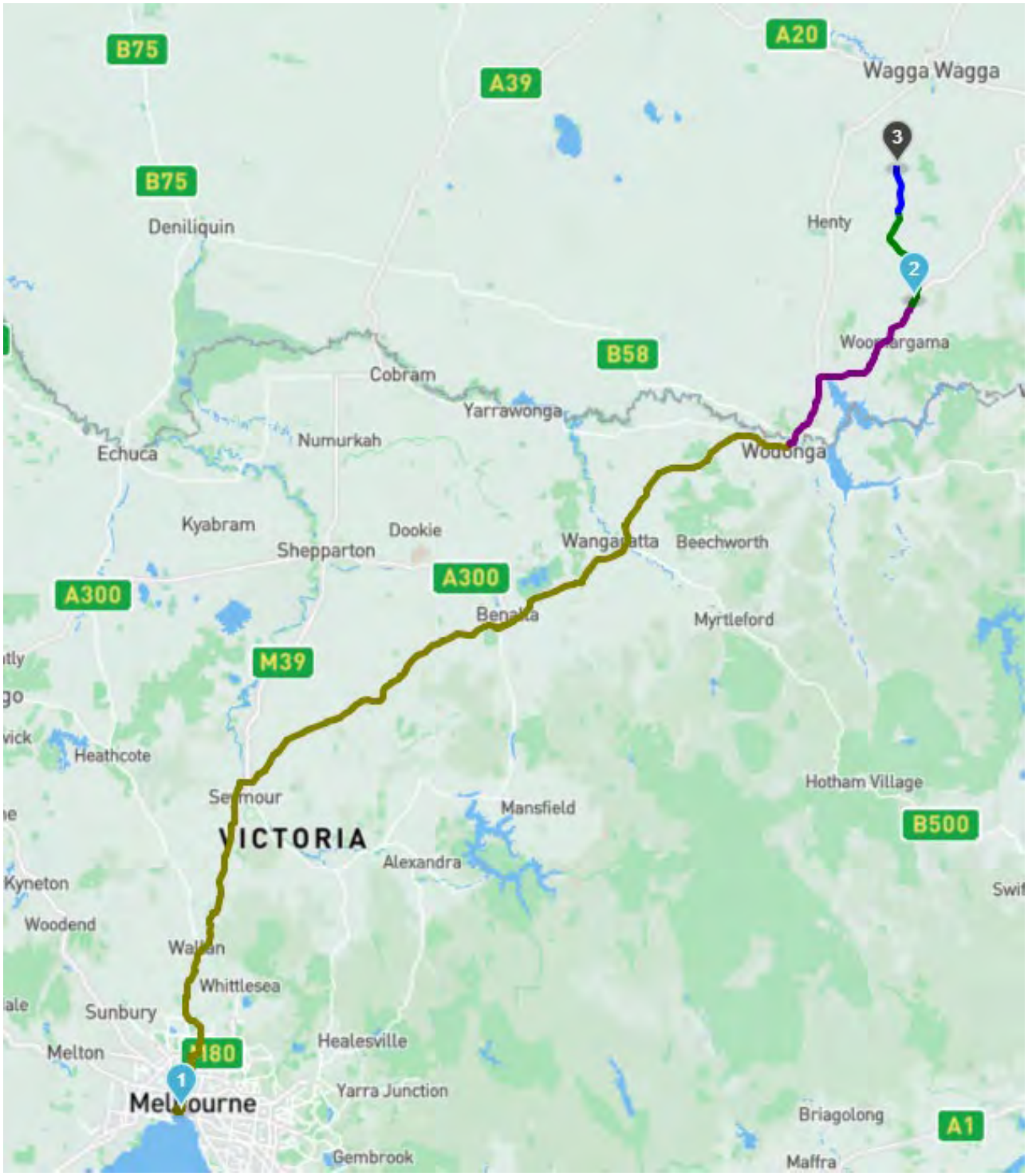


Figure 6-7 Indicative route from Port of Melbourne to site. Route Planner Tool ID 1V9CD-5 v1

6.10. Air Quality

The closest monitoring station to the Project is located in Wagga Wagga, adjacent to the Murrumbidgee Turf Club, off Beckwith Street (approximately 32km north). As of September 2024, the air quality in Wagga Wagga is rated Good, with 7 day averages for particulate matter, Ozone, and Nitrogen dioxide recorded online here: Current air quality in Wagga Wagga North | Air Quality NSW (NSW DPHI, 2024).

The air quality in Wagga Wagga is generally expected to be typical of that found in a regional city setting, with higher population numbers than that of the surrounding areas. Conditions in Mangoplah are predicted to be higher quality. Existing sources of air pollution in such a location is expected to comprise of dust from agricultural practices and some road-based emissions from vehicles travelling on nearby local roads. During colder months, there may be a minimal increase in air contaminants due to some emissions from the operation of solid fuel heating.

A search of the National Pollutant Inventory (NPI) on the 20 September 2024 indicated that there are 18 listed sources in the NPI for the Wagga Wagga LGA. The closest to the subject land is the Gregadoo Waste Management Centre, approx. 22.9km north east. These emissions are not expected to affect the Project Site.

6.10.1. Issues for consideration

A standard assessment would be undertaken in the EIS. The EIS would include mitigation measures to manage dust emissions.

6.11. Waste management

6.11.1. Issues for consideration

Project would generate several waste streams and utilise a variety of materials during the construction phase, including:

- Excavated materials (soil)
- Packaging from BESS components and associated infrastructure
- Vegetation.

A Waste Management Plan would be incorporated into the Construction Environmental Management Plan (CEMP), applying the principles to avoid, re-use and recycle to minimise wastes. Cleared vegetation would be recycled as fauna habitat or mulch where possible.

All waste produced by the Project will be classified, handled and managed in accordance with the Waste Classification Guidelines – Part 1 Classifying Waste (NSW EPA, 2014) and Resource Recovery Orders and Exemptions issued by EPA guided by the Waste Classification Guidelines Part 1: Classifying waste and Resource Recovery Orders and Exemptions issued by NSW EPA.

Priority will be given to reusing materials on site or recycling if reusing is not possible.

During the Project's operational stage, there would be minimum waste. Any waste generated during operation would be dealt according to relevant guidelines.

Decommissioning of the site would generate a large volume of waste. The waste would involve batteries, inverters, cabling and any other items used for construction of the BESS.

The Wagga Wagga Lithium-Ion Battery Recycling Facility is currently in the planning phase of development and may be operational for the decommissioning phase of the Project. This will be investigated further in the EIS phase, along with other suitable reuse / recycling facilities. The EIS will also study waste management in detail and advise on mitigating impacts resulting from this waste.

6.12. Cumulative impacts

6.12.1. Existing environment

Cumulative impacts relate to the combined potential effects of different impact areas of the Project as well as the potential interaction with other Projects in the local area. They may occur concurrently or sequentially.

The relevant cumulative impacts are those associated with other known or foreseeable developments occurring in proximity to the Project. Cumulative impacts have been considered possible for projects within 50km of the Project (regional scale). However, the scale of cumulative impacts occurs at different scales as detailed in Table 6-6.

Table 6-6 Scale of cumulative impacts

Impact	Scale	Justification
Social and economic	Regional	Regional impacts on accommodation, employment and service providers
Landscape and visual	Nil	The Project will have negligible cumulative impacts on landscape and visual amenity, being the only development in the immediate vicinity
Noise and vibration	Nil	The Project will have no cumulative impacts on noise and vibration, being the only development in the immediate vicinity
Biodiversity	Project Site	The Project will have negligible impacts on biodiversity
Land use	Nil	The Project will have negligible impacts on land use
Hazards	Nil	The Project will have no impacts on hazards
Aboriginal Heritage	Local	Localised impacts with proposed and existing projects
Non-aboriginal heritage	Nil	The Project will have no impacts on non-aboriginal heritage
Access and traffic	Regional	Regional impacts on traffic and access
Air quality	Nil	The Project will have no impacts on air quality
Waste management	Nil	The Project will have no impacts on waste management
Water	Nil	The Project will have no impacts on water

As detailed in Table 3-1 above, construction is expected to commence in 2027. The Project will commence operations in 2028/29 and will operate for approximately 20 years. Potential cumulative impacts associated with the construction and operation of the Project are detail below in Table 6-7.

Table 6-7 Cumulative impacts associated with timeline

Stage	Project timeframe	Likely impact	Duration	Potential cumulative impact
Assessment	2024	Minor	Temporary	Social and economic
Approved	2025	Nil	Nil	Nil
Pre/construction	2027	Moderate to major	Temporary	Social and economic Access and traffic Air quality

Stage	Project timeframe	Likely impact	Duration	Potential cumulative impact
Operation	2028/29	Minor	Operations	Social and economic
Decommissioning	2048/49	Moderate	Temporary	Social and economic Access and traffic Air quality

Major Projects undergoing assessment or determined since 1 January 2020 are listed on the Major Projects Register within the Wagga Wagga LGA and surrounding area (i.e. within 50km - current status as of 26 September 2024.) are show in Table 6-8.

Table 6-8 Nearby Major Projects

Project	Stage	Status	Distance from Project (km)	Indicative timeframe	Specific cumulative impacts to consider	Project overlap
Maxwell Downs Solar Farm	Planning	Assessment	10km	Construction unknown Operational period 35 years	Social and economic Access and traffic	Construction, operation and decommissioning overlap
Belhaven BESS	Planning	Assessment	21km northeast	Construction 2025/26 Operational period 20 years	Social and economic Access and traffic	Construction, operation and decommissioning overlap
Gregadoo Solar Farm	Approved	Determination	22km northeast	Determined 2018 Construction unknown Operational period 30 years	Social and economic Access and traffic	Construction, operation and decommissioning overlap
Uranquinty Solar Farm	Withdrawn	Withdrawn	25km northwest	N/A	Nil	N/A
Wagga Wagga Lithium-Ion Battery Recycling Facility	Planning	Assessment	30km northeast	Construction 2024 Operational period unknown	Access and traffic Social and economic	Potential operation overlap
Bomen Solar Farm	Approved	Operational	40km north	Determined 2018 Operation 2020 Operational period 30 years	Social and economic	Operation overlap

Project	Stage	Status	Distance from Project (km)	Indicative timeframe	Specific cumulative impacts to consider	Project overlap
Mates Gully Solar Farm	Withdrawn	Withdrawn	41km north west	N/A	Nil	N/A
Culcairn Solar Farm	Approved	Determination	42km southwest	Determined 2021 Construction 2024 (underway) Operational period 30 years	Social and economic	Operation overlap
Walla Walla Solar Farm	Approved	Construction	48km southwest	Determined 2020 Construction 2024 (underway) Operational period 30 years	Social and economic	Operation overlap

6.12.2. Issues for consideration

The Projects detailed within Table 6-8and shown in Figure 2-2 are considered to potentially have cumulative impacts in relation to social and economic, access and traffic and air quality impacts.

Table 6-9 below within the *Cumulative Impact Assessment Guidelines for State Significant Project*s (NSW Department of Planning, Industry and Environment, 2021) detailed the level of cumulative assessment required, while Table 6-10 provides a summary of the cumulative impacts to be assessed. Table 6-9 Level of cumulative assessment required

Assessment	Description
Detailed	The project may result in significant impacts on the matter, including cumulative impacts.
Standard	The project is unlikely to result in significant impacts on the matter, including cumulative impacts.
N/A	No potential overlap in impacts between a future project (e.g. Project A) and the proposed project that would warrant any consideration in the cumulative impact assessment

Table 6-10 Cumulative Impact Assessment Scoping Summary Table

Project	Potential overlap		
	Social and economic	Landscape and visual	Access and traffic
Maxwell Downs Solar Farm			
Belhaven BESS			
Gregadoo Solar Farm			
Uranquinty Solar Farm			
Wagga Wagga Lithium-Ion Battery Recycling Facility			
Bomen Solar Farm			
Mates Gully Solar Farm			
Culcairn Solar Farm			
Walla Walla Solar Farm			

Potential cumulative impacts would be assessed within the EIS in line with the *Cumulative Impact Assessment Guidelines for State Significant Project*s (NSW Department of Planning, Industry and Environment, 2021).

The timing of works associated with the proposed developments nearby would be monitored throughout the EIS stage to ensure appropriate mitigation measures are implemented, particularly in relation to construction traffic and pressure on local services and facilities within Wagga Wagga LGA and the broader region.

6.13. Water

6.13.1. Existing environment

There is one (1) waterway mapped across the access road corridor. Paper Forest Creek, a 5th order stream, (under the Strahler Stream Order) crosses the access road corridor through Lot 228 DP754557and is mapped as KFH and Biodiversity Values (Biodiverse riparian land). Burkes Creek, a >5th order stream is located immediately north of the Project Site and is mapped as Key Fish Habitat (KFH). The Project Site is not mapped as being Flood Prone Land (refer to Figure 6-9). National Groundwater Information System mapping indicate that are no groundwater bores located on site. The Project Site access road traverses across mapped terrestrial groundwater dependent ecosystem. There are no mapped areas of acid sulphate soil presence or notable salinity.

6.13.2. Issues for consideration

Due to the presence of waterway traversing the access road corridor, considerations for the design and construction of a watercourse crossing should be as per the Controlled activities – Guidelines for watercourse crossings on waterfront land (NSW DPE, 2022). Detailed assessment including hydrological hazard modelling would guide infrastructure placement, to protect the hydraulic function of waterways and prevent erosion. Flooding hazard on site would be undertaken in the form of a hydrology impact assessment undertaken by a suitably qualified hydrologist.

Construction of the Project would require water supply for different activities in the form of both potable and non-potable water. Water quantities and sources required for construction and operation would be detailed in the EIS as part of the Project description. Early engagement with Riverina Water should be explored further in the EIS.

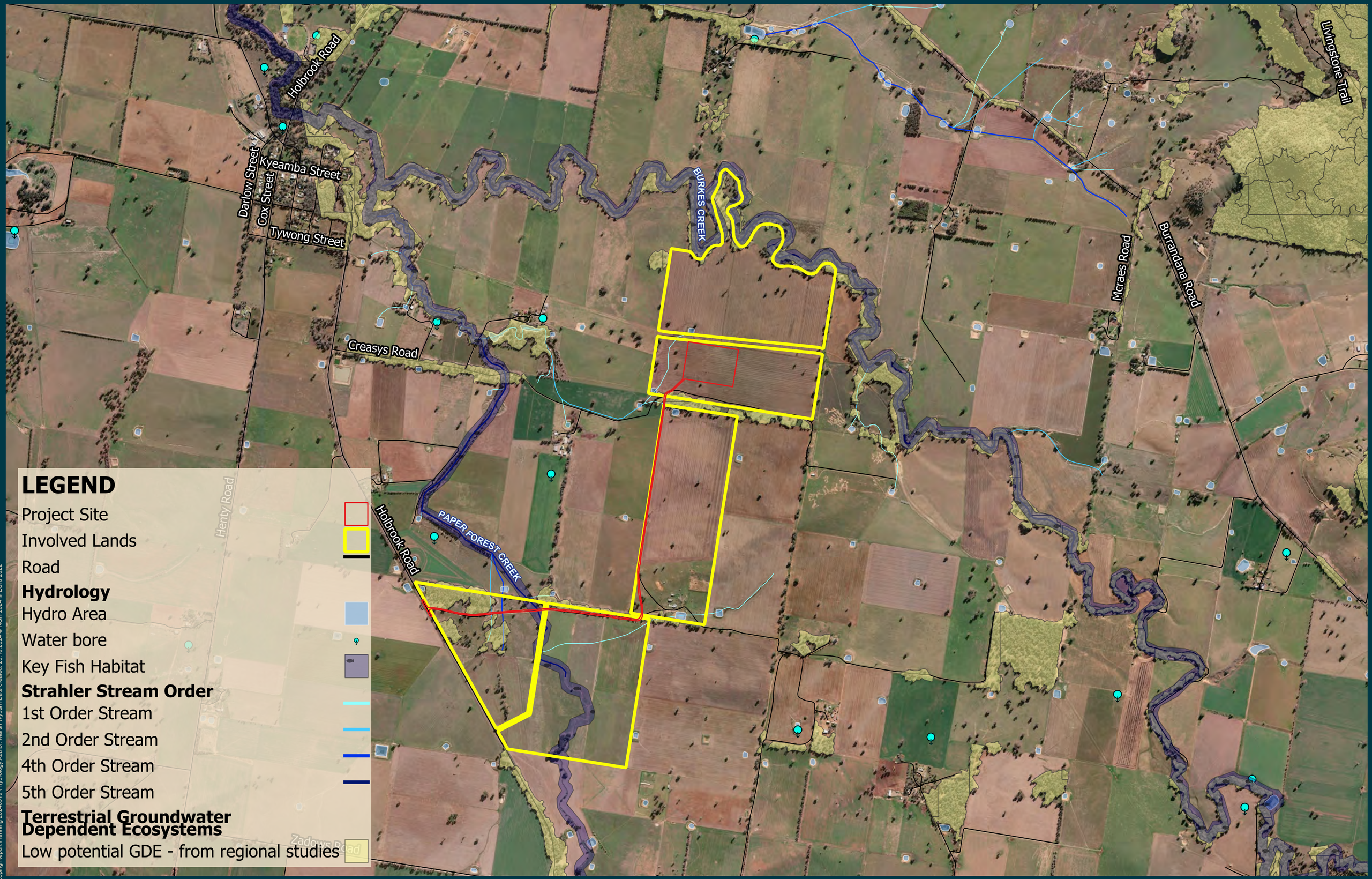
Water balance for the site and local area would be investigated during the EIS studies.

The EIS would include mitigation measures to manage surface water, erosion, groundwater resources, riparian lands, and any contamination risks (e.g. exposure acid sulphate soils).

Table 2: Riparian corridor matrix

Stream order	VRZ	RC offsetting for non-RC uses	Cycleways and paths	Detention Basins		Stormwater outlet structures and essential services	Stream realignment	Road crossings		
				Only within 50% outer VRZ	Online			Any	Culvert	Bridge
1st	10m	●	●	●	●	●	●	●		
2nd	20m	●	●	●	●	●		●		
3rd	30m	●	●	●		●			●	●
4th +	40m	●	●	●		●			●	●

Figure 6-8 Minimum waterway crossings as per the Guidelines for Waterfront Land



Datum: GDA2020 / MGA Zone 55

NGH

0 0.5 1 km

Mangoplah BESS

Figure 6-9 Hydrology

6.14. Matters not requiring further assessment

The environmental matters below require no further assessment in this Project. These additional matters have been considered in reference to the matters included in Appendix B of the State significant development guidelines – preparing a scoping report (DPE, 2022). Refer to Table 6-11.

Table 6-11 Impact matters requiring no further assessment

Impact	Description
Marine Port facilities	The Project does not propose a modification to port or airport facilities. It is noted that materials deliveries via ports will be assessed under the following impact headings: • Traffic and access (refer to Section 6.9) • Hazards (refer to Section 6.6)
Rail facilities	The Project does not propose a development that directly impacts rail facilities.
Odour	The Project does not propose a development that would be likely to produce odours.
Coastal hazards	The Project is not located nearby any coastal areas and as such does not address coastal hazards.
Dams safety	The project does not propose to construct, maintain or decommission a dam.

7. Conclusion

This Scoping Report has outlined and established the planning and general environmental context of the Project. The Project would be assessed under Part 4 of the EP&A Act and classed as SSD under the Planning Systems SEPP.

The Project Site is zoned RU1 – Primary Production under the Wagga Wagga LEP and is located in close proximity to an existing 132kV transmission line that transects the Project Site north to south. The location is considered highly appropriate for the BESS in this context. The location also avoids the need for third-party easements and long transmission lines.

In addition to providing an additional income stream to the associated landholder, the Project is expected to create up to 60 jobs during construction. The type of workers required aligns well with the local skill set, including primarily civil works.

The Scoping Report has categorised the environmental impacts requiring further assessment in the EIS as Table 7-1.

Table 7-1 Matters requiring further assessment

Matters requiring detailed assessment	
• Social and economic	• Visual
• Noise and vibration	• Biodiversity
• Land capability	• Hazardous materials
• Aboriginal heritage	• Access and traffic
• Cumulative impacts	• Bushfire
• Hydrology	
Matters requiring standard assessment	
• Contamination	• Water usage
• EMF	• Non-Aboriginal heritage
• Air quality	• Waste management

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Appendix A Scoping summary table

Group	Matter	Level of assessment	CIA[3]	Engagement	Scoping report reference	Key government plans, policies and guidelines
Social	Health, wellbeing and economic impacts	Detailed	Yes	Specific	Section 6.1	• Social Impact Assessment Guidelines for State Significant Projects (Department of Planning Industry and Environment, 2021) • Undertaking Engagement Guideline for State Significant Projects (Department of Planning Industry and Environment, 2021).
Amenity	Visual	Detailed	No	Specific	Section 6.2	• DPE Draft Large-Scale Solar Energy Guideline (DPIE, 2021) • Guideline for Landscape Character and Visual Impact Assessment, Environmental impact assessment practice note EIA-N04 (TfNSW, 2020)
Amenity	Noise and vibration	Detailed	No	General	Section 6.3	• Construction Noise Strategy (Transport for NSW, 2012) • Interim Construction Noise Guideline (Department of Environment, Climate Change and Water, 2009) • NSW Industrial Noise Policy (Environment Protection Authority, 2000) • NSW Road Noise Policy (Environment Protection Authority, 2011) • Assessing Vibration: A Technical Guideline (Department of Environment and Conservation, 2006) • German Standard DIN 4150-3: Structural Vibration – Effects of Vibration on Structures • Environmental Noise Management Assessing Vibration: A Technical

[3] Cumulative Impact Assessment: CIA

Group	Matter	Level of assessment	CIA[3]	Engagement	Scoping report reference	Key government plans, policies and guidelines
						Guideline (Department of Environment and Conservation, 2006).
Biodiversity	Terrestrial flora and fauna	Detailed	Yes	Specific	Section 6.4	• NSW Biosecurity Strategy 2013-2021 • Biodiversity Assessment Method (BAM) (NSW Government, 2020).
Land	Land capability and agricultural impact	Detailed	No	General	Section 6.5	• Agricultural Land Use Mapping Resources in NSW • The Land and Soil Capability Scheme (Office of Environment and Heritage, 2012). • LEP land zoning
Hazards and risks	Hazardous materials (BESS)	Detailed	No	General	Section 6.6.1	• State Environmental Planning Policy (Resilience and Hazards) 2021 • Hazardous Industry Planning Advisory Paper No. 6 'Hazard Analysis' (DoP, 2011a)
Hazards and risks	EMF	Standard	No	General	Section 6.6.2	• NSW Large-scale solar energy guideline for State Significant Development (Department of Planning and Environment, 2018). • Non-Ionizing Radiation Protection (ICNIRP) Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields.
Hazards and risks	Bushfire	Detailed	Yes	Specific	Section 6.6.3	• Planning for Bushfire Protection (NSW Rural Fire Service, 2019).

Group	Matter	Level of assessment	CIA[3]	Engagement	Scoping report reference	Key government plans, policies and guidelines
Heritage	Aboriginal	Detailed	No	Specific	Section 6.7	• Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW 2011 • Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 • Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW 2010.
Heritage	Non-Aboriginal	Standard	No	General	Section 6.8	• Commonwealth EPBC 1.1 Significant Impact Guidelines – Matters of National Environmental Significance (Commonwealth of Australia, 2013) • Commonwealth EPBC 1.2 Significant Impact Guidelines – Actions on, or impacting upon, Commonwealth Land and Actions by Commonwealth Agencies (Commonwealth of Australia, 2013)
Access	Traffic	Detailed	Yes	Specific	Section 6.9	• Austroads Guidelines for Road Design (Austroads) • Austroads Guidelines for Traffic Management (Austroads) • Guide to Traffic Management – Part 3 Traffic Studies and Analysis (Austroads, 2013).
Water	Hydrology, water quantity	Detailed	No	General	Section 6.13	• Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018) • NSW Water and River Flow Objectives (NSW Government, 2006) • Floodplain Risk Management Guidelines (Department of Environment and Climate Change, 2016) • Floodplain Development Manual: The management of flood liable land (NSW Government, 2005) • Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom,

Group	Matter	Level of assessment	CIA[3]	Engagement	Scoping report reference	Key government plans, policies and guidelines
						2004) • Managing Urban Stormwater: Soils and Construction Volume 2 (Department of Environment and Climate Change, 2008) • NSW State groundwater dependent ecosystem policy (Department of Land, Water and Climate, 2002). • NSW Government's Floodplain Development Manual (2005).
Cumulative impacts	Cumulative impacts	Detailed	No	General	Section 6.12	• *Cumulative Impact Assessment Guidelines for State Significant Project*s (NSW Department of Planning, Industry and Environment, 2021).
Air quality	Air quality	Standard	No	General	Section 6.10	• Climate change and energy transition policy's as per Section 2.3
Waste	Waste	Standard	No	General	Section 6.11	• Waste Classification Guidelines – Part 1 Classifying Waste (NSW EPA, 2014)

Appendix B Compliance checklist - Scoping

SSD guidelines –preparing a scoping report (DPE, 2022)	Scoping report reference
Introduction	
Applicant's details, including ABN and address	Section 1.4
Simple but accurate description of the project including: • a statement of the objectives of the development • site information including address and lot details • a map of the site in its regional setting.	Section 1.1
Background to the project • any relevant history • key strategies that will be adopted to avoid, minimise or offset the impacts of the project to the extent known at the scoping stage.	Section 1.6 Section 3.4
Description of any related development, including any existing or approved development (including any existing use rights or continuing use rights) that would be: • incorporated into the project, allowing some or all of the existing development consents or rights for this development to be surrendered if the SSD project is approved and the approved project to operate under a single SSD development • operated in conjunction with the project under a separate development consent or approval. • development that is required for the project but would be subject to a separate assessment (e.g. upgrades to ancillary infrastructure, approvals for subsequent stages of the project).	Section 1.5
Strategic context	
This section should identify at a high level the key strategic issues that are likely to be relevant to the justification and evaluation of the project and that will be investigated in more detail in the EIS. Key strategic issues may include: the justification of the project, including whether any government strategies, policies or plans (such as environmental planning instruments) provide strategic support for the project.	Section 2.1 Section 2.3 Section 2.4
relevant plans that establish a regional or local land use planning context for the	Section 2.4

SSD guidelines –preparing a scoping report (DPE, 2022)	Scoping report reference
project, including if the project is linked to a planning process that has already addressed environmental impacts relevant to the project	
key features of the site or surrounds that could affect or be affected by the project, including: • the local and regional community, having regard to land ownership and uses in the area and the proximity of any population centres or residences to the site • important natural or built features, such as National Parks, scenic landscapes, conservation areas, culturally important landscapes, and major infrastructure (e.g. roads, railway lines, airports, ports, pipelines, transmission lines and water storage and treatment) • key risks or hazards for the project, such as flooding, bushfire prone land, contaminated land, steep slopes and potential landslips, mine subsidence prone land, coastal hazards and climate change.	Section 2.1 Section 2.2
whether the project is likely to generate cumulative impacts with other relevant future projects in the area (see the Department's Cumulative Impact Assessment Guidelines for State Significant Projects)	Section 2.5
identifying whether the applicant has entered into any agreements with other parties to mitigate or offset the impacts of the project, such as: • voluntary planning • negotiated agreements with landowners, including any terms of these agreements that are relevant to the assessment of the impacts of the project (see the Department's Voluntary Land Acquisition and Mitigation Policy) • any benefit-sharing schemes	Section 2.6
Project **This overview should provide further detail on the following key aspects of the project:**	
the project area, including the area likely to be physically disturbed by the project	Section 3.1
the conceptual physical layout and design of the project, including any mitigation measures that will be built into the design of the project (e.g. a noise barrier) to the extent that these are known at the scoping stage	Section 3.1
the main uses and activities that would be carried out on site as well as the	Section 3.1

SSD guidelines –preparing a scoping report (DPE, 2022)	Scoping report reference
materials and products that would be transported to and from the site	
the likely timing of the delivery of the project, including: • any stages of the project • the phases of the project (e.g. site preparation, construction, operations, and where relevant, decommissioning and rehabilitation) • the sequencing of any stages and phases of the project over time, identifying the periods when the greatest impacts are likely to occur	Section 3.1
The overview in this section should also clearly identify: • where relevant or known at the scoping stage, and depending on the type of development, those aspects of the project where some flexibility may need to be incorporated into the design of the project to allow the final design of the project to be refined or changed over time within any strict limits set by the project description in the EIS, and without further approval	Section 3.1
where known, any restrictions or covenants that apply to the land	Section 3.3
This section should also include a high-level analysis of feasible alternatives considered having regard to the objectives of the development, including the consequences of not carrying out the development. The analysis of alternatives should explain how the project has ended up in its current form. It should summarise the key alternatives that have been considered and rejected (e.g. alternative ways of achieving the objectives of the development and / or alternative siting, designs, and mitigation measures) and the reasons why they were rejected. Where features of the project such as the site location and layout have been finalised through a masterplan or Concept Development Application, these should not be analysed further in the consideration of alternatives.	Section 3.4
Statutory Context	
This section should provide a simple overview of the key statutory requirements for the project, having regard to: • the EP&A Act and EP&A Regulation • other relevant legislation • relevant environmental planning instruments, planning agreements and coastal management programs under the Coastal Management Act 2016 • relevant approvals (e.g. concept plan approvals, staged DA consents) These statutory requirements should be grouped into the categories listed in Table 1 and summarised in a table (see examples in the Department's State Significant Development Guidelines – Preparing an Environmental Impact Statement).	Section 4

SSD guidelines –preparing a scoping report (DPE, 2022)	Scoping report reference
Community engagement	
Identify what engagement has already been carried out that is relevant to setting the SEARs, this may include: • community engagement that has been carried out by other parties that is relevant to the project • any actions taken by the applicant to identify and engage with key groups or individuals within the community that may have an interest in the project • any actions taken by the applicant to inform, consult or engage with the community during the development of the project or preparation of the scoping report Engagement should also be undertaken having regard to the community participation objectives in the Department's Undertaking Engagement Guidelines for State Significant Projects.	Section 5
Summarise the key findings of any community engagement carried out and give an early indication of community views on the project using suitable maps, graphics and tables.	Section 5
Identify the likely level of community interest in the project and the geographic extent of this interest (e.g. local: < 5km from the site; regional: 5-100km from the site or state: > 100km from the site).	Section 5
Group the community views on the project into one of the following categories: • Strategic context (e.g. key natural/built features that could be impacted, and the potential cumulative impacts) • Alternatives that may be considered • Statutory issues • Community engagement during the preparation of the EIS • Key matters to be assessed during the EIS • Issues beyond the scope of the project or not relevant	Section 5
Summarise the community engagement that will be carried out during the preparation of the EIS, having regard to the findings of any community engagement carried out during scoping and the community participation objectives in the Department's Undertaking Engagement Guidelines for State Significant Projects including: • identify the key stakeholders (councils, government agencies, special interest groups, people living close to the site) for further engagement, to the extent that this will be known at the scoping stage • describe what actions will be taken to identify and engage with other	Section 5

SSD guidelines –preparing a scoping report (DPE, 2022)	Scoping report reference
interested stakeholders during the preparation of the EIS • describe the key actions that will be carried out to: o keep the community informed about the project o obtain feedback from the community on the project o engage with certain stakeholders on the detailed assessment of key matters • demonstrate that these actions are consistent with the community participation objectives in the Undertaking Engagement Guidelines for State Significant Projects • describe how the effectiveness of this engagement will be monitored, reviewed and adapted over time to encourage community participation in the project	
Proposed assessment of impact	
Matters that should be considered by the project: access (e.g. traffic and transport), air quality, amenity (e.g. noise, visual), biodiversity, built environment, economic, hazards and risk (e.g. bushfire, flooding, waste), heritage (Aboriginal and non Aboriginal), land, social, water. These specific matters can be divided further into different components of the specific matter, where relevant	Section 6
Key factors that should be considered for each matter: • the scale and nature of the likely impacts of the project and the sensitivity of the receiving environment • whether the project is likely to generate cumulative impacts with other relevant future projects in the area • the ability to avoid, minimise and/or offset the impacts of the project, to the extent known at the scoping stage • the complexity of the technical assessment of the project It is important to note that the applicant is not required to carry out a detailed assessment of each factor and document this assessment in the scoping report. This should be done in the detailed assessment of the project in the EIS	Section 6
Appendix – Scoping summary table	
Include a scoping summary table which groups the matters requiring further assessment in the EIS by the level of assessment required, and identify: • whether any cumulative impact assessment is required, and the likely level of this assessment (e.g. standard or detailed)	Appendix A

SSD guidelines –preparing a scoping report (DPE, 2022)	Scoping report reference
• whether any specific community engagement will be carried out on the matter during the preparation of the EIS • the relevant government plans, policies and guidelines that will be considered during the assessment of the impacts of the project on the matter • the relevant section of the scoping report where the assessment of the impacts on the matter are discussed in more detail.	
Document the matters requiring no further assessment in the EIS in a table in the scoping report. This table should identify each matter and explain why no further assessment is necessary	Table 6-11

Appendix C Community engagement

Prepared for Samsung C&T Renewable Energy Australia Pty Ltd (SREA)

Community Engagement Summary Report

Mangoplah Battery Energy Storage System - Scoping

October 2024

Project Number: 240052

Document verification

Project Title:	Mangoplah Battery Energy Storage System - Scoping
Project Number:	240052
Project File Name:	240052 Mangoplah BESS Community Engagement Summary Report

Revision	Date	Prepared by	Approved by
Draft 1	25/10/2024	Amy Mahon	Bree Schubach
Final	29/10/2024	Amy Mahon	Stephan Mitchell (SREA)

NGH Pty Ltd is committed to environmentally sustainable practices, including fostering a digital culture and minimising printing. Where printing is unavoidable, NGH prints on 100% recycled paper.

We acknowledge the Traditional Owners of this land and pay our respect to Elders past, present and emerging. We recognise that the First Nations peoples of Australia have traditionally managed the resources of this land in a sustainable way, and that they are the original custodians of the Australian environment.

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Acronyms and abbreviations

ACHA	Aboriginal Cultural Heritage Assessment
BESS	Battery Energy Storage System
CBS	Community benefit scheme
CSES	Community and Stakeholder Engagement
CSP	Community Strategic Plan
DPHI	Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Statement
ES	Engagement strategy
ha	hectares
km	kilometres
LALC	Local Aboriginal Land Council
LSC	Land and social capability
LEP	Local Environment Plan
LGA	Local government area
m	metres
MW	Megawatt
NEM	National Energy Market
NSW	New South Wales
REZ	Renewable Energy Zone
SSD	State Significant Development
WWCC	Wagga Wagga City Council
VIA	Visual Impact Assessment
VPA	Voluntary Planning Agreement

Executive summary

Samsung C&T Renewable Energy Australia Pty Ltd (The Applicant) is proposing the development of the Mangoplah Battery Energy Storage System (the Project). The Project would involve the construction, operation and decommissioning of a Battery Energy Storage System (BESS) with a capacity of up to approximately 100 Megawatts (MW) / 400MWh (4 hours).

The Project would be located within the Wagga Wagga City Council (WWCC) Local Government Area (LGA), approximately 3.1 kilometres (km) east of the township of Mangoplah, and approximately 30.6 km south of the regional city of Wagga Wagga, New South Wales (NSW). The Project would connect to the national electricity network via the existing 132kV transmission line adjacent to the Project.

The Mangoplah BESS would assist in the stabilisation of the national energy grid, reduce energy wastage, ease peak demand, and support Australia's transition to renewable energy. The Project is anticipated to produce approximately 60 jobs during the peak construction period, with 1-2 full-time ongoing roles expected once operational.

Methodology

A comprehensive stakeholder analysis was developed in August 2024 to inform the Community and Stakeholder Engagement Strategy (CSES). Engagement activities during the Scoping Phase of the NSW SSD application process for the Project focused on understanding community sentiment, identifying potential impacts and possible mitigation measures, and preparing engagement recommendations for the EIS. Engagement methods included two rounds of posted letters, emails, phone calls, Project materials (Fact Sheet and FAQ), an online survey, and face-to-face and online meetings.

Community and Stakeholder Feedback

Feedback was gathered and analysed over a period of eight (8) weeks. This included in-person conversations with approximately 10 non-associated receivers and community members (over three [3] property visits), two (2) in-person meetings with Council and Wagga Business Chamber, 238 posted letters, 10 phone calls, 60 emails, and two (2) online meetings with Members of Parliament (MPs). Opportunities and concerns were identified in relation to the Project and are outlined below.

Opportunities	Challenges
• Community benefit sharing for the Mangoplah community • Economic injection through local ancillary services • Potential access route change suggested by R1. To be investigated further in the EIS. • Employment and business opportunities.	• Accommodation shortages • Environmental impacts on waterways • Concerns in relation to fire risk • Concerns in relation to visual impact • Loss of prime agricultural land • Road access and conditions for construction.

Recommendations

To address these challenges, it is essential for SREA to maintain strategic and robust communication with non-associated sensitive receivers and the wider community. This includes continuous engagement, face-to-face meetings, invitations to participate in assessment's during EIS, regular updates to MPs, and partnerships (where possible) with community groups and other identified stakeholders.

Further investigations should focus on site access (i.e. for example alternative option identified by R1), visual mitigations for R2-R3 as per the outcomes of the LVIA, and ensuring timely communication of outcomes to all interested stakeholders and community members.

Building relationships with First Nations groups is crucial to ensure their inclusion in the energy industry and the protection of connection to Country and it is recommended to SREA to secure their commitment to undertaking cultural awareness training.

Developing a Community Benefit Scheme (CBS) collaboratively with the local community will provide benefits that are specific and tailored to their needs, particularly in upgrading local infrastructure and supporting telecommunication improvements.

Conclusion

The sentiment towards the Project is majority neutral with appreciation for early engagement.

Moving forward, it is critical for SREA to implement a clear CBS, mitigate any identified concerns where possible, continue to keep communication lines open, and maintain robust engagement efforts to ensure stakeholders are well-informed throughout the EIS phase and the wider SSD timeline.

1. Situational Context

1.1. Overview

Samsung C&T Renewable Energy Australia Pty Ltd (The Applicant) is proposing the development of the Mangoplah Battery Energy Storage System (the Project). The Project would involve the construction, operation and decommissioning of a Battery Energy Storage System (BESS) with a capacity of up to approximately 100 Megawatts (MW) / 400MWh (4 hours). The Project would connect directly into the existing 132kV transmission line located adjacent to the BESS.

The Project would be located within the Wagga Wagga City Council (WWCC) Local Government Area (LGA), approximately 3.1 kilometres (km) east of the township of Mangoplah, and approximately 30.6 km south of the regional city of Wagga Wagga, New South Wales (NSW). The site address is **4178 Holbrook Road, Mangoplah NSW 2652.**

Other nearby towns include The Rock, located 17.8km northwest, Big Springs 13.1km northeast and Westby 15.4km southeast. The area of land that is being investigated for siting the Project (the Project Site) covers an area of approximately 13.1 hectares (ha).

The Project would contribute towards the stabilisation of the national energy grid, ease energy wastage, ease peak demand, and support Australia's transition to a renewable energy future through the implementation of a large-scale BESS.

1.2. Design elements

The Project would include the following key built form features:

- BESS including battery enclosures, inverters, transformers, switchgear and control room
- Onsite substation including transformer switch bays and switchgear housed in portable substation containers
- Connection from the onsite substation to the existing overhead 132kv transmission line
- Permanent office, operation and maintenance (O&M) buildings, hardstands and Project signage
- Site access to the BESS from Holbrook Road, internal site access tracks and parking
- Stormwater management infrastructure, lighting, fencing and security.

The final Project Site that will be assessed in the EIS will be informed by community and stakeholder consultation, and detailed environmental investigations.

2. Methodology

2.1. Stakeholder analysis

A full stakeholder analysis was completed in August 2024 to inform the CSES. The focus of engagement activities for the Scoping Phase was understanding, documenting, and assessing community sentiment on the proposed BESS, and preparing engagement recommendations for the Applicant as the Project moves through to the EIS phase. The quality of the relationship with all stakeholders mentioned below is neutral.

Table 2-1 Stakeholders, their interests and recommended engagement approach

Stakeholder group	Targeted stakeholders	Interests	Objectives and opportunities	Impact (H/M/L)	Engagement needs and/or expectations	Engagement approach
Adjacent and near neighbours (including non-associated receivers as shown in Appendix B.	Residential properties within a 4 km in the first instance and 2 km (pending Noise Assessment) radius of the proposed site.	• Property impacts • Noise impacts • Visual impacts • Access • Environmental changes • Commercial agreements • Community benefits • Governance and ownership of the developing entity • Impacts on	• Develop a strong partnership with the community • Keep neighbours informed about the Proposal from early in the planning phase • Identify impacts and mitigations through a collaborative process • Discuss neighbour benefit sharing options directly • Provide opportunities to raise issues and provide feedback.	H	• Consistent engagement • To be informed first of any information • Open and transparent dialogue • Opportunity for discussions and feedback • Face-to-face discussions • Personalised relationships formed • Discussions regarding impacts and possible mitigations • Collaborative approach towards mitigation development • Understanding of cumulative	**Inform, consult, involve, collaborate** Consultation with this group will involve phone calls, distributing letters, invitations to the community drop-in session and a direct face-to-face meeting at their property (where requested). If they can't be reached, a letter will be left at the property asking the residents to contact us and discuss the Project.

Stakeholder group	Targeted stakeholders	Interests	Objectives and opportunities	Impact (H/M/L)	Engagement needs and/or expectations	Engagement approach
		agricultural outputs.			impacts.	
Broader Community and region	Mangoplah township including residents, businesses, and organisations.	• Visual impacts • Noise impacts • Transport impacts • Environmental changes • Community benefits • Governance and ownership of the developing entity • Regional economic development.	• Develop an understanding of and opportunity to participate in the Proposal • Provide opportunities to raise issues and provide feedback • Discuss Community Benefit Sharing options.	M	• Ongoing project updates • Information readily available • Opportunity for discussions and feedback • Identification of benefits.	**Inform, consult, involve** This group will be engaged through broader communications during the development application phase through a community drop-in session, a public notice and communications through the council. Ideally, communications to this group would make use of the Project web page/site.
Traditional Owners	• Wagga Wagga Local Aboriginal Land Council • Bundyi Cultural Tours • Mawang Gaway.	• Visual impacts • Environmental changes • Commercial agreements • Community benefits • Cultural heritage impacts	• Engage with the relevant Local Aboriginal Land Council and RAPs through the formal process • Look for opportunities to contribute to the local story of country and contribute to the local Aboriginal	H	• Engagement to occur face-to-face, not technology focused • Open and transparent dialogue • Opportunity for discussions and feedback • To be listened to • Personalised relationships formed	**Inform, consult, involve, collaborate, empower** This group should be engaged through community drop-in sessions, meetings and project update emails. Ideally, communications to

Stakeholder group	Targeted stakeholders	Interests	Objectives and opportunities	Impact (H/M/L)	Engagement needs and/or expectations	Engagement approach
		• Impacts to Country • Impacts on agricultural outputs.	Community. • Involve local community organisations in Community Benefit Sharing initiatives.		• Participation in benefits development • Feelings of empowerment with decision making.	this group would make use of the Project web page/site but mainly direct contact. The approach is to ensure we create meeting opportunities that are best suited to this stakeholder group, mitigating participation barriers where possible. E.g. a walk on Country and/or a listen and yarn activity.
Community organisations	• Apex • Rotary • Lions • Country Women's Association (CWA) • Local sporting organisations • Sporting clubs like the Mangoplah Cookardinia United Eastlakes Goannas.	• Property impacts • Visual impacts • Access • Environmental changes • Commercial agreements • Community benefits • Governance and ownership of the developing	• Identify interests and opportunities to partner and contribute • Look for opportunities to address concerns in the CWA regarding impacts on productive land.	M	• Ongoing engagement regarding updates • Information readily available • Opportunity for discussions and feedback.	**Inform, consult** Outside of the non-associated receivers identified, this group should be engaged through broader communications during the Scoping phase through a community open drop-in session, a public notice (print) and communications through council.

Stakeholder group	Targeted stakeholders	Interests	Objectives and opportunities	Impact (H/M/L)	Engagement needs and/or expectations	Engagement approach
		entity • Impacts on agricultural outputs				Ideally, communications to this group would make use of the project web page/site.
Government Agencies/Utility owners	• DPHI • TransGrid • Department of Agriculture (where relevant) • Transport for NSW • Geo Science NSW (where relevant) • Civil Aviation Safety Authority (where relevant) • Air Services Australia (where relevant) • Biodiversity Conservation Service (BCS) • National Parks and Wildlife (where relevant).	• Impacts on local infrastructure • Assessment process • Consideration of impacts • Consideration and mitigation of concerns • Consultation process • Application of standards and frameworks.	• Introduce the Project • Develop and maintain a positive relationship • Identify opportunities and concerns.	H	• Ongoing engagement regarding updates • Information readily available • Face-to-face discussions • Discussions regarding issues mitigation, opportunities.	**Inform, consult, involve** This group should be engaged directly by NGH Planning team through phone calls, emails, distributing letters, and a direct face-to-face meeting where possible. Ideally, communications to this group would make use of the project web page/site.
Wagga Wagga City Council	• Manager of City Growth & Regional Assets	• Impacts on local infrastructure • Assessment	• Introduce the Project • Develop and maintain a positive relationship	H	• Ongoing engagement regarding updates • Information readily available	**Inform, consult, involve** This group should be engaged directly through

Stakeholder group	Targeted stakeholders	Interests	Objectives and opportunities	Impact (H/M/L)	Engagement needs and/or expectations	Engagement approach
	• Strategic Sustainability Advisor • Director Regional Activation • Director Infrastructure (or equivalent) • Director Community (or equivalent).	process • Consideration of impacts • Consideration and mitigation of concerns • Consultation process • Application of standards and frameworks.	• Identify and leverage council communication channels • Identify opportunities to support the local economy/community.		• Face-to-face discussions • Discussions regarding issues mitigation, opportunities • Community benefits/VPA discussions • Discussions regarding use of Council roads, etc.	phone calls, distributing letters, and a direct face-to-face meeting where possible. Ideally, communications to this group would make use of the project web page/site.
Federal elected member	Member for Riverina, the Hon Michael McCormack MP	• Impacts on local infrastructure • Assessment process • Consideration of impacts • Consideration and mitigation of concerns • Consultation process • Application of standards and frameworks.	• Introduce the Project • Develop and maintain a positive relationship • Identify opportunities to support the local economy/community.	H	• Ongoing engagement regarding updates • Information readily available • Face-to-face discussions • Discussions regarding issues mitigation, opportunities • Community benefits/VPA discussions • Understanding of cumulative impacts.	**Inform, consult, involve** This group should be engaged directly through phone calls, distributing letters, and a direct face-to-face meeting where possible. Ideally, communications to this group would make use of the project web page/site.
State elected	Member for Wagga Wagga, Dr Joe McGirr	• Impacts on local	• Introduce the Project • Develop and maintain	H	• Ongoing engagement regarding updates	**Inform, consult, involve** This group should be

Stakeholder group	Targeted stakeholders	Interests	Objectives and opportunities	Impact (H/M/L)	Engagement needs and/or expectations	Engagement approach
member	MP	infrastructure • Assessment process • Consideration of impacts • Consideration and mitigation of concerns • Consultation process • Application of standards and frameworks.	a positive relationship • Identify opportunities to support the local economy/community.		• Information readily available • Face-to-face discussions • Discussions regarding issues mitigation, opportunities • Community benefits/VPA discussions • Understanding of cumulative impacts.	engaged directly through phone calls, distributing letters, and a direct face-to-face meeting where possible. Ideally, communications to this group would make use of the project web page/site.
Schools, TAFEs and Universities	• TAFE Wagga Wagga • Charles Sturt University • Public, Private and Catholic Schools.	• Impacts on local infrastructure • Consideration of impacts • Community Benefits.	• Ensure organisations are updated on education and vocational opportunities associated with the Proposal. • Identify relevant community benefit scheme opportunities.	L	• Ongoing engagement regarding possible involvement in educational opportunities • Information readily available • Opportunity for discussions and feedback	**Inform, consult, collaborate** This group should be engaged through broader communications during the Scoping phase through a community open drop-in session, a public notice (print) and communications through council. Ideally, communications to this group would make use of the project web

Stakeholder group	Targeted stakeholders	Interests	Objectives and opportunities	Impact (H/M/L)	Engagement needs and/or expectations	Engagement approach
						page/site.
Business groups/small businesses	• Wagga Wagga Chamber of Commerce • Mangoplah township businesses and those with a broader interest in the region • Construction companies that may contribute to the battery facility construction and installation • Solar Professionals Wagga Wagga (construction and operation recycling, maintenance and decommissioning services)	• Property impacts • Visual impacts • Access • Environmental changes • Commercial agreements • Community benefits • Governance and ownership of the developing entity • Impacts on agricultural outputs	• Work with the chamber to identify any local businesses that may be impacted by the Proposal (positive or negative). • Identify opportunities to develop or utilise local capability.	M	• Ongoing engagement regarding updates • Information readily available • Opportunity for discussions and feedback • Identification of possible opportunities/participation.	**Inform, consult** Outside of the non-associated receivers identified, this group should be engaged through broader communications during the Scoping phase through a community open drop-in session, a public notice (print) and communications through the council. Ideally, communications to this group would make use of the Project web page/site.
Advocacy groups	TBC	• Regional growth • Community benefits	• Consider opportunities for partnerships and community events • Consider advocacy	M	• Ongoing engagement regarding updates • Information readily available	**Inform, consult** Outside of the non-associated receivers

Stakeholder group	Targeted stakeholders	Interests	Objectives and opportunities	Impact (H/M/L)	Engagement needs and/or expectations	Engagement approach
		• Governance and ownership of the developing entity.	opportunities • Potential for partnerships.		• Opportunity for discussions and feedback • Identification of possible advocacy activities.	identified, this group should be engaged through broader communications during the Scoping phase through a community open drop-in session, a public notice (print) and communications through council. Ideally, communications to this group would make use of the project web page/site.
Groups of renewable objectors	• CWA • Riverina Sustainable Food Alliance • Eunony Valley Association Neighbours and/or interested stakeholders from nearby proposed developments	• Property impacts • Visual impacts • Access • Environmental changes • Commercial agreements • Community benefits • Governance and ownership of the	• Identify and address concerns as required • Prepare responses to known concerns based on previous projects • Manage issues constructively and efficiently • Ensure equity in the engagement.	M/L	• Ongoing engagement regarding updates • Information readily available • Opportunity for discussions and feedback.	**Inform, consult** Outside of the non-associated receivers identified, this group should be engaged through broader communications during the Scoping phase through a community open drop-in session, a public notice (print) and communications through

Stakeholder group	Targeted stakeholders	Interests	Objectives and opportunities	Impact (H/M/L)	Engagement needs and/or expectations	Engagement approach
		developing entity • Impacts on agricultural outputs.				council. Ideally, communications to this group would make use of the project web page/site.

2.2. Engagement activities

Based on the stakeholder analysis (outlined in section 2.1), a stakeholder register was developed by NGH, which enabled the distribution of materials and consultation with both the wider community as well as identified stakeholders.

In summary, this report has been informed by the following engagement activities:

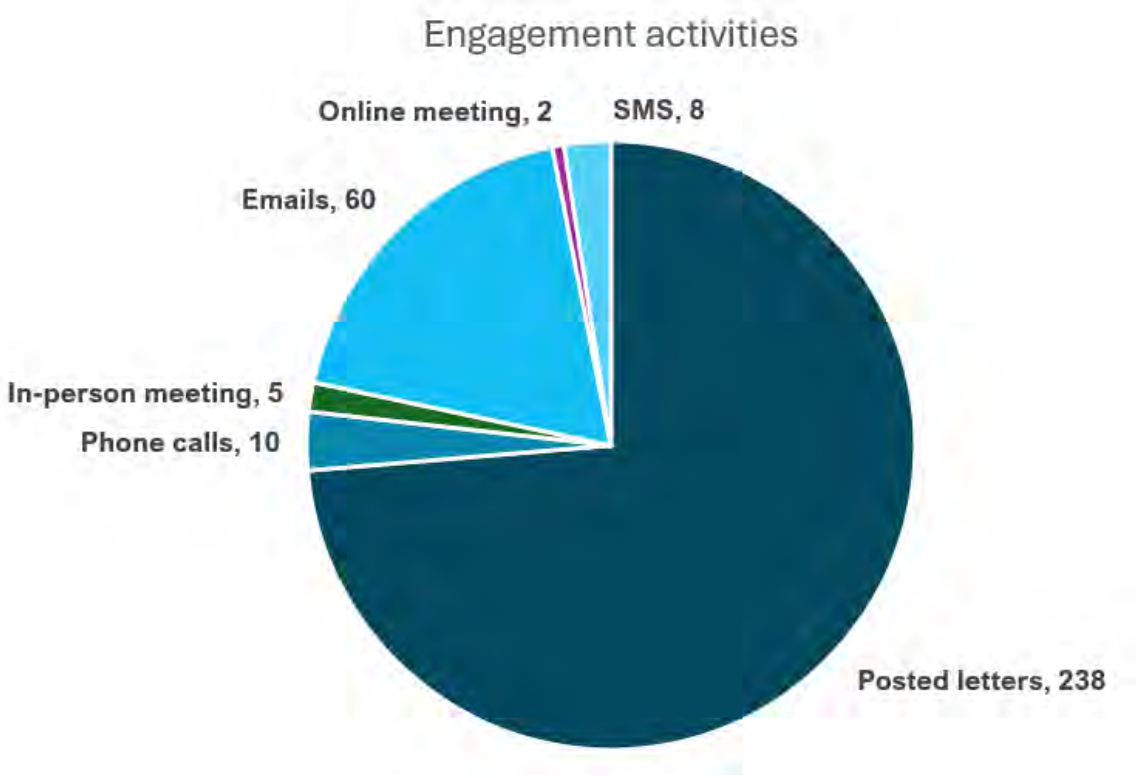


Figure 2-1 Overview of engagement activities

Table 2-2 Engagement activities in detail

How	Who	Why	When
Posted letters (Appendix A)	Non-associated receivers within 4 km of the Project site (Appendix B) • 119 letters posted (identifiable addresses) x 2 (238 total)	Introduce the Project, inviting them to reach out for more information or a meeting, and directing them to complete the online survey.	3 September 2024 2 October 2024
Emails	Targeted stakeholders • 60 emails	Introduce the Project, invite them to reach out for more information or a meeting, and direct them to	10 September – 22 October 2024

How	Who	Why	When
		complete the online survey.	
Phone calls	Non-associated receivers, First Nations Groups, and other identified stakeholders • 10 phone calls	Introduce the Project, invitation to an in-person meeting, discussions regarding participation in preliminary Social Impact Assessment (SIA), and discuss potential CBS.	Between 10 October and 17 October 2024
Fact sheet (Appendix C)	All stakeholders where possible. • 26 copies delivered via email • Available in face-to-face meetings	To introduce the Project and direct stakeholders to complete the online survey.	Distributed from September 2024
FAQ document (Appendix D)	All stakeholders where possible. • 26 copies delivered via email • Available in face-to-face meetings	To introduce the Project and answer known questions.	Distributed from September 2024
Online survey (Appendix E)	Wider community. Available on the fact sheet and letters • 5 responses received	To request feedback on the Project to help inform mitigations and build on potential CBS.	14 August – 4 October 2024
Face-to-face meetings	• Wagga Wagga City Council • Wagga Wagga Business Chamber • Non-associated receivers within 4 km (10 attendees over 3 meetings) • 5 meetings in total.	To introduce the Project, understand concerns, request feedback, and help inform mitigations and build on potential CBS.	16 - 17 October 2024
Online meetings	• Member for Riverina, Hon. Michael McCormack MP • Member for Wagga Wagga, Dr Joe McGirr MP	To introduce the Project, understand concerns, request feedback, inform mitigations, and build on potential CBS.	26 September 2024 11 October 2024
Project website	• Wider community	To introduce the Project and answer known questions.	October 2024

3. Community and stakeholder feedback

3.1. Engagement activity feedback

Several emails, phone calls, face-to-face and online meetings were facilitated with Council, professional consultees, non-associated receivers, and community members. The table below outlines the stakeholder feedback received.

Table 3-1 Stakeholder feedback summary

Stakeholder	Meeting type	Concerns/comments	Actions by NGH and highlighted interests
Wagga Wagga City Council • **4 WWCC representatives**	• Face-to-face meeting at Council Chambers (16/10/2024).	• SREA provided an overview of the project, including connection point, access road, and capacity in megawatts. • Council inquired about battery type; SREA confirmed lithium batteries, but the manufacturer is undecided. • Council asked if the project followed the SSD pathway and requested the estimated cost, which SREA confirmed to be over $30 million. • SREA and NGH explained that SEARs have not been received, as the Scoping Report is still in the early investigation stage. • SREA explained the Mangoplah site was selected based on meeting necessary criteria. • Concerns were raised regarding the following topics: o Construction timeline o Overall footprint o Decommissioning plans and waste removal responsibilities o Worker accommodation impacts o Landowner insurance impacts. • NGH asked if Wagga could provide a local workforce to reduce accommodation needs; Council expressed doubts, citing past	• Re-introduced the Project • Provided informational materials • Project considerations: o Accommodation o Workforce procurement o Environmental considerations o Decommissioning o Insurance impacts • Community Benefit Funds/VPA • Communication: request for ongoing engagement.

Stakeholder	Meeting type	Concerns/comments	Actions by NGH and highlighted interests
		housing shortages. • Council noted that delays at Defence Force housing projects extended timelines due to a lack of workers and housing. • SREA and NGH noted that investigations are underway regarding insurance impacts. • Council emphasised the importance of clear communication with the community for earning social licence and expected minimal concerns due to the project's size. • SREA clarified that the development is privately owned • Discussions on a community benefit fund began; Council awaits further guidelines related to battery projects, with negotiations continuing during the EIS phase.	
Member for Riverina **Michael McCormack MP**	• Online meeting (25/09/2024) • 5 x emails between 11/09/2024 and 26/09/2024.	• Appreciation was expressed for the outreach. • The project was presented with a high-level overview, including size, location, grid connection, and purpose. • Questions were raised about the number of contacted neighbours and any concerns raised, along with details regarding agreements with the landowner, who is known to have a good relationship with the MP. • Questions included the distance of the BESS from Holbrook Road and Mangoplah, its relation to Maxwell Downs Solar Farm, container colour, and potential vibration issues, similar to those associated with wind farms. • The Project team explained that extensive assessments, including noise evaluations, are ongoing and assured that all mitigation measures will be implemented to minimise sound impact, with confidence in minimal or no effects based on proximity to neighbours. • Additional questions were raised regarding operational timelines	• Introduced the Project and introduced the Applicant • Provided informational materials • Project considerations: o Neighbour engagement o Neighbour impacts • Ongoing engagement.

Stakeholder	Meeting type	Concerns/comments	Actions by NGH and highlighted interests
		following DA approval, project costs, whether it is SSD, and the next steps in the process. • A request was made for all current and future materials and letters to be emailed for comprehensive understanding. • It was noted that being able to inform constituents about engagement with the developer and proposed mitigation measures is important. • While clear support for the proposal was not expressed, the meeting was described as very positive.	
State Member for Wagga Wagga **Dr Joe McGirr MP**	• Online meeting (10/10/2024) • 6 x emails between 11/09/2024 and 21/10/2024.	• Questions were raised about the planned size of the BESS and its overall dimensions, including height. The project team responded that specific details are still being finalised, as the project is in its early stages. • There were questions about the reasoning behind the selection of this location. The project team clarified that grid studies have been ongoing since 2023 and that the site was chosen due to its natural shielding by vegetation, suitability for the transmission line, and lack of additional easements, minimising overall environmental impact. • More information was requested about the project team's operations and presence in the energy sector. The team explained their strong presence in Canada and the USA, focusing on solar and wind energy projects. They entered the Australian market in 2022 to develop solar farms and battery storage projects and are still relatively new to the Australian energy landscape. • Clarification was sought regarding the ownership structure of the company and its operational methods in the sector. • Inquiries were made about the functionality of the BESS and its capacity to power homes. The project team clarified that the system would have the capacity to power approximately 190,000 homes for	• Introduced the Project and introduced the Applicant • Provided informational materials • Project considerations: o Neighbour engagement o CBS • Ongoing engagement.

Stakeholder	Meeting type	Concerns/comments	Actions by NGH and highlighted interests
		one hour. • Some difficulty was expressed in understanding the necessity of a battery storage system in the region and the choice of location. • The conversation shifted towards the potential for a CBS, and it was noted that the project team would consider implementing such a scheme for the local community. • General concerns for the area were raised due to the decommissioning of the 3G network, with a question about the possibility of ensuring reliable internet as part of the CBS. • Overall, appreciation was expressed for the opportunity to engage in discussions and the transparency of the conversation.	
Bundyi Cultural Tours – First Nations	• Phone call on 10/10/2024 • 5 x emails between 10/09/2024 and 09/10/2024 • SIA online interview (30/09/2024).	• The conversation highlighted experiences with other developers and their inadequate community engagement. • It was encouraged that the developer undertakes cultural awareness training, to which SREA agreed and accepted. • It was emphasised that meetings should occur between nearby neighbours and the First Nations community to break down barriers and foster relationships. • Local Landcare groups were identified as valuable stakeholders, as they involve many First Nations individuals who have established relationships with farmers. • When asked about the possibility of over-consultation with the First Nations community, it was noted that promises made often do not materialise. • Employment was mentioned as a frequent promise that goes unfulfilled. • It was suggested that developers should include a clause in contracts with construction companies to ensure the hiring and training of an	• Introduced the Project and introduced the Applicant • Provided informational materials • Community Benefit Funds/VPA • Employment • Cultural awareness training • Ongoing engagement.

Stakeholder	Meeting type	Concerns/comments	Actions by NGH and highlighted interests
		Aboriginal person. • Concerns were raised about the site of the BESS, specifically that it borders a creek that may overflow at some point, which needs to be considered. • Additionally, it was mentioned that a neighbour has an important waterway on their property, and there is a desire to meet and build a relationship with them. • It was suggested that a board meeting with key stakeholders would be the most effective approach for community consultation, ideally in a neutral setting to prevent hostility. • A perceived disconnect between the biodiversity team, heritage, and engagement was noted, with the belief that RAPs should be integrated from the very beginning of the process. • The process was explained, indicating that the ACHA started after initial communications to contact neighbours first, which delayed the involvement of RAPs.	
Non-associated receiver – R1	• Property visit (16/10/2024) • Phone call (10/10/2024) • Multiple emails and SMS's between 10/10/2024 and 17/10/2024.	• NGH and SREA met with R1 to address concerns about the BESS project. • The resident raised issues regarding road upgrades and planned earthworks, noting that previous internal track upgrades had negatively impacted his farming by diverting rainwater and causing flooding. • Both the resident and spouse highlighted that internal tracks on the landowner's property were inadequate, especially in heavy rain, which could hinder access. • The resident suggested using his internal road for construction access, which is already suitable for heavy vehicles, in exchange for financial compensation.	• Explained the Project and introduced the Applicant • Provided information material • Project considerations: o Visual impacts o Access route o Construction • Property visits and participation in EIS assessments (VIA) • Ongoing engagement.

Stakeholder	Meeting type	Concerns/comments	Actions by NGH and highlighted interests
		• He noted that he was willing to accept the construction impacts if his road was used, as it required minimal upgrades and is a much shorter route to the BESS site, and in his opinion, a better option. • He questioned the reliability of internet service, which he believed could hinder 24/7 remote monitoring of the BESS. • Concerns were also voiced about heating and cooling systems during summer power outages, and the asset protection zone was confirmed as 10 metres. • The resident's spouse expressed worries about potential impacts on their insurance, which the project team acknowledged and is investigating. • Visual impact was discussed, with the resident highlighting the view to the BESS site from his back yard. An invitation to participate in the VIA was put forward by the Project team. • They inquired about the BESS's power source, operational details, and whether a generator would be available during power outages. • SREA noted this feedback for further consideration and emphasised the need to engage with the local RFS for better land understanding.	
Community members x 4 (including neighbour to Maxwell Downs Solar Farm) / non-associated receivers R2-R3 & R12 - **6 attendees in total**	• Group meeting at property (17/10/2024) • Phone calls • (10/10/2024, 14/10/2024, 16/10/204) • Multiple emails and SMS's between 01/10/2024 &	• A group meeting was held at R12's property, with six (6) community members in attendance. • Residents inquired about the bunding of BESS modules, and SREA explained the internal spill tray functionality. Concerns were raised about potential impacts on farming operations if runoff affected the creek used for irrigation. • SREA clarified that lithium-ion batteries would be used and addressed questions about the connection point at the 132kV transmission line, stating that modules would sit on compacted gravel (or equivalent). • Fire hazards were discussed, with NGH indicating that the RFNSW	• Explained the Project and introduced the Applicant • Provided information material • Project considerations: o Visual impacts o Access route o Location o Environmental impacts – run off

Stakeholder	Meeting type	Concerns/comments	Actions by NGH and highlighted interests
	17/10/2024.	and RFS would manage fire safety and approve plans. A resident mentioned previous fires at the Glenrowan site, which NGH will investigate. • Questions arose regarding the uniqueness of the project, with SREA and NGH referencing other BESS projects for comparison. Residents also asked about site selection criteria and the project's lifespan. • Resident's raised concerns about the Project initiating a subsequent solar farm. SREA clarified that no, that was not their intention. • Ownership was clarified: the BESS would be funded and operated by SREA or have part-ownership if financial benefits were identified. Government funding was discussed, confirming the project is not government-funded. • Residents were concerned about who would cover road upgrades; SREA confirmed they would bear all project-related costs associated with the Project, including road improvements. • Community benefits were a focal point, with residents insisting that CBS funds be directed to Mangoplah and not managed by the Council. Suggestions included upgrading hall and football club facilities, with requests for annual disbursement of funds during the project's duration. • A resident noted an existing Sports and Community Group run by a local individual. Visual impacts were also addressed, inviting a resident to participate in a Visual Impact Assessment (VIA) and exploring screening options. • There were questions about site choice, with residents recalling prior communication from the landowner about situating the BESS towards the back of the block for reduced visual impact, which contradicted project maps. SREA explained that the current location was	o CBS • Ongoing engagement.

Stakeholder	Meeting type	Concerns/comments	Actions by NGH and highlighted interests
		influenced by access to the transmission line, and landowner preferences, committing to investigate further. • Residents expressed a preference to relocate the BESS, acknowledging that an old train line may have affected its placement. While it was confirmed that the creek at the back of the block does not flood, its proximity may have deterred BESS placement. • Residents preferred future consultations to be town hall meetings in the evenings, rather than small home meetings. NGH acknowledged this preference but expressed concerns about meaningful dialogue and dominance in discussions. Residents offered support for constructive dialogue in community meetings. • Questions were raised about water sources for firefighting tanks, with residents noting limited access to mains water for local farmers. They requested SREA's assistance in advocating for improved access from Riverina Water, while SREA stated they would rely on trucked water as needed. • Key points included residents' preference to relocate the BESS and ensure the community benefits financially through a self-managed CBS.	
Non-associated receiver – R2-R3	• In-person meeting as mentioned above (17/10/2024) • Phone call (10/10/2024) • Multiple emails and SMS's between 01/10/2024 & 17/10/2024.	• A phone discussion took place with a resident to confirm whether he received his letter, which he had not. • Introductions were made, and an offer was extended to meet in person while the project team was in Mangoplah to discuss the BESS. • The resident expressed enthusiasm for the meeting but could not confirm a date or time, as he needed to check his shearing schedule for the following week. • He mentioned that he recently moved to Mangoplah from Hay and is semi-retired, currently managing a few sheep.	• Introduced the Project and introduced the Applicant • Ongoing engagement.

Stakeholder	Meeting type	Concerns/comments	Actions by NGH and highlighted interests
		• NGH confirmed they would follow up again.	
Community member x 2	• Property visit (16/10/2024) • Phone call (09/10/2024) • Multiple emails between 18/09/2024 and 09/10/2024 • Survey respondent.	• A resident expressed concerns about the loss of prime agricultural land and fire risks associated with the BESS project, drawing on his experience as a former local fire brigade captain. SREA detailed the fire suppression systems in place. • He noted that the access road to the BESS site might become inaccessible during winter due to mud or flooding, complicating fire service access. • Inquiring about the choice of land, the resident was informed by SREA that the lengthy land acquisition process considered factors such as access to transmission lines and minimal biodiversity impacts. The resident suggested alternative locations, which SREA explained had been investigated and considered. • The explanation seemed to satisfy the resident, highlighting the complexities of land acquisition. • He also asked about the battery lifespan, receiving confirmation from SREA that it would last around 30 years, subject to refurbishment. • Concerns were raised regarding poor internet access and phone reception in the area, questioning the feasibility of remote monitoring of the battery. SREA acknowledged this concern as a common issue among stakeholders. • For community benefits, he suggested supporting the town hall's upkeep and proposed that a local committee manage the Community Benefit Scheme. • The discussions were described as open and positive, with the resident stating he had no objections to the BESS but wished it were closer to a sealed road for better access. He acknowledged that land acquisition depends on landowners' willingness to lease.	• Introduced the Project and introduced the Applicant • Supplied informational materials • Project considerations: o Access route o Location (prime agricultural land) o Fire risk o CBS • Ongoing engagement.

Stakeholder	Meeting type	Concerns/comments	Actions by NGH and highlighted interests
		• Although he would be travelling in his caravan during the EIS phase, he expressed an interest in staying informed and offered to serve as a main point of contact for future questions or concerns.	
Community member	• In-person meeting mentioned above (17/10/2024) • Phone call (17/10/2024) • 2 x emails (21/102024 & 22/10/2024).	• A community member contacted NGH after their face-to-face meeting for clarification regarding information in the Mangoplah BESS FAQ document. • The resident questioned the assertion that the proposed site was not Strategic Agricultural Land, noting the land's history of award-winning cropping. NGH confirmed they would provide the source of this information. • The resident raised concerns about the potential internal tracks for construction, describing them as inadequate and costly to upgrade, a sentiment echoed by other nearby residents. • He mentioned speaking to other neighbours who confirmed they had not been contacted by SREA's land acquisition manager. There were discrepancies regarding the landowner's claims of direct contact from SREA. • NGH responded via email, providing an explanation of the criteria for Strategic Agricultural Land and links to relevant NSW Government resources, noting that further investigations into soil fertility will take place during the EIS. • Following further investigation, NGH confirmed that attempts were made to reach out to two landowners in Mangoplah and seven others from surrounding areas. • The list of names and addresses used for outreach came from the land acquisition manager's research, though many landowners were not contacted in 2023 due to easement requirements. • Additionally, the land north of the creek, owned by a resident	• Project considerations: o Access route o Location o Primage agricultural land • Ongoing engagement.

Stakeholder	Meeting type	Concerns/comments	Actions by NGH and highlighted interests
		undergoing cancer treatment, was not pursued at the time to avoid complications.	
Wagga Wagga Business Chamber	• Meeting in person (17/10/2024) • 4 x emails between 10/09/2024 and 09/10/2024.	• The project team met with the Business Chamber in Wagga. • A representative raised questions about the project's business model, operation details, and employment numbers during construction and operational phases. • The representative offered to connect SREA with local businesses and mentioned the Chamber's regular meetings and networking events. • She suggested that SREA consider joining the Chamber to benefit from networking and enhance brand reputation. • Valuable advice was provided regarding project timelines, highlighting that delays could adversely affect local businesses relying on SREA involvement. • Concerns were reiterated about skills shortages and accommodation issues, advising SREA to prioritise employing a local workforce to mitigate these challenges.	• Introduced the Project and introduced the Applicant • Supplied informational materials • Project considerations: o Skills shortages o Local procurement • Ongoing engagement.
Interested stakeholder from nearby proposed development	• SIA interview online (01/10/2024) • Phone call (27/09/2024) • Multiple emails between 27/09/2024 and 03/10/204.	• After an initial SIA interview, the representative sought clarification on land selection, the prevalence of renewable energy developments around Wagga/Mangoplah, and the relationship between a BESS and potential solar farms. • The engagement team explained via email that SREA is investing in solar and BESS projects by evaluating factors such as: o Commercial viability and investment potential o Proximity to existing grid infrastructure and capacity o Land use zoning and development permissions o Site accessibility	• Introduced the Project and introduced the Applicant • Supplied informational materials • Ongoing engagement.

Stakeholder	Meeting type	Concerns/comments	Actions by NGH and highlighted interests
		o Environmental constraints o Property boundaries • The chosen land parcel was selected for its proximity to the transmission line, reducing the need for lengthy electrical easements and minimising impacts on multiple landowners. A lease agreement was reached with the landowner, pending the development application and grid application outcomes. • While the reasons for other developers' choices are unknown, the area has become popular for solar farms due to its position in NSW's electricity network and support for interconnectors. The Mangoplah BESS aims to enhance the capacity and resilience of the NSW energy network to meet government targets for renewable electricity. • It was clarified that a BESS does not necessarily indicate the future development of a solar farm. A BESS is an energy storage system that can be charged from various sources in the National Electricity Market, independent of solar farm location.	

3.2. Feedback Survey

The community feedback survey was developed to inform the preliminary SIA and associated worksheet and was available for community members to complete via the posted letter, fact sheet, and emails.

The survey contained 17 questions and was developed on the Survey Monkey platform. A total of five (5) responses were received, and a summary of the data is included below.

- Of the five (5) respondents, all lived in the local area
- All respondents (or 100%) strongly oppose the Project
- When considering the values of the local area, all respondents (5) nominated landscape and views and natural values including biodiversity, ecosystems, etc. as the most prominent
- When considering the main reasons the respondents were interested in the proposed Project, (4) respondants chose the potential negative impacts on the local area
- When considering local landscape characteristics and their importance, the following was nominated as being most important:
    - The way the land, creeks and trees look
    - Prime farming land that should remain that way
    - Keeping it in its current untouched form.
- When considering potential **environmental** impacts from the proposed Project, the following were considered important:
    - Five (5) respondents selected fire management practices
    - Three (3) respondents selected the potential for impacts to waterways
    - Three (3) respondents selected waste management procedures
    - Three (3) respondents selected native vegetation impacts
    - Two (2) respondents selected impact on land use.
- When considering **social and economic** impacts of the proposed Project, the following were considered important:
    - Four (4) respondents selected the disruption to community cohesion
    - Three (3) respondents selected potential impacts to property values
    - Three (3) respondents selected engagement with near neighbours
    - Two (2) respondents selected cultural heritage.
- When considering **amenity** factors of the proposed Project, the following were considered important:
    - Five (5) respondents selected the potential for visual impacts for near neighbours
    - Five (5) respondents selected transportation planning and the use of local roads
    - Four (4) respondents selected potential for noise impacts for near neighbours
    - Four (4) respondents selected temporary construction impacts (i.e., noise, traffic, dust).

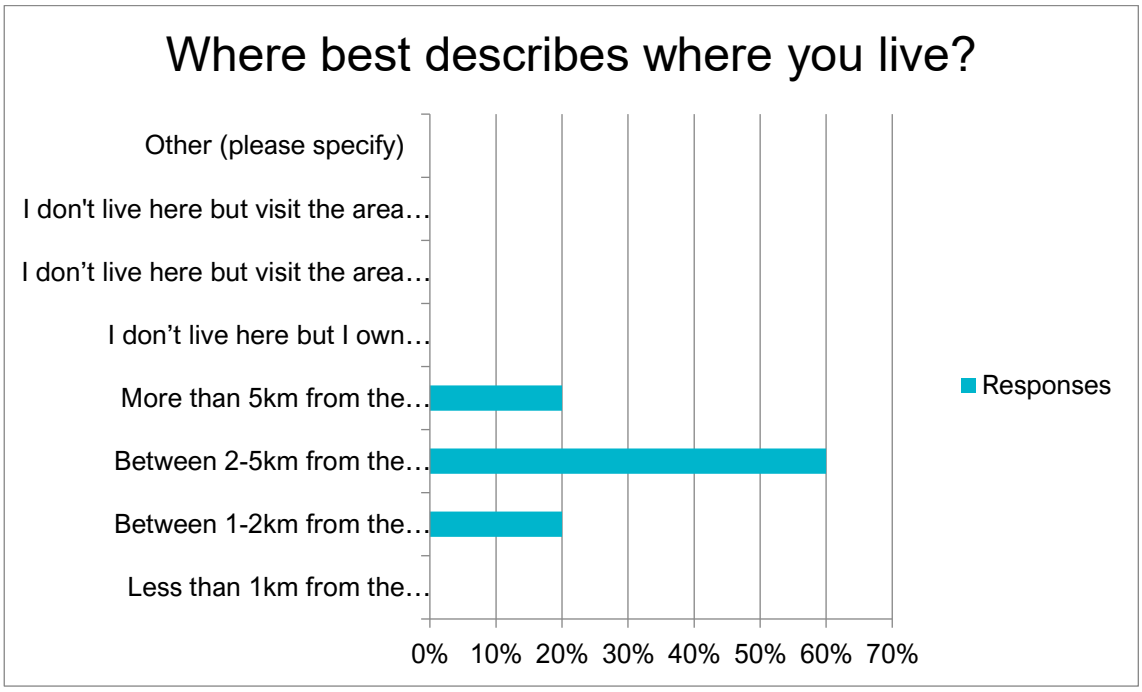


Figure 3-1 Community Feedback Survey - Respondents' proximity to the proposed Project

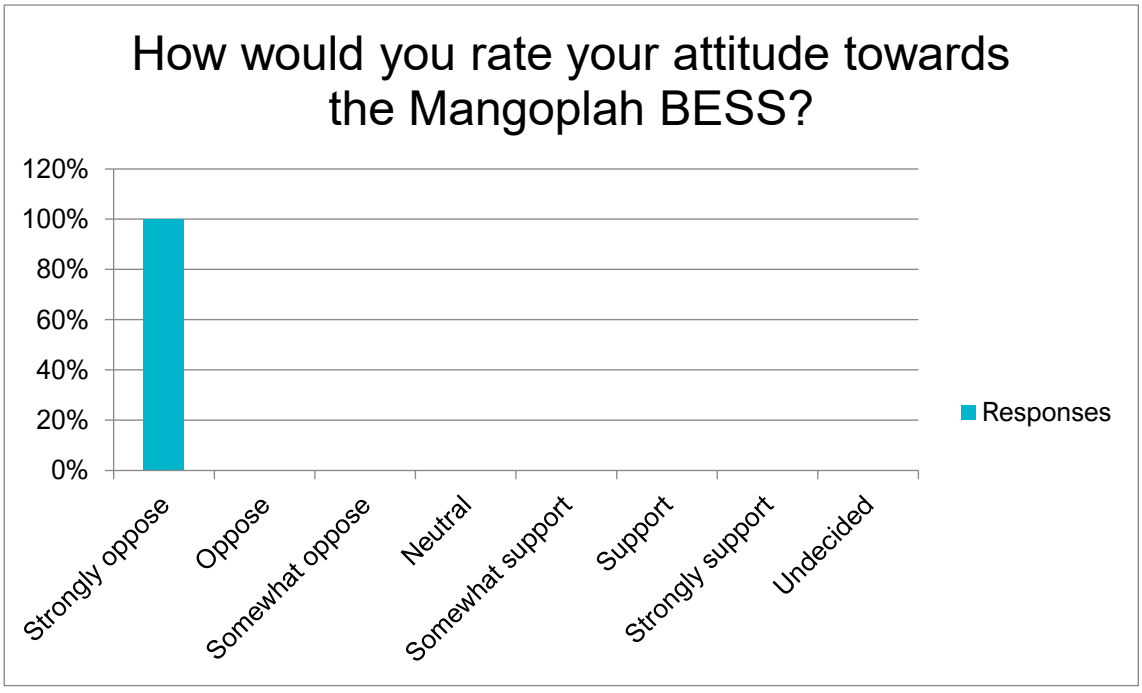


Figure 3-2 Community Feedback Survey - Respondents' level of support for the proposed Project

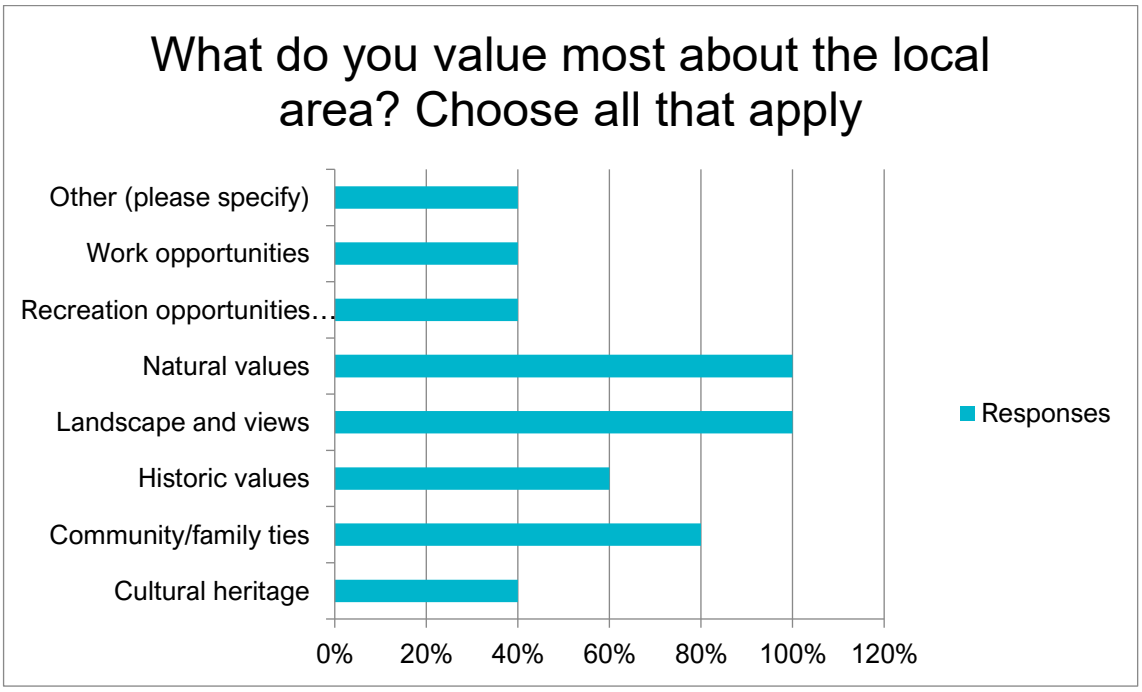


Figure 3-3 Community Feedback Survey - Respondents' rating of value of local area

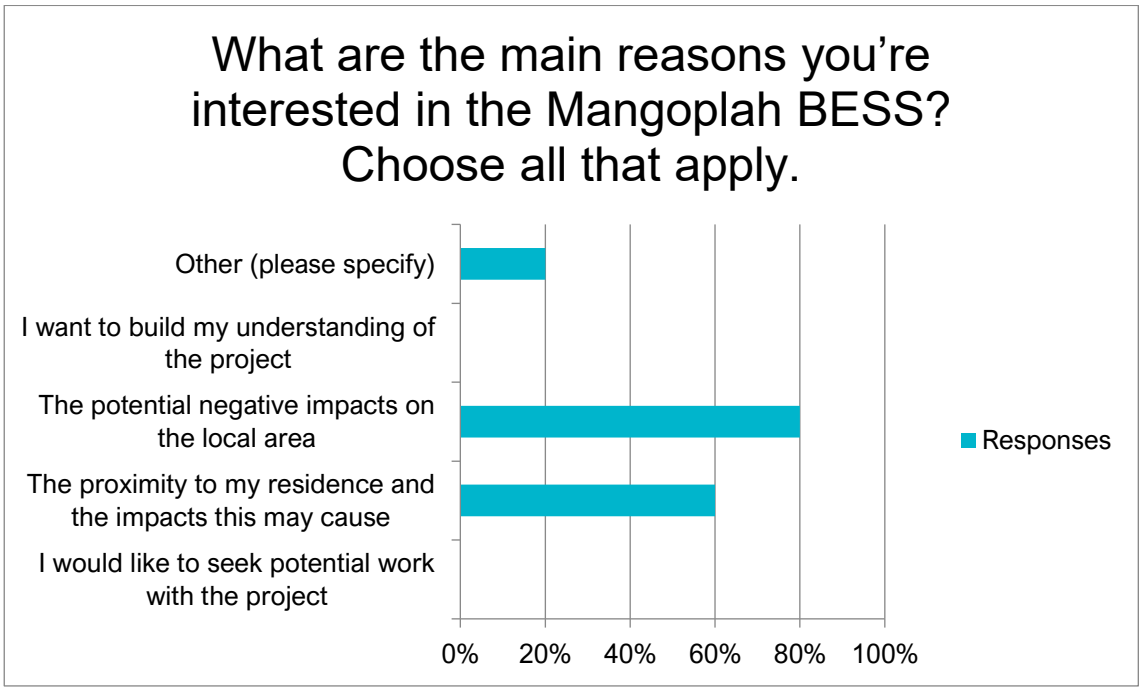


Figure 3-4 Community Feedback Survey - Respondents reason for interest in the Project

4. Findings

4.1. Key concerns and opportunities

The feedback received throughout the Scoping engagement phase presented a range of perspectives and inputs for the Applicant to consider.

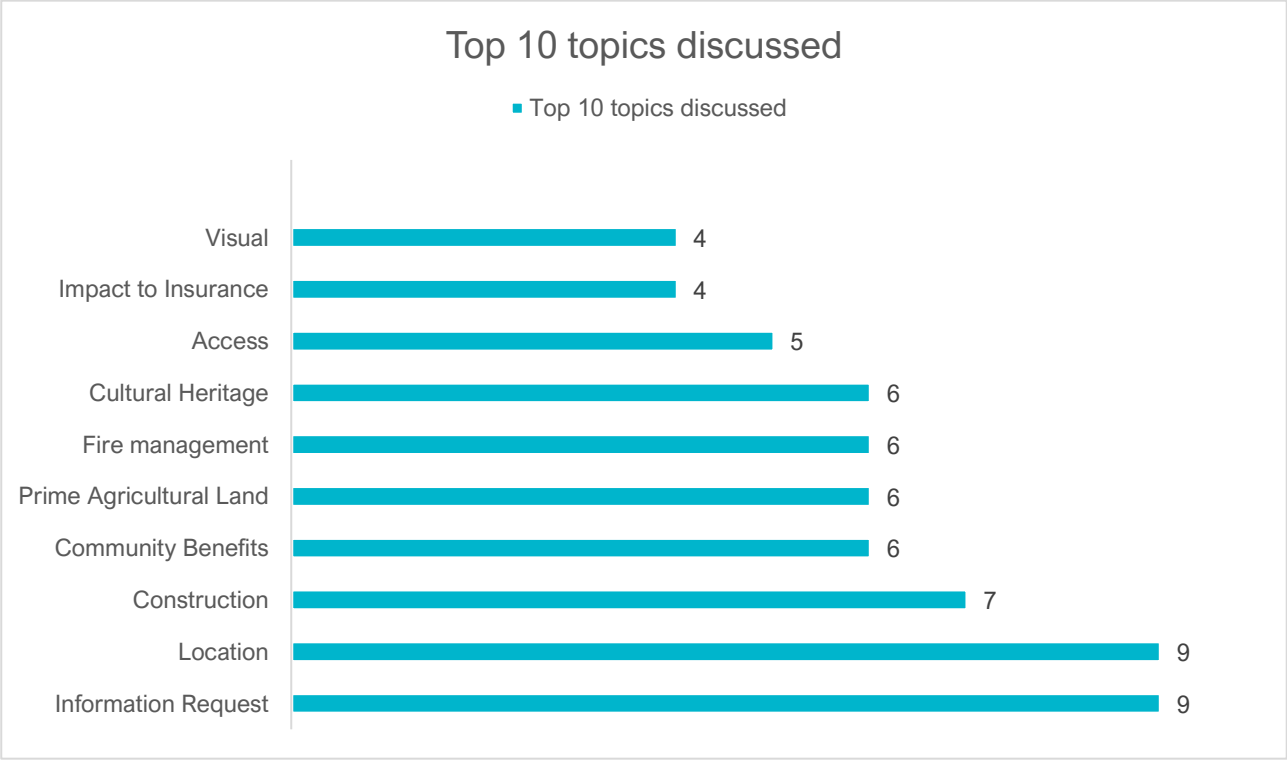


Figure 4-1 Top 10 topics discussed during Scoping (not including survey data)

The following conclusions can be drawn:

- The biggest opportunities were identified as:
  - Community benefit sharing (mentioned six [6] times)
  - Local employment opportunities (as an area to explore further – mentioned three [3] times)
  - Potential road upgrades on neighbouring property (suggested by R1).
- The biggest concerns and/or challenges that were identified were:
  - Accommodation shortages (mentioned two [2] times)
  - Concerns regarding poor internal access route in wet conditions (mentioned six [6] times)
  - Concerns regarding perceived impacts on waterways due to the Project's location adjacent to Burkes Creek (mentioned two [2] times)
  - Concerns regarding increases in insurance (raised by R1, R2-R3, and two [2] community members)
  - Environmental considerations through fire risk (mentioned six [6] times)
  - Cumulative impacts to neighbouring properties due to internal track upgrades (raised by R1)

    - Loss of prime agricultural land (mentioned six [6] times)
    - The notion that a BESS would trigger a solar farm development in the near future (mentioned five [5] times)
    - Impacts on visual amenity (mentioned four [4] times).
- The importance of maintaining continuous engagement with the local community was emphasised by approximately six (6) community members and non-associated receivers, the Member for Riverina, and Member for Wagga Wagga
- When considering community benefits, stakeholders emphasised the importance of keeping benefits local to Mangoplah. Suggestions included:
    - Upgrades to the Mangoplah Hall
    - Upgrades to the club rooms at the football ground
    - Potential support in relation to telecommunication improvements for the area
    - Potential support for access to mains water (some farmers are currently capped by Riverina Water).

The feedback and engagement activities to date indicate early engagement was appreciated, and the community and wider LGA is eager to benefit from the development of the Project through job opportunities, local economic injection through the use of ancillary services, and the creation of a CBS.

Implementation of a clear CBS, paired with mitigating risks early and robust ongoing engagement efforts will be critical in ensuring the stakeholders within the Mangoplah region are well-informed moving through the EIS phase and the wider SSD timeline.

4.2. Overall sentiment

In summary, this analysis has demonstrated that the sentiment towards the Project is majority neutral.

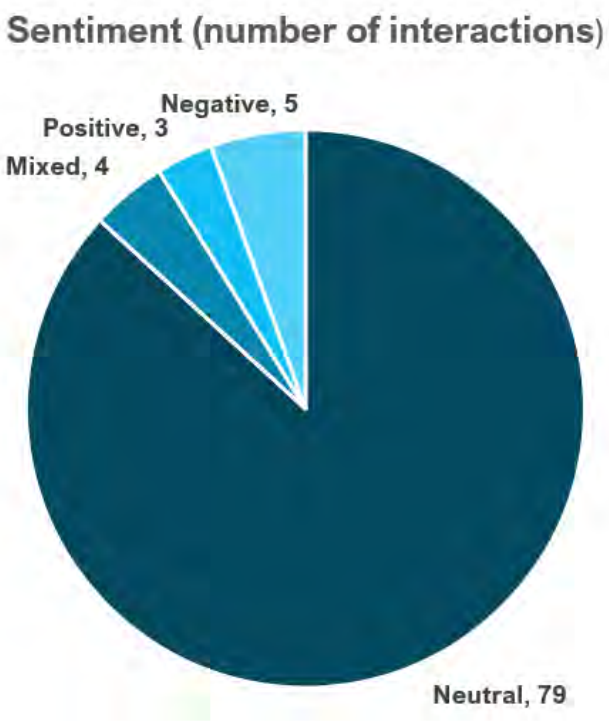


Figure 4-2 Overall sentiment

Sentiment towards renewable energy developments in the Wagga Wagga LGA has generally been mixed, with indications of a negative trend, as evidenced by media coverage of the Maxwell Downs Solar Farm (refer to the CSES in Appendix F). This sentiment may extend to other projects in the region, such as the Mangoplah BESS.

The analysis of sentiment can guide future community engagement efforts for the project. For example, if specific concerns are frequently reflected in negative sentiments, these areas could be prioritised for further discussions or investigation. Additionally, there is an opportunity to examine experiences from other projects to better understand community needs and expectations regarding community and stakeholder engagement, which can help guide future engagement activities.

5. Future engagement recommendations

5.1. EIS engagement

As indicated, NGH recommends that the Applicant:

- Review this report to consider the concerns identified and the likely mitigation requirements.
- Engage with DPHI to further discuss the likely expectations for engagement, impact analysis/mitigation and community benefit planning required in the EIS stage.
- Share decisions on mitigations with the non-associated receivers within 4 km, WWCC, elected MPs, First Nations groups, and the wider Mangoplah and Wagga Wagga communities.
- Work closely with non-associated receivers throughout the wider SSD development application process, including participation within specialist assessments and sharing information about their outcomes with them.
- Continue engagement and develop relationships with the local First Nations community.
- Engage in ongoing discussions with affected stakeholders about the aspects of the project that their feedback can influence during the environmental assessment process. This includes considerations related to visual impacts, site/road access, as well as community benefits.
- Be open and transparent with stakeholders and be committed to sharing information about the Project throughout the entire planning process.
- Work proactively to develop strong relationships with neighbours, residents, and community members.
- Mitigate impacts, develop a CBS program, continue discussions regarding potential VPA with WWCC, and deliver a sophisticated communications and engagement program for the EIS that engages comprehensively with the wider community.

5.2. Ongoing strategic communications and robust engagement

It will be essential for the Applicant to ensure strategic and robust communication with non-associated receivers and the wider community is applied to ensure the community is well informed on the Project and its updates, and how they may impact the local community — particularly VIA, fire and hazard assessments, and community benefits.

It is recommended that strong communication and engagement efforts continue, and where the opportunity arises for face-to-face meetings to talk through the Project further, the Applicant should proceed if possible.

It would also be beneficial to consider partnering with a broad range of stakeholders and community groups to provide advocates in the community who would be confident to speak to the merits of the project. Recommendations and suggestions of such stakeholders include stakeholders who have had previous experience working on energy infrastructure projects as well as other influential members of the community.

The collaborative development of a CBS would provide opportunities for further partnerships, particularly in the form of local infrastructure upgrades or provision of telecommunications services (to be explored further in the SIA during EIS). It would be beneficial to continue to explore opportunities for groups that may benefit or may appreciate the opportunity to be part of the process.

It is also recommended that the Applicant continues engaging and forging relationships with First Nations groups in the Mangoplah and Wagga Wagga regions. Such relationships are vital to the inclusion of First Nations groups in the renewable energy industry and ensures a strong connection to Country is protected and maintained.

5.3. Monitoring and evaluation

The effectiveness of the community engagement will be continuously monitored, reviewed, and adapted to ensure understanding and enhance participation in the project. This monitoring will align with the objectives outlined in the CSES.

NGH and the Applicant will continue to capture community feedback via a Stakeholder Relationship Management (SRM) platform during the issuance of SEARS and the EIS phase. This process will help to gather insights into participants' experiences and perceptions of the engagement process, allowing NGH and the Applicant to identify areas for improvement and adjust the strategies accordingly.

As highlighted in the CSES, the engagement approach will remain flexible and will be progressively updated throughout the Proposal's duration, particularly at the beginning and end of each project phase. Based on the monitoring and feedback analysis, NGH and the Applicant will adapt the engagement strategies to suit, which may include changing meeting formats, diversifying communication channels, or addressing specific issues that the community has prioritised.

6. Conclusion

In conclusion, this analysis has demonstrated that the sentiment towards the Project is majority neutral. Based on the feedback and engagement activity to date, the main opportunities and challenges have been identified:

Table 6-1 Opportunities and challenges

Opportunities	Challenges
• Community benefit sharing for the Mangoplah community • Economic injection through local ancillary services • Potential access route change suggested by R1. To be investigated further in the EIS • Employment and business opportunities.	• Accommodation shortages • Environmental impacts on waterways • Concerns in relation to fire risk • Concerns in relation to visual impact • Loss of prime agricultural land • Road access and conditions for construction.

During this analysis, non-associated sensitive receivers, WWCC, Federal and State Representatives, and the Bundyi Cultural Tours owner have been identified as important stakeholders for the Project as it moves into the EIS phase. It is recommended that the Applicant continues to engage with Federal and State Representatives and First Nations groups in the Wagga Wagga LGA and continues to work to build upon these relationships to enable strong community partnerships.

The feedback and engagement activities to date indicate that early engagement was appreciated, and whilst two (2) non-associated receivers acknowledge there will be some form of visual impact, they are willing to work with the project team to discuss concerns and participate in the relevant technical assessments.

The Applicant is encouraged to continue consultation with WWCC and work proactively and in partnership to address items of interest they have outlined. Implementation of a clear CBS program, paired with robust ongoing community engagement and mitigating risks early, will be critical to ensuring stakeholders within the Mangoplah township and Wagga Wagga LGA are well-informed moving through to the EIS phase.

It is advisable for the Applicant to maintain proactive engagement with non-associated sensitive receivers and the broader community to keep them informed about potential impacts, updates, and benefits. Specifically, ongoing discussions should be held with R1 regarding their proposal to use their road for construction access, as well as with R2-R3 to address concerns about visual mitigation measures. Additionally, SREA should investigate the possibility of repositioning the BESS to reduce visual impacts, as requested by R2-R3 and five (5) community members.

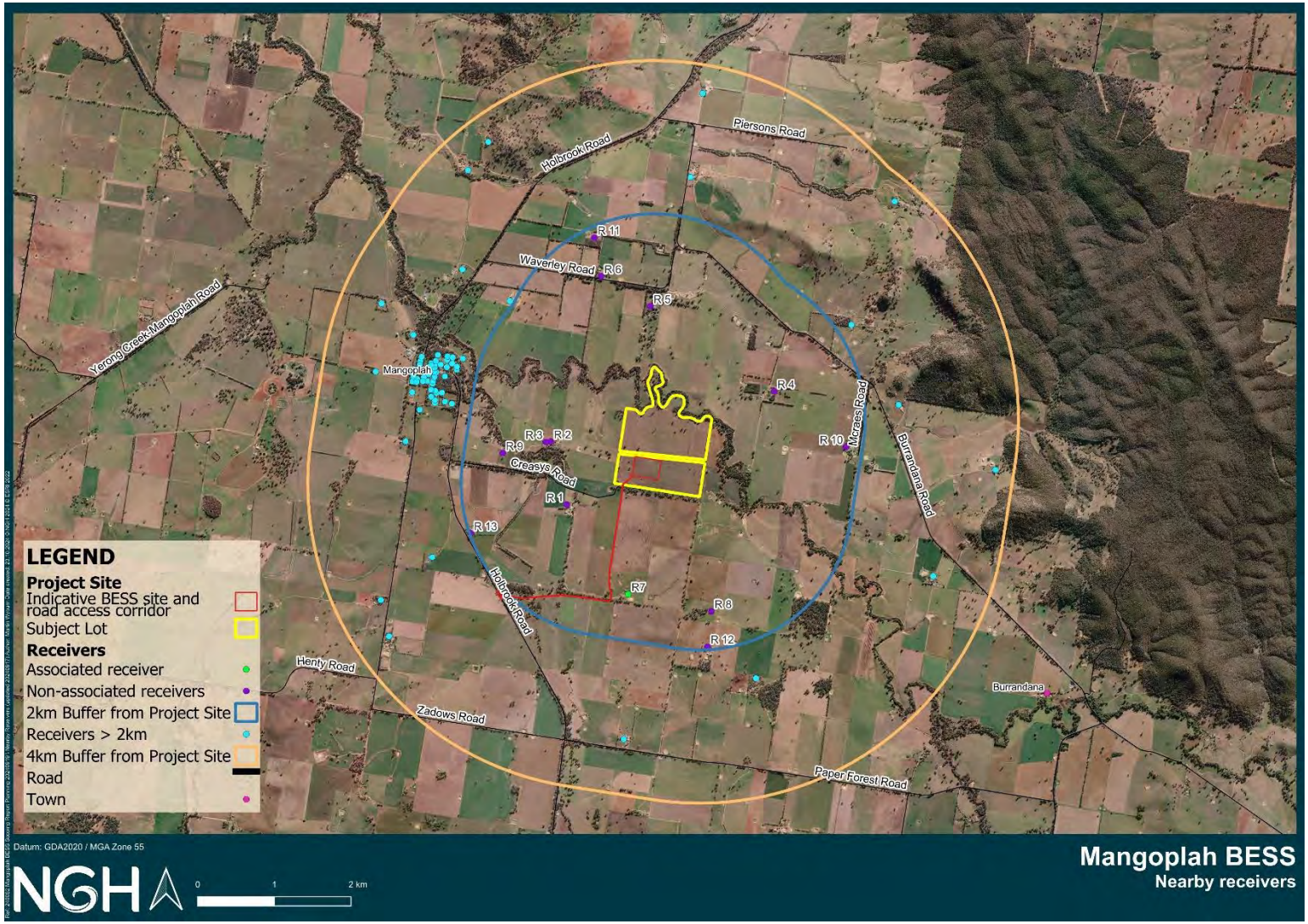
It is also recommended that the Applicant proactively shares assessment outcomes with non-associated receivers as the Project progresses. It will be essential for the Applicant to continue engaging with non-associated sensitive receivers and provide written communications and face-to-face engagements at a mutually agreed location (when possible), around questions and concerns.

Finally, as the Project moves through to the EIS phase, the Applicant would need to deliver a strong engagement and communications campaign to key stakeholders that is focused on shared benefits, community and stakeholder partnerships and proactive management of concerns when they are finalised.

It is also an opportunity to develop engagement materials that will further inform the community on renewable energy developments and provide further clarity on concerns and the benefits that the BESS can bring to the community of Mangoplah, the Riverina and Australia.

Appendix A – Posted letters

Appendix B – Non-associated receiver map



Appendix C – Fact sheet

Appendix D – FAQ document

Appendix E – Online survey

Appendix F – CSES

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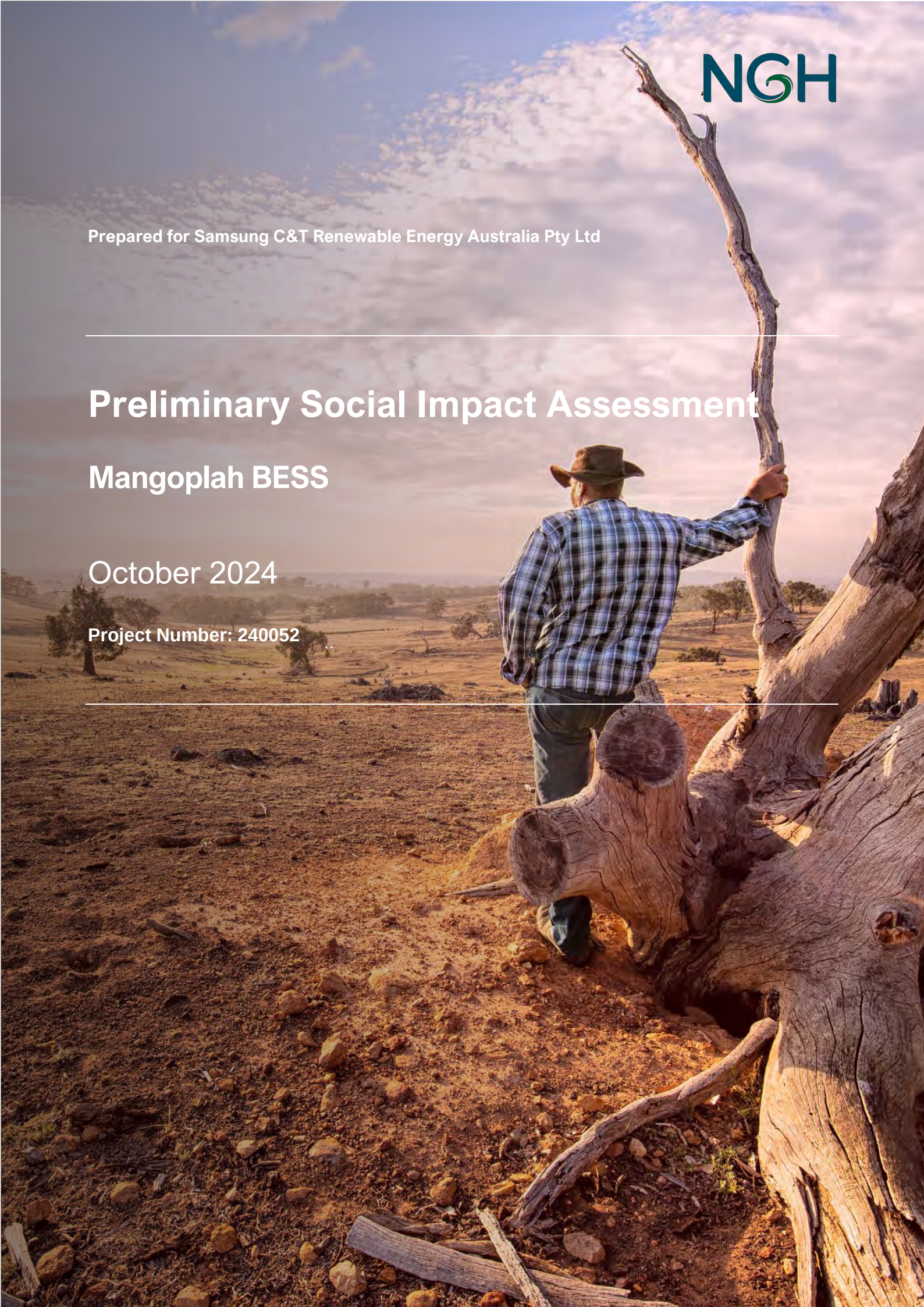
Appendix D Preliminary Social Impact Assessment



Prepared for Samsung C&T Renewable Energy Australia Pty Ltd

Preliminary Social Impact Assessment

Mangoplah BESS

October 2024

Project Number: 240052

Document verification

Project Title:	Mangoplah BESS
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Revision	Date	Prepared by	Reviewed and Approved by
Draft	21/10/2024	Glenn Willcox	Dr Sangay Wangchuk
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NGH Pty Ltd is committed to environmentally sustainable practices, including fostering a digital culture and minimising printing. Where printing is unavoidable, NGH prints on 100% recycled paper.

We acknowledge the traditional owners of this land and pay our respect to Elders past, present and emerging. We recognise that the First Nations peoples of Australia have traditionally managed the resources of this land in a sustainable way, and that they are the original stewards of the Australian environment.

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Executive Summary

NGH has been engaged by Samsung C&T Renewable Energy Australia Pty Ltd (SREA) (the Applicant) to complete a Preliminary Social Impact Assessment (PSIA) for the Mangoplah Battery Energy Storage System (BESS) (the Project). This PSIA has been prepared to inform the Scoping Report for the Project and aims s to assess potential impacts and opportunities of the Project across the eight '*Categorising impacts*' outlined in the SIA guidelines.

The Project site is approximately three kilometres east of the town of Mangoplah entirely within the City of Wagga Wagga LGA in southern NSW. The LGA sits entirely on the lands of the Wiradjuri people. The City of Wagga Wagga LGA stretches across 4,825 km^2 and recorded population of 67,609 people in 2021, with the median age being 35 years.

A mixed-method approach was adopted to inform the development which included targeted online interviews with key stakeholders, document analysis of grey literature and an online community survey.

During the PSIA numerous stakeholders that were interviewed expressed concerns about some of the perceived and potential impacts of the Project. These impacts were noted to be a concern at an individual and community level.

Key potential socio-economic benefits identified are the generation of 60 direct FTE positions during the construction phase and approximately 1-2 FTE positions during a proposed minimum 20 year and possibly 30-year operation phase. Other potential benefits include alternative income for landowners, demand for goods and services and training opportunities such as pre-employment support and upskilling to local people. In contrast, some of the key negative impacts identified include potential changes in the amenity, and increased dust and noise levels impacting the health and well-being of locals. Further, the influx of workers during the construction phase could potentially increase pressure on accommodation and services, impacting the community.

Recommended enhancement and mitigation measures responding to the potential positive and negative social impacts associated with the Project are provided. Further work is required to refine, develop, add to, and test (with the community) these suggested mitigation measures and management strategies as part of the full SIA to be undertaken within the Project's EIS phase.

1. Introduction

NGH has been engaged by Samsung C&T Renewable Energy Australia Pty Ltd (SREA) (the Applicant) to complete a Preliminary Social Impact Assessment (PSIA) for the Mangoplah Battery Energy Storage System (BESS) (the Project). This PSIA has been prepared to inform the Scoping Report for the Project.

The Project was declared a State Significant Development as defined under Part 4 of the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act). SREA is seeking approval under the EP&A Act and Schedule 2 of the NSW Environmental Planning and Assessment Regulation 2021 to construct and operate the Project.

1.1. Preliminary social impact assessment

This Preliminary Social Impact Assessment (PSIA) identifies the Project's social locality and an initial evaluation of potential social impacts in accordance with the DPIE Social Impact Assessment Guidelines (DPIE, 2023a), hereafter referred to as SIA guidelines, and Technical Supplement (DPIE, 2023b). This first phase of the SIA process is to assess potential impacts and opportunities of the Project across the eight '*Categorising impacts*' outlined in the SIA guidelines (DPIE, 2023a, p.19).

1.2. Socio-economic benefit

The proposed Project is estimated to generate approximately 60 direct FTE positions during the construction phase and approximately 1-2 FTE positions during a proposed minimum 20 year and possibly 30-year operation phase. Direct employment accompanied by additional demand for the supply of services through the Project offers the opportunity to generate steady and alternative income for landowners, residents and industry during both construction and operational phases, particularly in the supply services. For instance, the Project could potentially create demands for goods and services such as construction support, accommodation, supplying of construction materials, freight and local labour.

Other potential socio-economic benefits include training opportunities such as pre-employment support and upskilling to local people. This could particularly be the case for young people and for people from more vulnerable populations (including First nations people, the long term unemployed and women seeking employment in male dominated industries).

1.3. Community benefit

Community benefit sharing (CBS) programs are becoming increasingly popular in renewable energy projects to positively integrate renewable energy developments into local communities, benefiting both the Project proponent and the community (Clean Energy Council, 2019).

The Proponent will consider establishing a CBS following further consultation with the Wagga Wagga City Council and the community.

2. Methodology

A mixed-method approach was adopted to inform the development of this PSIA. It has been informed through the targeted online interviews with key stakeholders and document analysis of grey literature, and an online community survey administered by the Project's engagement team. Some of the relevant documents include literature of the broader socio-economic context, comparative studies, and publicly available data on government websites, e.g., the Australian Bureau of Statistics (ABS).

For the targeted PSIA consultation, key local stakeholders were identified through stakeholder mapping (Table 1), and then an appropriate sample of stakeholders was sought for PSIA interview within this Project Scoping phase. As such, six interviews were conducted to inform this PSIA. The semi-structured interviews were transcribed, and then thematic analysis was performed to identify themes surrounding the perceived potential impacts of the Project. In addition, information was drawn from interactions between some stakeholders and the NGH Communications and Engagement team who met with the stakeholders.

The Project's potential social impacts and benefits have been identified across the following eight categories: way of life, community, accessibility, culture, health and wellbeing, surroundings, livelihoods, and decision-making systems. Further, direct, indirect, and cumulative impacts have also been considered. Judgements were then made regarding the level of further assessment that will be undertaken within the full SIA (as part of the EIS phase) for each potential impact and benefit. As per the Technical Supplement, key factors that informed this judgement included the potential for and extent of cumulative impacts.

Table 1 Stakeholder mapping of the Wagga Wagga City LGA

Stakeholder category	Organisation	Outcome
First Nations	Mawang Gaway	Three First Nations stakeholders were interviewed
	Bundyi Cultural Tours	
	Bidya Marra Consultancy	
	Wagga Local Aboriginal Land Council	
Industry	Industry Capability Network (ICN)	One Industry stakeholder was interviewed.
	NSW Department of Primary Industries	
	NSW Office of Water	
	NSW Farmers Association	
	National Parks and Wildlife	

Stakeholder category	Organisation	Outcome
	Dept of Agriculture	
Regulators and Elected Members	Wagga Wagga City Council	Information was provided to inform this assessment from the NGH Communications and Engagement team's contact with Wagga Wagga City Council and the local state and federal parliamentary representatives.
	Local MP	
	Federal MP	
Service Deliverers	Sureway Employment & Training	Two Service Delivery stakeholder were interviewed.
	Education Services International Supply Group (ESISG)	
	Sarina Russo	
	VERTO	
	GTES	
	TAFE Wagga	
	Charles Sturt University (CSU)	
	Wagga Wagga High School	
	Mount Austin High School	
	Indi School	
	Riverina Anglican College	
	Kooringal High School	
	Daily Advertiser	
	Edge FM 102.5	
	Solar Professionals	
	Rural Fire Service	
	Country Women's Association	

Stakeholder category	Organisation	Outcome
NGOs and Interest Groups	Riverina Sustainable Food Alliance	Two interest groups were interviewed both of whom opposed the Mangoplah BESS project as currently proposed.
	Eunony Valley Association	
	Wagga Tigers Football and Netball Club	
	Wagga Men's Shed	
	Lion Club	
	Sunset Probus club	
	Apex Club	
	Maxwell Solar Group (Don Kirkpartick)	
Near Neighbours and affected/interested landholders	N/A (Individual landholders)	No direct PSIA interviews were held with this category of stakeholders although interview invitations were offered. However a minimum of seven near neighbours and/or affected/interested landholders had direct in person contact with the NGH Engagement team. This assessment was informed by input provided by the stakeholders these interactions while noting and reflecting this limitation.

3. Social locality

The social locality (area of influence) describes the social extent of a project and consists of the people who are potentially impacted by it. Affected people can include both 'communities of place' and 'communities of interest'. The social locality is determined by considering the nature and scale of potential impacts arising from the development and reviewing the characteristics of the affected communities.

The Project is approximately three kilometres east of the town of Mangoplah within the Wagga Wagga City Council LGA (Figure 1). Other nearby towns include The Rock (located 19km northwest) and Holbrook (located 35km south), with regional hub of the City of Wagga Wagga (located 30 km north), all in NSW. The main access to the Project Site will be from a proposed purpose-built access road that will intersect with the Holbrook Road approximately 2.6km south of Mangoplah.

Given this, the social locality was determined by identifying:

- Host and adjacent/near neighbour properties.
- Localities/townships likely to be impacted and/or benefit from the Project: Mangoplah (SAL 12480).
- Wagga Wagga City Council LGA (LGA 17750).
- Major towns/cities providing core services to these localities/townships: Wagga Wagga City (UCL 112019)
- The existing networks of travel, the main transportation corridors, and infrastructure and service hubs in the region.

Figure 1 Map showing social locality

4. Existing environment

This section provides an overview of the socio-economic conditions within the Project's social locality. Unless otherwise stated, all population and demographic data presented here are from the 2021 Census. Table 2 below presents a summary of key data.

The proposed Project is located entirely within the City of Wagga Wagga LGA in southern NSW. The LGA sits entirely on the lands of the Wiradjuri people (AIATSIS, 2024). The main population centres include the city of Wagga Wagga and nine villages: Collingullie, Currawarna, Galore, Humula, Ladysmith, Mangoplah, Oura, Tarcutta, and Uranquinty (City of Wagga Wagga, 2024). The City of Wagga Wagga LGA stretches across 4,825 km^2 and recorded population of 67,609 people in 2021, with the median age being 35 years (ABS, 2021). The median weekly household incomes in the City of Wagga Wagga LGA is lower and Mangoplah SAL (Suburbs and Localities) higher than median weekly household income for the state of NSW, as shown below in Table 2. This varied relative disadvantage is further reflected within the IRSD scores, which indicate the socio-economic index of advantage and disadvantage (SEIFA) (ABS, 2023).

According to the NSW Council of Social Service (NCOSS, 2023), the Wagga Wagga region, including Mangoplah, faces critical housing shortages and limited affordable housing options. Housing costs in Australia generally have increased at a greater rate than incomes for decades, exacerbating the issue. The rental vacancy rate for Mangoplah (postcode 2652) have consistently remained below 2% since June 2018, indicating a very limited housing supply. The rate briefly increased to 2% in April 2024 but has since declined, reaching 1% in June 2024 (SQM Research, 2024).

The rental vacancy rate for Wagga Wagga (postcode 2650) have consistently remained below 3% since January 2019, indicating a very limited housing supply. The rate was regularly above 2% from October 2007 to April 2020 peaking at 5.7% in December 2011 but has since declined, reaching 0.7% in June 2024 (SQM Research, 2024).

This indicates extremely high rental demand. According to SubursbFinder (2023), a vacancy rate of 3% is considered healthy, with vacancy rates of less than 2% indicating high rental demand and rates above 4% mean that there is more housing supply than demand. The median weekly rent in Mangoplah was $200 while the City of Wagga Wagga LGA was $300 based on the data maintained by ABS (2021).

Change in annual Gross Regional Product (GRP) for the Wagga Wagga City LGA across a twenty year gap from 2004 to 2023 was an increase of $1.4 billion(.idcommunity, 2024). However, the data showed average change in GRP of 1.12% growth from 2004 to 2020 followed by average change of GRP of 4.4% growth over the three years following (2021 to 2023) with GRP for 2023 recorded as $5.41 billion (.idcommunity, 2024). The economy is largely driven by Agriculture Forestry and Fishing [17.2], Health Care and Social Assistance [12.8] and Manufacturing [8.63], which are key employment industries in the Wagga Wagga City LGA region (.idcommunity, 2024).

Table 2 Selected demographic characteristics of key communities

Indicator (ABS 2021)	Mangoplah (SAL12480)	**Wagga Wagga (UCL 112019)**	**Wagga Wagga (LGA 17750)**	**NSW (State)**
Population (no.)	291	49,686	67,609	8,072,163
Median age (years)	47	37	35	39

Indicator (ABS 2021)	Mangoplah (SAL12480)	**Wagga Wagga (UCL 112019)**	**Wagga Wagga (LGA 17750)**	**NSW (State)**
Aboriginal and/or Torres Strait Islander people (%)	3.4	7.4	9.5	3.4
Top three occupations (%)	1. Managers [36.9] 2. Professionals [18.1] 3. Machinery Operators and Drivers = Labourers [10.6]	1. Professionals [20.9] 2. Technicians and Trades Workers [14.7] 3. Community & personal services workers [13.9]	1. Professionals [20.7] 2. Technicians and Trades Workers [15] 3. Community & personal services workers [14.5]	1. Professionals [25.8] 2. Managers [14.6] 3. Clerical & administrative workers [13.0]
Top three industries of employment (%)	1. Agriculture Forestry and Fishing [41.2] 2. Retail Trade [10] 3. Education and Training [8.1]	1. Health Care and Social Assistance [13.4] 2. Education and Training [10.7] 3. Retail Trade [10.5]	1. Health Care and Social Assistance [17.9] 2. Education and Training [10.6] ***1.*** Public Administration and Safety [9.9]	1. Health Care and Social Assistance [14.4] 2. Retail Trade [9] 3. Professional, Scientific and Technical Services [8.9]
Number of respondents for occupation and employment (above)	160	23,590	33,283	3,684,158
Median total household income ($/weekly)	2,075	1,502	1,638	1,829
Private dwellings	117	21,807	28,151	3,357,785
SEIFA IRSAD (decile)[1]	9	N/A	7	N/A

[1] *IRSD: Index of Relative Socio-economic Disadvantage, standardised to a distribution with a mean of 1000 (national average) and a standard deviation of 100.*

5. Social impacts

This section presents the key findings of the social impact scoping exercise, undertaken as per DPHI's SIA Scoping Worksheet (see Appendix A). As such, this section provides a summary of the Project's initially identified potential social impacts and benefits at this time within the Project's Scoping phase.

As per DPHI's Technical Supplement (DPIE, 2023b), judgements have been made about the level of further assessment that would be undertaken during the full SIA (as part of the EIS phase) for each potential impact and benefit. Key factors informing this judgement include the extent of cumulative impact and the degree of material, as well as social impact (based on the extent, duration, severity of impact, and the sensitivity and level of concern/interest of those impacted).

Cumulative effects are expected to principally relate to the following areas: economic impacts such as increased employment, procurement, and training opportunities and increased local economic activity; pressure on social infrastructure, services, housing, and accommodation; and changes to landscape and scenic amenity. As the full SIA is undertaken and more information becomes known about the Project, the social context, and the near neighbours' and broader community's responses to it, the assigned levels of assessment may change, and/or more social impact challenges and/or benefits may come to light.

Some of the key potential positive opportunities perceived are:

- Employment: The Project has the potential to generate employment to the local community.
- Diverse economy: An increase in business opportunities through an increase in local business transactions, accommodation, use of services, etc., is foreseen in the locality.
- Training opportunities: With the existence of several similar projects in the region, the need for skilled workforce increases. There may be an opportunity for the Project, in collaboration with TAFE, local high schools and similar institutions to initiate short-term tailored courses and work placements to build local capacity.
- Community investment: The potential of benefit resulting from the community benefit sharing frame work.

During the PSIA numerous stakeholders that were interviewed expressed concerns about some of the perceived and potential impacts of the Project. These impacts were noted to be a concern at an individual and community level. It was also noted that several of the proposed benefits of this project were considered unlikely to be experienced by the community as they were considered to be generally fanciful or to be challenged by the local and regional social and economic context. Further key potential perceived positive and negative impacts were noted in the community feedback survey for the Project and more may become apparent during later stages of the engagement and SIA process. Table 3 outlines the Project's identified potential impacts and the level of assessment that will be required during the full SIA phase.

Table 3 Project's identified potential impacts

Potential impact	Issues	Stakeholder categories (as provided in Table 1) potentially impacted	Assessment level in full SIA
Way of Life, and Health and Wellbeing			
Impacts on privacy, peace, and quiet enjoyment	Research has shown that, at a broad scale, most Australians would either tolerate, be ok with, approve, or embrace living near new renewable energy infrastructure, with solar farms being viewed most favourably (McCrea. et al, 2024). Research undertaken during the current project provided a broad range of opinions regarding the acceptance of and toleration for the development of renewable energy infrastructure in the Mangoplah area and broader Wagga Wagga region. While some interviewees viewed the transition to renewable energy as vital and saw the implementation of renewable projects in the Wagga Wagga LGA as a welcome development, others held strong reservations about the location of this project in particular, in addition to concerns about the broader transition to renewable energy process. During the construction phase, there may be adverse social amenity impacts associated with traffic, noise, and air quality for neighbours near the Project site and/or along the proposed access route. These may impact on nearby residents' way of life - including on their commuting or travelling time, their experience of travel, and on their privacy, peace, and quiet enjoyment. The five respondents to community feedback survey stated that they live locally and all expressed strong opposition to the project. When considering the values of the local area, all respondents (5) nominated landscape and views and natural values including biodiversity, ecosystems, etc as the most prominent. Visual impacts for near neighbours were a key amenity factor for all respondents to the survey. Four respondents selected potential for noise impacts for near neighbours and temporary construction impacts (i.e., noise, traffic, dust) as key amenity factors to consider. One interviewee noted that there may be some challenges and compromises required in local communities, however such accommodations are a small cost to pay to minimise current and future impacts of climate change. They also noted that high quality community consultation, involving diverse community groups could assist finding agreement and acceptable outcomes for both development projects and the local community.	Near Neighbours	Detailed
Stress and anxiety to those opposing the Project		Near Neighbours Interest Groups	Detailed
Amenity impacts (air quality, noise)		Near Neighbours	Detailed
Community			
Potential changes to community cohesion	As reported from other similar projects, Orana BESS SIA (NGH, 2023) , the proposed Project can be grounds for contestation within local communities which can negatively impact on community cohesion, trust, and relationships. This can affect communities as a whole, and/or distinct groups within communities. Past experiences of similar projects can be a significant barrier to acceptance of future development projects. The Orana BESS SIA (NGH 2023a) noted that the local community drew on past experiences of non-resident workforce influxes and expressed concern about the potential for future worker influxes to disrupt the community feel. Stakeholders interviewed for this project did not see an influx of non-resident construction workforce for the Mangoplah BESS as being a key community issue for this project other than in regard to housing pressures (see below). This was either due to the relatively small scale of the project, associated workforce, the relatively short construction timeframe and the low unemployment rate in the region. However, some interviewees, who were interviewed collectively as members of an interest group, stated that they would do all they could to ensure that the Project would not proceed. They felt that the broader community in the Mangoplah area held similar views, and this lack of community support should ensure that it doesn't proceed. As far as they were concerned renewable projects proposed to date for the region have plenty of cost and no or negligible benefit for local communities. As noted above, one interviewee felt that broadly targeted community workshops to discuss projects rather than separate	Broader community	Detailed
Change in community feel		Broader community	Detailed
Increased community investment		Broader community but likely most impactful for near neighbours	Detailed

	consultation with sub groups was vital to achieving a social license for the project. This preference for open broadly attended community engagement meetings was also raised with NGH by near neighbour and/or affected landholder stakeholders. However, it was also noted that smaller targeted gatherings of stakeholders can assist in capturing the views of key stakeholders who may not be comfortable to express themselves in a larger and more open forum. It was noted that consultation and engagement material should be in formats that work for First Nations and older communities and individuals, as an over reliance on electronic technologies can be a barrier to access information and miss opportunities for less technologically savvy stakeholders to engage and express opinions. Four respondents to community feedback survey expressed disruption to community cohesion as a key concern from the project. A strong preference was expressed for the benefits from this project should be targeted for and managed by the Mangoplah community. There were concerns raised about any funds flowing from the Mangoplah BESS project associated with a Community Benefit Scheme being managed by the Wagga Wagga City Council and not funding Mangoplah specific community benefits.		
Access			
Increased pressure on housing and accommodation	The rental vacancy rate for the Wagga Wagga LGA is understood to currently feature a very limited housing supply and high rental demand (SQM Research, 2024). Increased pressure on the local housing market was perceived to be a substantial issue for both the local community and the project during the construction phase, particularly in the context of several projects requiring large workforces either commencing or scheduled to commence in the near future. One stakeholder interviewed stated that some larger employers in the area had established long term lease arrangements with some motels to provide accommodation for housing workers. Vacancy rates for short, medium and long-term accommodation in the Wagga Wagga city area are low which and non-resident workforces may exacerbate this issue. Holbrook was mentioned by one interviewee as a possible alternative option for housing a temporary workforce for the project and stated that they understood that a motel in Holbrook was offering accommodation, transport and catering for workers staying in Holbrook. The timing of the construction phase relative to other large construction projects in the region will likely have some bearing on challenges for the project and the cumulative impacts of all projects and associated workforces on the local housing and accommodation market. An interviewee stated that the delivery timeframe for a large project was doubled (i.e. 4 years to 8 years) so as to reduce the flow impacts from large projects excessively engaging tradespeople, at the expense of activities such as residential dwelling construction.	Broader community	Detailed
Increased pressure on social infrastructure	Social infrastructure encompasses the key services and resources that sustain the liveability of communities, and strongly influences perceived and real quality of life (Australian Urban Observatory, 2021). These extend from health, education and essential services to community support and development resources, and leisure and recreational opportunities. Regional areas often experience social infrastructure gaps, compounded by distance and cost of service provision. A lack of social infrastructure such as housing, schools, hospitals and internet connectivity may act as a barrier to attracting and retaining workers and supporting increased economic activity in a region. This has been identified as a constraint for renewable energy development in the Central West Orana REZ (OECC, 2022b). Based on knowledge of capacities of social and health service providers in the region, one interviewee felt it unlikely that there would be a notable or unsustainable increase in demand for social and emergency services and recreational facilities stemming from an influx of construction workers during the construction phase of projects of the Mangoplah BESS scale. They acknowledged that cumulative factors created by several large-scale projects could create further issues. However, it was noted that projects of the scale of a BESS may counterintuitively have a greater impact on social infrastructure than larger projects that would warrant the construction of accommodation facilities/camps and the provision of in-house medical and social services. However, one interviewee stated that Wagga Wagga is very fortunate with the health services available in the region and felt that in this regard and other areas of social infrastructure a project such as the proposed BESS would be a "*small blip on the radar*" having minimal impact.	Broader community	Standard
Increased traffic on local roads	During the Project's construction phase, an increased traffic flow is expected. This may potentially affect daily activities such as mail deliveries, movement of school buses and increased in wear and tear on local roads triggering frustrations on local road users. This	Broader community but likely most impactful for near	Standard

	was raised as a potential issue by some interviewees who claim to have engaged with near neighbours and others in the immediate Mangoplah area. However, the main issue raised by interviewees regarding local roads, was to ensure that the project would bear the cost of the road upgrades and ongoing maintenance that might be required. All five respondents to community feedback survey expressed that transport planning and the use of local roads was a key factor for consideration.	neighbours	
Culture			
Potential damage to Aboriginal cultural values and material	A project specific Aboriginal Cultural Heritage Assessment (ACHA) should be implemented in accordance with guidelines for such assessments in NSW and must include a formal process of consultation with the local First Nations community and other stakeholders who have connection to the Country on which the Project Area sits and surrounds. One interviewee stated that the Proponent should ensure that community engagement processes should be undertaken in ways that can reach First Nations stakeholders who may not be as willing and/or able to use technology to participate in engagement processes. It was also stated that first hand meetings between the landholder and First Nations representatives can assist in removing some of the barriers to collaboration driven by concern about and founded on misunderstandings of Native Title/Land Claims and the aims of First Nations people. One interviewee stated the importance of all aspects of First Nations consultation and engagement and stated that multiple personal from all companies involved in the project development need to be fully aware of the cultural context of the Project Area via cultural awareness training to ensure cultural safety in regard to tangible and non-tangible cultural values. They stated, that "*we don't want to have any Wiradjuri culture that's destroyed by ignorance or not understanding. Ignorance is no excuse*". One interviewee voiced concerns about potential impacts on native and culturally important animal species and habitats that are likely present in the area.	First Nations	Standard
Surroundings			
Safety risks (Inc fire)	An assessment of bushfire risks and fire risks associated with the Orana BESS was undertaken for the Project EIS (NGH 2023b). This identified BESS fire to be a very low risk, with no significant predicted off-site impacts given the large separation distance to the nearest dwelling. However, community's concerns for fire risk is expected considering this potential impact reported in CSIRO's (McCrea., Walton. et al, 2024) and other similar reports. Fire threat was a concern raised by one interviewee and they noted that the project information provided to potential stakeholders referred to Fire and Rescue NSW as being the responsible agency for developing a Fire Safety Study for the BESS site. The interviewee stated that the NSW Rural Fire Service should be the relevant agency to address fire risk as they are responsible for fire engagement in rural areas, and it would be an RFS team who would be first responders to a fire on site. All five respondents to community feedback survey expressed that fire management practices were an important factor to consider regarding potential environmental impacts from the project.	Near neighbours Service deliverers	Standard
Change to landscape character and visual amenity	The contained scale of BESS projects can lead to less widespread concern about landscape change relative to other renewable energy projects such a solar and wind farms, however the cumulative impact was noted in one similar project (NGH 2023a). Several interviewed stakeholders expressed concern that the placement of the BESS in Mangoplah represented the "*thin edge of the wedge*" and thought that a solar farm, or "*solar factory*" as they prefer to call it, was almost certain to be located in the vicinity of the BESS in future. One interviewee interviewed for this Project stated that the location of the BESS in "*rolling hill country*" would lead to significant impacts on the visual amenity enjoyed by many local people, even if screening plantings to minimise impacts to visual amenity and landscape character were installed. Several interviewee s interviewed stated that renewable energy projects should be located on "*flat, lower rainfall country*" to the west of the Wagga Wagga Region, including in the Southwest REZ as the land was generally of lower economic value and land holdings were larger. It was presumed that siting of these larger properties would reduce the impacts on neighbours as renewable infrastructure would be located further from neighbouring properties. In contrast one stakeholder interviewed stated that renewable energy projects would likely provide relief from a decades long	Broader community but likely most impactful for near neighbours	Detailed

	"*assault*" of what they perceived as degrading mainstream agricultural practices, and would allow Country the chance to recover. This challenged an orthodoxy in that, what appears to be pleasant rural agricultural character and visual amenity to some stakeholders, can be understood to be Country that is under constant threat from mainstream agricultural practices. Indeed, the lower valued lands mentioned previously in which some interviewees stated they would prefer renewable projects be located on, were understood by this interviewee to have been degraded by decades of agricultural misuse and mismanagement of land and water values. As such, the ongoing implementation of conventional agricultural practices should not be viewed as benign and/or or preferrable to the impacts of renewable energy projects. It was stated that income streams from renewable projects may allow landholders to farm less intensively and reduce the agricultural impact on Country. In contrast, when considering local landscape characteristics and their importance, respondents to the community feedback survey, nominated the following points as being most important: o The way the land, creeks and trees look. o Prime farming land that should remain that way. o Keeping it in its current untouched form. Several interviewee s expressed concern about impacts on waterways in the vicinity of the Project Area being potentially impacted by chemical leaks from the BESS site.		
Livelihoods			
Increased local employment opportunities	One interviewee stated the current unemployment rate in the town of Wagga Wagga city LGA was 2.5% in the March 2024 quarter (id community 2024) which they believed would be classified as full employment by some conventional metrics. While the Project could potentially diversify the local economy through increased use of services such as accommodation, service centres and local businesses providing services and materials. Low unemployment currently with major projects on the horizon, suggest that finding a suitable latent local workforce is unlikely. One interviewee suggested that work placements via NSW Education Vocational Education and Training (VET) Program may assist to fill some entry level roles and provide a legacy of personal and vocational development for VET participant from this and other projects. An interviewee stated that issues with capacity of labour may also be coupled with limitations of supplies of raw and processed materials for construction projects such as quarry materials and concrete. Local suppliers may need to choose preferred projects and supply those only. Such a capacity constraint may see economic opportunities transferred to other regions, who may have greater capacity to supply materials and/or labour. Two stakeholders interviewed focussed their comments on the perceived economic benefits that would potentially flow from this project. One interviewee questioned whether there was a latent workforce in the region that could take up opportunities, particularly without a focus on pre project training for potential employees. Another interviewee stated that the question of whether there was a latent workforce was a moot point as they believed that the creation of employment, particularly for locals, is a *"major lie"* being pushed by renewable energy proponents and supporters to convince the broader community of the merits and benefits at a local level of the broader energy transition project. They viewed that specialist teams would be engaged for the construction phase and opportunities for locals would be minimal. One interviewee made clear that First Nations people/organisations should be approached for engaging in employment and training opportunities as early as possible in the Project schedule. However, another interviewee stated that the prospects of all projects proposed for the region meeting targets for First Nations workforce participation were very constrained regardless of when the consultation and engagement is undertaken. An interviewee spoke of a program where First Nations prison inmates were being assisted in transitioning into housing and employment at the end of their sentences. This was viewed as a potential source of employees for major projects in the region. They also made the comparison between the cost of incarcerating recidivist inmates in contrast to investing in people early in life to divert them from the criminal justice system. The cost benefits and societal benefits were considered to be substantial, particularly when stretched over generations.	Industry First Nations	Detailed
Increased economic activities (diversification of income stream)		Industry First Nations Service Deliverers	Detailed

Loss of agricultural land	Though loss of agricultural land and potential impacts on agricultural production has been raised despite the relatively constrained nature of a BESS development within a relatively small Project Area. This concern is exacerbated by a belief among several stakeholders that the installation of a BESS at this site is a preliminary step toward the establishment of one or more a solar farms in close proximity, impacting a broader area of land. One interviewee referred to a "*very hostile*" stakeholder meeting undertaken regarding the Maxwell Solar farm in the region and the hostility at the stemmed largely from community concern about the apparent destruction of high value agricultural land. The same interviewee stated that the Maxwell Solar Farm and Mangoplah BESS project share a lot of commonalities particularly as there is an apparent belief that the Mangoplah BESS will be followed at some stage by the installation of a solar farm in close proximity. The project information provided to the stakeholders stated that the in part the Project Area was selected as it is not classified as Strategic Agricultural Land (SAL), however several interviewees questioned this status. Several interviewees requested an opportunity to visit the Project Area and undertake independent assessment of the status of the land in question. Loss of agricultural land was identified as an important factor for consideration by respondents to the community feedback survey. Some concerns were noted in interviews around the decommissioning of renewable infrastructure and that the future decommissioning and restoration of the site was a concern and that individual landholders and rural communities may be left to" *carry this future burden*". People wanted more information and some certainty about the decommissioning process. One interviewee stated that rather than relying on *"solar factories"*" and large-scale renewable projects, the uptake and installation of roof top solar on dwellings in Australia should be supported to increase installations for as many properties as possible, including rental properties and community 'power plants' should be supported by subsidising batteries for residential/domestic users. As noted above, one stakeholder interviewed stated that renewable energy projects could provide relief from a decades long assault of what they perceived as degrading mainstream agricultural practices, and would allow *Country* the chance to recover. Noting that conventional agricultural practices should not be viewed as benign or preferrable to the impacts of renewable energy projects. It was stated that income streams from renewable projects may allow landholders to farm less intensively and reduce the agricultural impact on Country. The Orana BESS SIA recorded community perceptions that the project would have a low impact upon agricultural production on the property and the region over the life of the Project (NGH 2023a).	Broader community but likely most impactful for near neighbours	Standard
Potential impacts to property values and insurances	Generally, the potential impact on surrounding land values of renewable energy developments remains a common source of potential conflict between proponents and residents. The Orana BESS SIA noted, some near neighbours expressed a high level of concern about potential negative impacts to property values form that project (NGH 2023a). Changes in land and property values are complex and no definitive research that clarifies whether the presence of large-scale renewable energy projects negatively impacts upon nearby property was available. This limitation is even more pronounced for BESS development on nearby property values. In the absence of definitive and directly relatable research about the impacts of BESS on nearby property values, it was not possible to make an evidence-based assessment about the impact of this Project on the property values of the surrounding properties. (NGH 2023a:) However, several stakeholders interviewed, some as part of a group interview, stated that they were aware of comparable situations in the broader region which had led to a reported drop in value of a neighbouring property of 30% and potentially up to 40%. This reported drop was based on research by the interviewee and details of the valuation processes were not provided, however the potential value reduction was considered to be potentially disastrous by the interviewee. It was stated that, for many rural land holders, that the asset value of their land is their retirement savings/superannuation and not many Australians would support or tolerate a development that would lead to a potential 30% or larger fall in their superannuation. Three of the five respondents to the community feedback survey considered potential impacts to property values as a key social and economic impacts of the proposed Project.	Broader community but likely most impactful for near neighbours	Detailed

Decision-Making Systems			
Perceived lack of procedural fairness and exclusion from decision-making	With many renewable projects coming to the region, there may be perceived lack of inclusion in the planning, assessment, and consultation processes. This may potentially affect the community's support to the Project – leading to a loss of trust by the community to their local council and authorities. Several members of a stakeholder group interviewed stated that the lack of locally specific detail in the project engagement documentation distributed to the local community was a constraint on arriving at informed decision making by community members. It was stated that the communications and engagement documents distributed to potential stakeholders for this project was too light on specific detail regarding both proposed benefits and likely challenges from the project. There were concerns raised about any funds flowing from the Mangoplah BESS project associated with a Community Benefit Scheme being managed by the Wagga Wagga City Council and not funding Mangoplah specific community benefits. A strong preference was expressed for the benefits from this project should be targeted for and managed by the Mangoplah community.	First Nations Near-neighbours Interest Groups Regulators and Elected Members	Detailed
Increased participation in decision making		First Nations Near-neighbours Interest Groups	Standard

6. Social impact management

The draft recommended enhancement and mitigation measures outlined in Table 4 directly respond to the potential positive and negative social impacts associated with the Project that were identified within this PSIA (Table 3). Further work is required to refine, develop, add to, and test (with the community) these suggested mitigation measures and management strategies as part of the full SIA to be undertaken within the Project's EIS phase.

Table 4 Summary of the draft recommendations and management strategies

Impact categories	Draft recommended mitigation/enhancement measures	Suggested management strategy
Livelihoods	• Engage with key stakeholders to support workforce and career pathway development initiatives related to the Project. • Map out local suppliers to gain a comprehensive understanding of local capability. • Prioritise engagement of local workers, contractors and suppliers. • Ensure specific opportunities for First Nations people and businesses, young people and women. • Ensure open, transparent, timely and accessible communication of Project information and potential impacts with stakeholders and near-neighbours.	➢ Accommodation and Employment Strategy ➢ Community and Stakeholder Engagement Strategy
Community	• Ensure open, transparent, timely and accessible communication of Project information and potential impacts with stakeholders and near neighbours. • Work with economic development stakeholders to create awareness of the Project successes and benefits. • Consider implementing a locally targeted Community Benefits Program that aligns with community preferences: consider First Nations assistance and all potential legacy-creating.	➢ Accommodation and Employment Strategy ➢ Community and Stakeholder Engagement Strategy ➢ Locally targeted Community Benefits Program
Accessibility and Way of life	• Prioritise engagement of local workers, contractors and suppliers. • Regularly engage with Council to address accommodation concerns relating to construction, prior to and during, construction. • Engage with accommodation providers to avoid negatively impacting on tourism opportunities and vulnerable populations who are utilising temporary accommodation. • Traffic Impact Assessment, Visual Impact Assessment (VIA), and Noise and Vibration Assessment will be undertaken within EIS	➢ Accommodation and Employment Strategy ➢ Community and Stakeholder Engagement Strategy ➢ Amend Project design (where necessary and possible) to limit visual and other impacts for near neighbours ➢ Construction Environmental Management Plan

Impact categories	Draft recommended mitigation/enhancement measures	Suggested management strategy
	phase. Ensure social concerns (identified within SIA and Project-wide engagement processes) are integrated into these technical assessments. • Regular engagement with Council and the community to discuss and adaptively respond to any emerging community concerns relating to pressure on social infrastructure.	(including Landscape Management Plan) ➢ Environmental Management Plan
Health and wellbeing	• Air Quality Management Plan (or similar), Hazard or Fire Management Plan (or similar), Visual Impact Assessment (VIA), and Noise and Vibration Assessment will be undertaken within EIS phase. Ensure social concerns (identified within SIA and Project-wide engagement processes) are integrated into these technical assessments. • Establish a responsive Grievance Mechanism to ensure community concerns are heard and responded to in a timely manner.	➢ Amend Project design (where necessary and possible) to limit impacts for near neighbours on health and wellbeing. ➢ Grievance Redress Mechanism.
Culture	• Aboriginal Cultural Heritage Assessment and (if required) Aboriginal Cultural Heritage Management Plan should be undertaken within EIS and post approval/construction phase.	➢ Aboriginal Cultural Heritage Assessment ➢ Aboriginal Cultural Heritage Management Plan (if required) .
Surrounding	• Visual Impact Assessment (VIA) will be undertaken within EIS phase. • Consider relocation BESS to manage stakeholder concerns if deemed appropriate and possible	➢ Amend Project design (where necessary and possible) to limit impacts for near neighbours.
Decision-making systems	• Ensure that there is a high level of meaningful engagement and open channels of communication for all near neighbours. • Ensure that any locally targeted Community Benefits Program aligns with community preferences: consider First Nations assistance and all potential legacy-creating.	➢ Community and Stakeholder Engagement Strategy ➢ Community Benefit Sharing Program

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