



NGH



SCOPING REPORT

Coleambally Battery Energy Storage System

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ACRONYMS AND ABBREVIATIONS

AHIMS	Aboriginal Heritage Information Management System
AOBV	Areas of Outstanding Biodiversity Value
ASC	Australian Soil Classification
AWE	Department of Agriculture, Water and the Environment (Cwth)
BAM	Biodiversity Assessment Method
BC Act	<i>Biodiversity Conservation Act 2016</i> (NSW)
BCS	Biodiversity, Conservation and Science
BDAR	Biodiversity Development Assessment Report
BESS	Battery Energy Storage System
Biosecurity Act	<i>Biosecurity Act 2015</i> (NSW)
CID	Capital Investment Value
Cwth	Commonwealth
DECCW	Department of Environment, Climate Change and Water (NSW) now EES
DoEE	Department of the Environment and Energy (Cwth)
DPIE	Department of Planning, Industry and Environment (NSW)
EEC	Endangered ecological community – as defined under relevant law applying to the Proposal
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cwth)
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
ESD	Ecologically Sustainable Development
FM Act	<i>Fisheries Management Act 1994</i> (NSW)
GHG	Green House Gases
GW	Gigawatt
ha	hectares
Heritage Act	<i>Heritage Act 1977</i> (NSW)
ISEPP	State Environmental Planning Policy (Infrastructure) 2007 (NSW)
km	kilometres
LEP	Local Environment Plan
LGA	Local Government Area

LUCRA	Land Use Conflict Risk Assessment
MNES	Matters of National environmental significance under the EPBC Act (<i>c.f.</i>)
MW	Megawatt
Noxious Weeds Act	<i>Noxious Weeds Act 1993</i> (NSW)
NPW Act	<i>National Parks and Wildlife Act 1974</i> (NSW)
NSW	New South Wales
NV Act	<i>Native Vegetation Act 2003</i> (NSW)
OEH	Office of Environment and Heritage (NSW), now BCS
PCT	Plant Community Type
PHA	Preliminary Hazard Assessment
PMST	Protected Matters Search Tool
REF	Review of Environmental Factors
sp/spp	Species/multiple species
SSD	State Significant Development
TEC	Threatened Ecological Community

1. INTRODUCTION

The Subject Land is located around 600 m west of the Kidman Highway, within the Murrumbidgee Local Government Area (LGA). The Proposal consists of a Battery Energy Storage System (BESS), with approximately 33 sets of Battery system cubicles, 33 sets of Power Conversion system cubicles, a power step-up transformer and approximately one kilometre (km) of transmission line (132 kilovolt (kV)) connecting to TransGrid 33/132/220 kV Coleambally substation. The BESS footprint would occupy an area of approximately 4 hectares (ha) and would generate approximately 100MW capacity with 200 - 400 megawatt hours (MWh).

The subject site includes Lot 100 DP1139115 (~178.5 ha) directly south of Ercildoune Road and north of Kook Road, NSW. Kook Road and Tubbo Channel run between the Subject Land and Coleambally Solar farm. Brett's State Forest occurs direct adjacent to the Subject Land. The TransGrid substation that feeds electricity generated from the solar farm (and proposed BESS) is located northeast of the Subject Land on the northern side of Ercildoune Road.

One farm dam and two registered Aboriginal cultural heritage sites occur within the Subject Land. No mapped watercourses occur on the site.

The following terms are used throughout this Scoping Report:

- Proposal: the construction and operation of the standalone BESS system and associated ancillary infrastructure
- Subject Land (site): Lot 100 DP1139115 which includes the Development Footprint and existing easements, is subject to the site inspection.
- Development Footprint: this is the actual area of disturbance required for the construction of the BESS system. The footprint is approximately 4 ha which includes the BESS and the proposed transmission easement (Option 1).
- Locality: Areas within 10 km of the subject site.
- Proponent: Coleambally BESS Pty Ltd (ACN 650 098 561)

The layout of the site including the areas detailed above can be seen in Figure 1-1.

1.1. The Proponent

Risen Energy is a renewable energy company delivering projects across a number of countries around the world including China, Germany, Australia, Mexico, India, Japan, and the United States of America. Risen has established solar farms at a number of locations in New South Wales and across Australia. Risen invested, built and is operating cutting-edge utility-scale solar farm projects across the country, including 132MW Merredin Solar Farm in Western Australia and 134MW Yarranlea Solar Farm in Queensland. These large-scale solar farm projects are each capable of generating enough energy to supply approximately 32,000 Australian homes. The Yarranlea Solar Farm occupies approximately 250 ha of land containing 360,000 photovoltaic (PV) panels and during construction created in excess of 200 jobs locally. The Merredin Solar Farm, occupying 460 ha of former agricultural land, created a similar number of local jobs and generates enough energy to power 42,000 Western Australian homes.

Risen is currently progressing with a number of large to small scale solar farms and battery storage facilities within New South Wales.

Risen was founded in 1986 and established its presence in the Australian market in 2008 supplying solar PV panels and energy storage systems to the residential market, commercial market and utility-scale market. It is one of the pioneers in the solar industry and has committed to this industry as a research and development expert, an integrated manufacturer from wafers to modules, a manufacturer of off-grid systems, an investor, a developer and solution provider for large commercial and utility-scale projects. Risen operates in Australia from offices in Brisbane and Melbourne. Risen operate on -site at Merredin Solar Farm in Western Australia and Yarranlea Solar Farm in Queensland. Risen is the third largest global solar module manufacturer, developing approximately 8,600 MW/year and has reached a module production capacity of 14 gigawatts (GW). Risen commenced investments in utility-scale solar in 2018 and its Australian subsidiary is growing rapidly. It continues to keep a stable pace with an average debt ratio at around 60% from 2011 to 2020.

Risen will continue to develop and invest in renewable energy projects in Australia with a target of 2 GW in next three years.

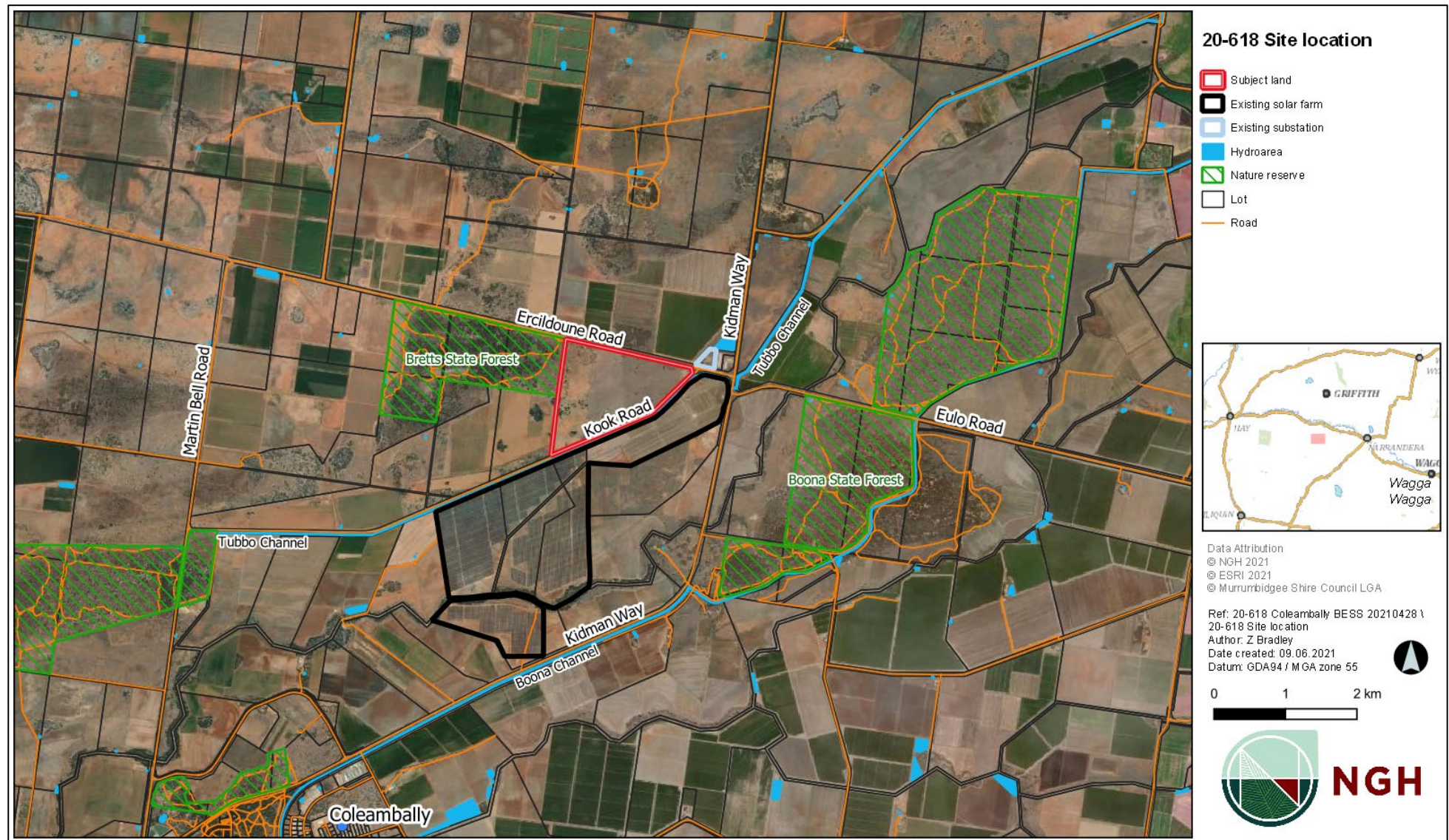


Figure 1-1 Site location

2. THE PROPOSAL

2.1. Subject Land

The Development Site is located within Lot 100 DP1139115 directly south of Ercildoune Road and north of Kook Road, NSW. Kook Road and Tubbo Channel run between the site and Coleambally Solar Farm. The TransGrid substation, which feeds electricity generated from the solar farm (and proposed BESS), is located northeast of the site on the northern side of Ercildoune Road. The site is located approximately 8.3 km northeast of the Coleambally township and approximately 140 km west-northwest of Wagga Wagga. The site is illustrated in Figure 2-1.

No mapped watercourses occur within the site. One farm dam and two registered Aboriginal cultural heritage sites are located within the site. Tubbo Channel runs parallel to the south and eastern boundaries of the site and is a diversion channel off Main Canal – the primary irrigation canal for the area.

The site is situated within the Murrumbidgee Shire Council Local Government Area (LGA) and is zoned as RU1 - Primary Production, under the Murrumbidgee Shire Council Local Environmental Plan 2013 (LEP 2013). Land use of the Development Site and surrounding areas is predominantly agricultural, including irrigated cropping (rice, wheat and cotton) and light grazing. The site does not appear to have been subject to irrigation from available aerial photography. It is currently used for grazing sheep.

Access to the Development Site would be from the Kidman Highway and then either Ercildoune Road or Kook Road. Paddock trees and native vegetation are located across the site. Bretts State Forest is adjacent to the site to the west, Boona State Forest is located ~1.5 km to the east. Topography of the site includes flat alluvial plains with low relief and slope. The site lies at an elevation range of 120 – 124 m above sea level.

2.1.1. Sensitive Receivers

There are no sensitive receivers to within 1 km of the subject site however, there are three located within 2 km. The closest urban receivers are located 7km southwest in the town of Coleambally. The three receivers within 2 km are residences located on rural properties that have their view partially or entirely shielded from the site by vegetation, landform or the nearby Solar Farm infrastructure. The proximity of sensitive receivers can be seen below in Figure 2-1.

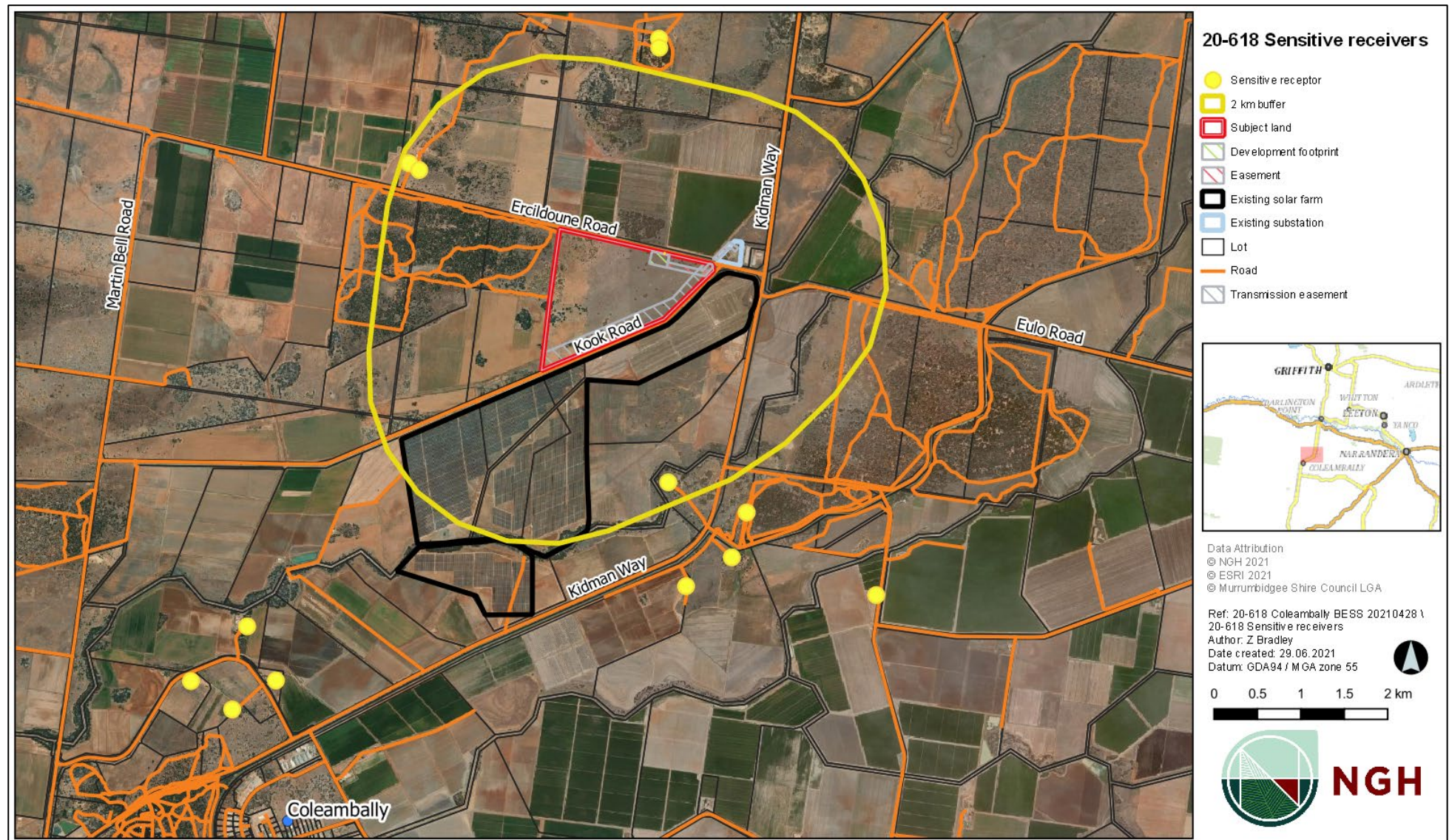


Figure 2-1 Sensitive receivers

2.2. Proposal description

The Proposal would involve the develop, construction, operation and decommissioning of a BESS with a capacity of 100MW/ 400 MWh (i.e., 100 MW of electricity discharged over 4 hours). This facility would consist of up to 33 sets of cubicles housing batteries, 33 sets of cubicles housing power conversion systems, an on-site step up power transformer and approximately 1 km of 132kV transmission line routing to substation. These items and the general layout of the site can be seen in the detailed design plans, Appendix A

The key elements of the Proposal include the following:

- Subdivision of the development footprint and easement areas from Lot 100 (DP1139115).
- 33 sets of cubicles (Figure 2-2) housing lithium-ion batteries and 33 sets of cubicles housing power conversion systems (PCS). Each PCS (Figure 2-3) includes one or two inverters to convert Direct Current (DC) to Alternating Current (AC) and one transformer to combine and step up the voltage.
- A 33/132 kV switching substation to step up MV voltage to transmission line voltage class for interface with TransGrid transmission substation.
- A new 132 kV underground cable transmission line connecting the BESS switching substation to the TransGrid transmission substation.
- Associated ancillary infrastructure including:
 - Cables connecting infrastructure
 - Internal access tracks
 - Staff amenities
 - Operations and maintenance building
 - Storage and warehouse building
 - Water tanks
 - Construction laydown areas
 - On-site car parking
 - Security fencing.



Figure 2-2 Example of a battery cubicle



Figure 2-3 Power conversion system

The capital investment value (CIV) of the Proposal would be greater than \$30 million. The development would be State Significant Development (SSD), based on an approximate Capital Investment Value (CIV) of \$105 million, in accordance with Schedule 1 Clause 20 of the State Environmental Planning Policy (State and Regional Development) 2011. A detailed CIV report would be prepared as part of the development application process, which would confirm the CIV.

The grid connection for the BESS would be connected through underground 132 kV transmission line connecting the step-up power transformer on-site to the Coleambally substation. Connection route is indicated in Figure 2-4 and Appendix A. The BESS would run underground 132 kV power cable to the existing transmission easement and then run north in parallel between 132 kV and 220 kV lines. It would then connect to a 132 kV bay in the TransGrid Coleambally substation. The BESS system would be charged from 132 kV substation and would be discharged into the 132 kV substation.

The construction phase is anticipated to take approximately 8 to 12 months. It is expected that the operational life of the Proposal would be approximately 30 years, including the potential for infrastructure upgrades after about 15 years for battery replacement and equipment upgrade. The decommissioning phase would involve removal of all above ground infrastructure and return of the Development Site to its existing land capability for agricultural use.

The proposal layout is illustrated in Figure 2-2.

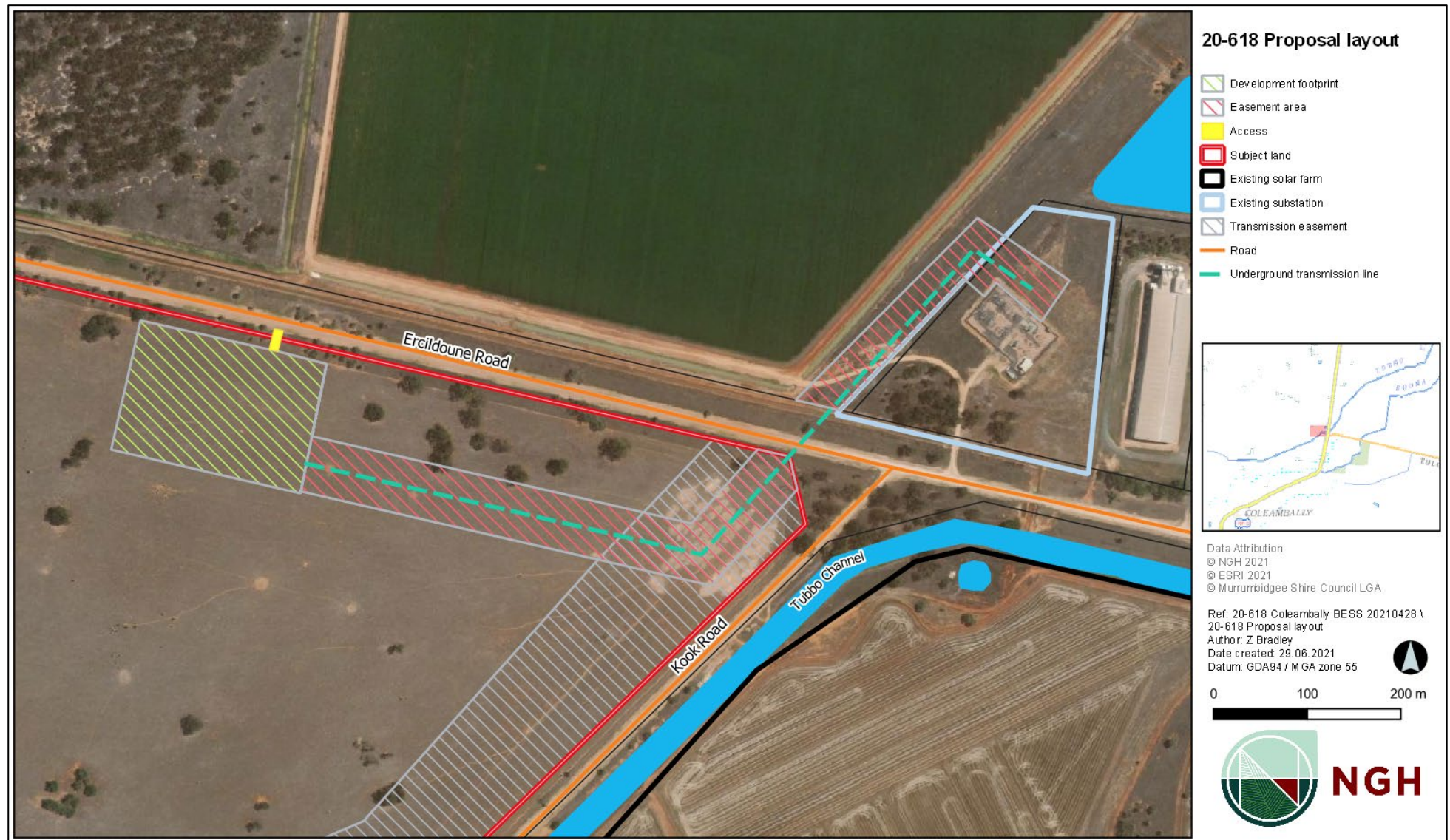


Figure 2-4 Proposal layout

3. PROPOSAL NEED AND BENEFITS

The Proposal would provide an opportunity for optimising the management and security of energy for use in peak periods, particularly in a time of change when Australia begins to experience shortages due to population growth and coal fired power station closures. Further, energy from solar, wind and low carbon alternatives can be generated during their optimal generation times (i.e., generation of solar electricity during the day) and stored, thus minimising reliance on carbon and reducing greenhouse gas emissions (GHG) and the onset of climate change.

Climate change refers to the warming temperatures and altered climatic conditions associated with the increased concentration of greenhouse gases in the atmosphere. Climate change projections for Australia includes more frequent and hotter hot days and fewer frost days, rainfall declines in south-eastern Australia and more extreme weather events including intense rainfall, severe drought and harsher fires (CSIRO, 2020).

Discussion is provided below about how the Proposal would support the security of energy in NSW and how it would support NSW and Commonwealth climate change commitments.

3.1. Energy security

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 (DIS, 2015). Nine coal-fired power stations have closed since 2011-2012, representing around 3,600 MW of installed capacity (Commonwealth of Australia, 2016). The reduction in energy supply from coal-fired power stations requires the development of reliable and sustainable energy supply.

The BESS aims to improve reliability and security of the electricity network by storing energy during periods of low demand and dispatching energy during periods of peak demand and emergency events. The Proposal would be a key piece of infrastructure in supporting Energy Storage Development in regional Australia.

3.2. Commonwealth climate change commitments

The Proposal supports Commonwealth climate change commitments including the United Nations Paris Climate Change Agreements.

A legally binding and universal agreement on climate was reached at the 2015 Paris Climate Conference, with the aim of keeping global warming below 2°C, by reducing greenhouse gas emissions. Australia has committed to reducing greenhouse gas emissions by aiming for the following targets:

- 5% below 2000 levels by 2020.
- 26 to 28% below 2005 levels by 2030.
- Net zero emissions in the second half of this century.

The Proposal would contribute to Australia's effort in helping meet these targets by storing excess energy for use in times of peak demand which would reduce wastage and additional energy to be made during peak times.

3.3. NSW climate change commitments

The Proposal is also consistent with the current goals and targets for renewable energy generation in NSW. These include:

- Goal 22 of the NSW 2021: A plan to Make NSW Number One (NSW Government, 2011):
 - Contribute to the national renewable energy target [i.e., 20% renewable energy supply] by promoting energy security through a more diverse energy mix, reducing coal dependence, increasing energy efficiency and moving to lower emission energy sources.
 - Contributing to achieving the NSW target of zero net emissions by 2050.

3.4. Proposal benefits

Further to providing more secure energy for times of need and supporting Commonwealth and State level efforts to mitigate the effect of climate change, the Proposal would have the following other benefits:

- The Proposal improves the stability and reliability to the electricity network by storing energy during periods of low demand, including those from more intermittent renewable sources (residential solar and grid scale solar/wind projects), and dispatching energy during periods of peak demand and emergency events.
- Direct employment opportunities during the construction period (expecting approximately 50 construction jobs during peak construction period) and up to one ongoing job during the 30-year operational life.

Once operational, it is anticipated that there would be one permanent worker for its operation as the site would be largely remotely operated. Economic benefits to the surrounding communities would be less, however the local labour force may be used for ongoing monitoring and maintenance.

4. SITE SELECTION AND SUITABILITY

Battery energy storage can provide reliable and efficient energy by shifting the supply of electricity from times of high supply and low demand to times of low supply and high demand. The site is located adjacent to the Coleambally Solar Farm and Coleambally Substation. Both the Solar Farm and substation are located northeast of the town of Coleambally. The Subject Land is located directly adjacent to both the substation and the solar farm. The existing electricity transmission lines traverse the Development Site. The Development Site was chosen due to the proximity to the existing substation and solar farm, appropriate zoning, minimal existing vegetation, lack of mapped heritage and adequate land size.

The site is located away from residential areas and located near to a substation and the Coleambally Solar Farm. The size of the land also allows for appropriate setbacks that would mitigate impacts on nearby receivers. Favourable site conditions including minimal erosion and flood risk, low relief and level slope, lack of nearby receivers, lack of heritage items and low biodiversity in the area suit the Proposal. The existing transmission lines traversing the site and nearby substation allow for reduced disturbance and expense to connect the BESS to electrical infrastructure.

5. CONSULTATION

5.1. Principles

Best practice engagement involves the community and stakeholders in all decision-making stages of a Proposal. The community plays a role from Proposal conception, through the assessment process and on to Proposal development. Effective community consultation has three important functions:

1. Facilitate deeper understanding of potential issues and decisions required for the Proposal.
2. Enhance the quality of decisions made for the Proposal.
3. Allow people to contribute to decisions that affect their lives.

5.2. Approach

Risen Energy has demonstrated a commitment to engaging proactively with the local community and gaining an appreciation for their needs, concerns and aspirations. To facilitate this commitment, NGH developed and delivered a targeted Communications and Engagement Strategy (CES) to support the project scoping stage and inform the environmental impact stage. The CES is included as Appendix C.

5.3. Objectives

The engagement objectives outlined in the CES are to:

1. Facilitate targeted consultation with sensitive receivers and targeted stakeholders.
2. Gather community and stakeholder feedback to inform the scoping report.
3. Identify and analyse any community and stakeholder concerns that need to be considered in the project planning and delivery.
4. Support the renewable energy industry through demonstrating smart and respectful engagement and impact assessment considerations.
5. Support Risen Energy in maintaining a positive corporate image.

5.4. Regulatory consultation requirements

Development assessment provisions are contained in Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The proposed development of a standalone BESS would be characterised as electricity generating works, given recently gazetted amendments to the ISEPP that modified the definition of electricity generating works to include electricity storage.

Electricity generating works are permitted with consent under Clause 34(1)(b) of ISEPP, in a prescribed rural, industrial or special use zone. The site falls within the Murrumbidgee Council LGA, and initial site investigations identify that the site is zoned RU1 Primary Production under the relevant Local Environmental Plan, which is a prescribed zone. It is assumed that the transmission line would also be within a prescribed zone and therefore permissible with consent.

As the development would be SSD (refer section 6.1.2), consultation with council for subdivision of Lot 100 DP 1139115 for the BESS is not required. However, Council would need to be consulted for the broader Proposal works. Early consultation with council is provided in Table 5-2.

5.5. Community and stakeholder context

The engagement approach recognised that Coleambally is a unique area with a rich, modern history and an immensely proud community.

The town of Coleambally is a small town in the Riverina of New South Wales, Australia, in Murrumbidgee Council. Situated south of the Murrumbidgee River, 645 km southwest of Sydney, the town is nestled amongst a cypress pine forest and is the youngest town in NSW. It officially opened in 1968 to serve as the administrative, commercial, and social centre for the Coleambally Irrigation Area. The town has an approximate population of 1331.

A planned community with gardens and streets named after local birds, the town was established in 1968 to service the **Coleambally Irrigation Area**. Its main industry has been rice growing but other crops are also grown, such as wheat, cotton, maize, sorghum and soya beans.

The Coleambally Irrigation Area is based in the fertile New South Wales Riverina region supplying irrigation and drainage services to nearly 500 farms via a world class, open, gravity-fed channel network. The area spans across over 400,000 ha including over 300,000 ha which is serviced by the West Coleambally Outfall Channel. Servicing farms typically 220 ha in size and using advances in innovative technologies and software we use a Total Channel Control (TCC) system which is solar powered and fully automated, allowing farmers' water orders to be precisely filled within two hours.

This complex system is managed by **Coleambally Irrigation Co-operative Limited** (CICL), Australia's fourth largest irrigation company. CICL delivers between 200,000 and 300,000 ML a year on farm. Irrigated agriculture drives a demand for services and is the basis of the communities social and economic fabric¹. CICL's office is in the centre of the Coleambally Township.

5.6. Proposal stakeholders

A summary of the Proposal stakeholders is outlined below in Table 5-1. The intention of the broader stakeholder assessment is to inform how communications and engagement will occur beyond the scoping phase to support the proposal through its planning and delivery.

¹ As noted on the Coly Irrigation corporate profile <https://www.colyirr.com.au/coleambally-irrigation-area>

Table 5-1 Proposal stakeholders

Stakeholder group	Targeted stakeholders	Assumed interests
Adjacent and near neighbours	1 commercial premise - Yarrow Park Award Winning Cellar Door - 165, Kyola Road (a olive oil business cellar door) 1 cultural development centre - Tirkandi Inaburra Cultural and Development Centre - LOT 84 Kidman Way, Coleambally NSW 2707 11 residential dwellings on rural properties at these Coleambally addresses: 71, 110, 65 and 112 Kyola Road 6,67 and 21 Hogans Lane 263 and 302 Rosewood Road 428 and 647 Ercildoune Road	- Property impacts - Visual impacts - Access changes - Environmental changes - Commercial agreements - Community benefits - Governance and ownership of the developing entity - Impacts on agricultural outputs
Broader Community and region	Coleambally township residents, businesses, and organisations	- Visual impacts - Transport access impacts or changes - Environmental changes - Community benefits - Governance and ownership of the developing entity - Regional economic development
Representative or Special interest groups	- Coleambally Irrigation Cooperative - Local Aboriginal Land Council	- Property impacts - Visual impacts - Access changes - Environmental changes - Commercial agreements - Community benefits - Governance and ownership of the developing entity - Impacts on agricultural outputs
Government Agencies/Utility owners	- DPIE and other agencies through the SEARs process - Murrumbidgee Council - TransGrid	- Impacts on local infrastructure - Assessment process - Consideration of impacts - Consideration and mitigation of concerns - Consultation process - Application of standards and frameworks

5.6.1. Adjacent and near neighbours

An aerial assessment of adjacent and nearby neighbours indicated that there are three properties categorised as sensitive receivers within a 2 km radius and 10 other properties nearby, as shown by the yellow dots in Figure 5-1. These properties and the associated dwellings/facilities became the

primary focus for the scoping engagement activities, noting that discussions later confirmed that some properties were under common ownership.

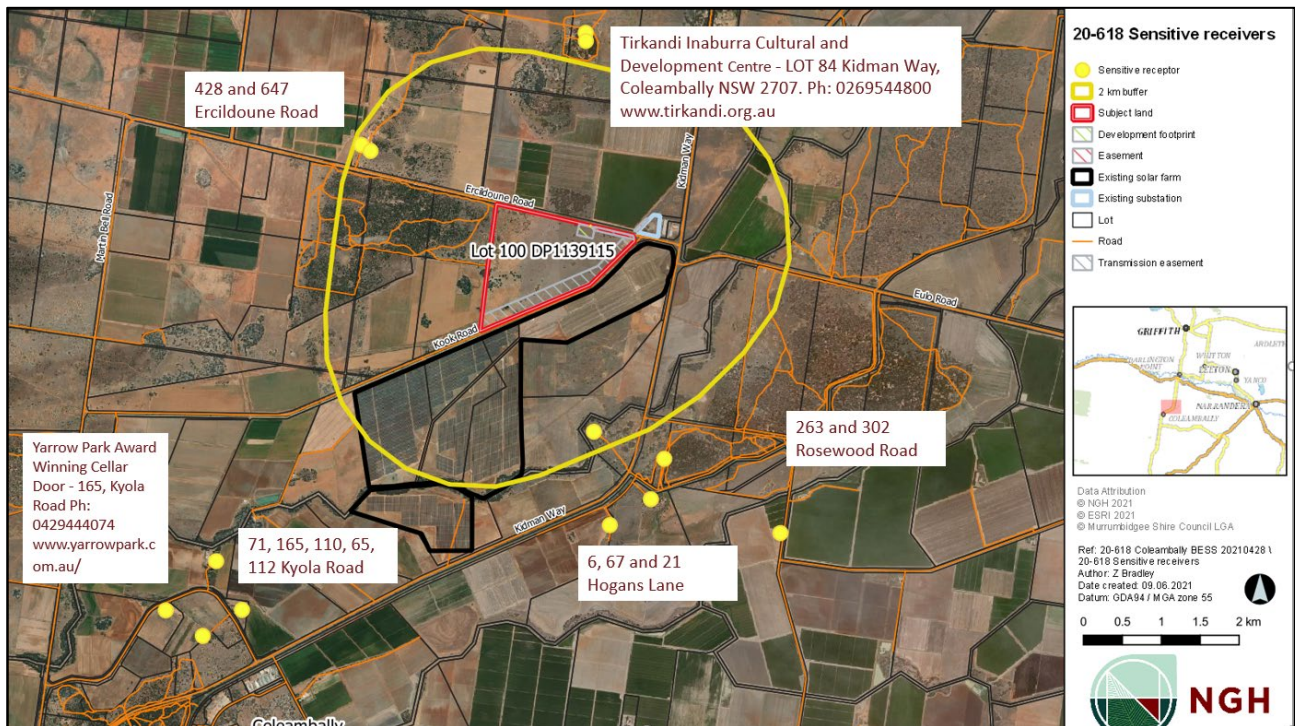


Figure 5-1 Proposal adjacent and nearby neighbours

5.6.2. Tirkandi Inaburra Cultural and Development Centre

Tirkandi Inaburra Cultural and Development Centre Inc. is a not-for-profit organisation founded by Aboriginal community members of the Riverina region (Wiradjuri Country).

Every year, Tirkandi Inaburra supports more than 50 young Aboriginal males (typically between 12 and 15 years old) who are at risk of disengaging from school and society and becoming involved in the juvenile justice system. Their culturally based residential care program identifies their talents and dreams, expands their cultural identity, and builds the resilience they need to thrive in their communities. The centre runs a 10-week evidence-based program and is designed to help young Aboriginal males make better life decisions, remain engaged in full-time school, study or work, and minimise the risk of involvement with the criminal justice system.

In addition to this program, Tirkandi plays a significant role in the area through providing Welcome to Country, smoking ceremonies and cultural dancing for significant events. They are interested in forming partnerships with local organisations and where possible, seeking sponsorship funding for facility improvements and program costs that exceed their operational funding.

5.6.3. Murrumbidgee Council Community Farm

Nearby the Proposal site is a 379 ha not-for-profit working Demonstration Farm. The Community Farm began back in 1990 when a group of determined and dedicated locals pursued the acquisition of land for a community farm plus the allocation of water.

Many individuals and businesses volunteered their expertise, time, machinery, merchandise and services to make it all happen. Instead of having smaller fundraisers, community organisations are prepared to volunteer their time and machinery to grow the crops in return for some profits. For

example, at harvest time local farmers converge on the farm with headers, trucks, tractors, bins and augers to help.

Since 1996-97, the farm has provided a financial return to the community through the proceeds of cropping activities in excess of \$1 million to date. This has had a huge impact in the local community aiding the service clubs, schools and football clubs in large scale building projects and the like. The continued injection of such substantial funds has kept our communities moving forward. Funds have also flowed back into the community through payments to contractors and the purchase of farm inputs.

This farm was discussed as part of the consultation with the Deputy Mayor and will be discussed in the future with the Council. The farm supports fundraising for many local community groups, including football clubs, Lions, Apex, local schools and more.

5.7. Engagement activities

The scoping phase engagement activities aimed to discuss the proposal with targeted stakeholders to build an understanding of potential concerns and opportunities for this development. It also aimed to gather information that could inform the broader communication required to support the development application and delivery stages.

A summary of the key consultation and activities carried out to date is provided in Table 5-2.

Table 5-2 Consultation schedule

Stakeholder	Date	Consultation activity	Purpose and outcomes
TransGrid	30th September 2020	Contact TransGrid regarding capacity and system strength	Ensuring capacity and system strength will not be an issue for this project. Connection Enquiry Response was received from TransGrid on 30.09.2020 to confirm the connection capacity and system strength.
NSW Department of Planning Industry and Environment (DPIE)	25 May 2021	Project scoping meeting	To introduce the project, identify constraints and seek DPIE advice for preparation of Scoping Report.
Murrumbidgee Council	2 June 2021	Meeting	To introduce the project and discuss the proposed subdivision.
	11 June 2021	Meeting	To ensure council has no issues and would support the subdivision to facilitate the development. This resulted in a commitment to keep Council updated on consultation and to share project technical information.
	22 June 2021	Phone call to discuss proposed consultation and offer a face-to-face meeting	Outline the consultation steps and confirm whether another Council meeting was required. It was agreed that another meeting could be held once targeted

Stakeholder	Date	Consultation activity	Purpose and outcomes
			landowner engagement was completed and the scoping report was submitted.
Sensitive receivers and nearby businesses	23 June 2021	Letters sent to 12 properties and called the two businesses within this area.	The letters introduced the proposal and offered the recipients the opportunity to discuss the proposal face to face. These arrived on 25 June 2021.
Coleambally Irrigation Co-operative Limited and RFS representative	23 June 2021	Phone call to Kevin Kelly, maintenance manager for CICL and RFS representative.	To introduce the proposal and discuss any concerns or areas that required clarification. This conversation demonstrated positive support for the proposal, in addition to requesting specific clarifications around fire management, any water impacts and transport access. Kevin agreed to be part of future conversations part of the next stage of planning.
Sensitive receivers, nearby businesses and elected representative	28 June 2021	Meetings held at agreed locations with: • Rob Black – neighbouring landowner and Deputy Mayor • Adrian Hays, nearby landholder (641 Kidman Way) and Manager of Coleambally Ag'nVet • Ben and Mike Witham, nearby landowners at 647 Ercildoune Road • Jo Ens, Coordinator at Tirkandi Inaburra Cultural Development Centre • Steve Hogan, nearby landowner at 104 Lucas Road A phone conversation was also held with Paul Bellato, nearby landowner from 263 Rosewood Road. Paul said he agreed with the proposal and did not need to meet. Messages were left by phone or in mailboxes of the landholders that did not respond.	To discuss the project and capture any concerns for inclusion in the scoping report. Develop stakeholder relationships to support subsequent stages. These discussions demonstrated support for the proposal, as well as a useful list of areas for clarification in the subsequent stages (see section 5.9). All stakeholders agreed to be contacted in the future for broader engagement around the next stage of planning.

Stakeholder	Date	Consultation activity	Purpose and outcomes
All stakeholders	<i>After scoping report submission</i>	<i>Once the scoping report is submitted and the SEARs are issued, broader engagement can occur as</i>	<i>To achieve broader understanding of the proposal, capture potential issues and work through mitigations. This is also an opportunity to secure a positive long-term relationship with the local community and regional stakeholders.</i>

Further community engagement activities would continue through the progression of the Proposal into the development application, construction, and operational phases. This will include engaging the broader community, including the Local Aboriginal Land Council (LALC). This will be defined after the scoping report is submitted and SEARs issued.

5.8. Consultation feedback

The stakeholder and community discussions demonstrated strong support for the Proposal.

All those interviewed commented that it makes sense in the proposed location given the proximity to the grid and amongst the local solar farms. Many commented that this is the way things are going and that it is exciting to see this change (to increased renewable energy and storage) occurring.

The stakeholders were asked to identify any issues or areas for clarification as the planning progresses. These were largely consistent in each conversation and are listed below.

Table 5-3 Key areas of stakeholder interest

Topic	Key areas of interest
Fire and heat management	- How heat is managed in the BESS to prevent fires. - How fires should be managed in the BESS area. - Procedures for RFS fighting fires near and around the BESS – including fire truck access and clear indicators for onsite fire extinguishers. - What the effect/impact of a fire in this area would be – including the potential for water, soil and air pollution.
Land management	- Weed and grass management – ensuring the site is well presented and does not cause spreading of weeds onto neighbouring properties. - Ongoing agricultural use (noting that ongoing grazing was discussed).
Vegetation screening	There was a desire to include vegetation screening to reduce the visual impact of the BESS.
Water channel protection	- Protection of the water channel during the transmission connection. - Management of the BESS area to ensure no contaminants move into the water channels.
Environmental management	- Management of leakage. - One stakeholder asked if there are any environmental risks associated with batteries, such as radiation or heat.
Community contributions	All stakeholders enquired about potential community contributions. The contributions of the Neoen Solar Farm were mentioned as an example (\$30,000 per annum). Potential areas of contribution identified were: - The nearby Community Farm. - The Tirkandi Cultural Development Centre facilities and programs.
Opportunities for local industry participation	- Opportunities for the locals to contribute to construction. - Reasonable management of payment terms and contracting that considers the cash flow needs of small businesses (one stakeholder

Topic	Key areas of interest
	cited previous challenges with payment from large companies involved in similar developments in the area).
Transport access	One stakeholder noted that the section of Kidman Way between the intersection with Eulo Road and Ercildoune Road can be dangerous due to constraints around turning areas. This would need to be considered as part of the Proposal traffic analysis and in the context of construction vehicle movements.
Waste and asset management	- How the asset is managed - levels of maintenance. - How the battery waste is managed. - What happens to the battery at the end of its useful life – is it recycled?
Management of water levels	- Flood immunity. - Requirements for earthworks given the proposed site is a low point for the area. - Would this include a 'bung' around the battery units to prevent leakage?
Risk management	One stakeholder asked what primary risks the developer would be managing and can their risk assessment be provided once the facility is operational?
Construction management	How dust, noise, traffic and environmental impacts will be managed during construction.

5.9. Opportunities

There is an opportunity to develop a positive and collaborative relationship with the community and Proposal stakeholders. This relationship can be developed meaningfully through continuing to share information on the Proposal, clarifying key areas and demonstrating how feedback has been applied to the development.

It also seems logical to consider and agree a suitable form of ongoing community contributions during the EIS phase for application during construction and operations.

The Proposal would benefit from demonstrating a commitment to the local community through such an investment. Entities such as the community farm and the Tirkandi Cultural Development Centre would provide well established, and well-respected platforms for community contributions. It is recommended that these opportunities be investigated further after the scoping report is submitted.

5.10. Next steps

It is proposed that broader engagement occur during the EIS phase to inform and gain feedback from the broader community. The Communications and Engagement Strategy for the Proposal proposed the following activities occur during this stage:

- establishment of a project website of web page and dedicated contact points
- open house information sessions promoted through public notice on radio and in the local newspaper
- online survey to capture broader opinions and feedback
- distribution of a project newsletter
- stakeholder emails (targeted)
- meetings with special interest groups
- ongoing Council and DPIE meetings (including other agencies as outlined by the SEARs)
- ongoing meetings with nearby stakeholders.

6. PLANNING CONSIDERATIONS

6.1. Key NSW Environmental Planning instruments

6.1.1. Environmental Planning and Assessment Act 1979

Development in NSW is subject to the requirements of EP&A Act and its associated regulations. Environmental planning instruments prepared pursuant to the EP&A Act set the framework for approvals under the EP&A Act. The Proposal would be assessed under Part 4 of the EP&A Act.

6.1.2. State Environmental Planning Policy (State and Regional Development) 2011

Clause 20 of Schedule 1 of the State and Regional SEPP states that the following development is considered 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 a capital investment value of more than \$30 million, or*
- (b) has a capital investment value of more than \$10 million and is located in an environmentally sensitive area of State significance.*

Electricity generating works is defined in the Standard Instrument – Principal Local Environment Plan (2006) as:

A building or place used for the purpose of –

- (a) Making or generating electricity, or*
- (b) Electricity storage.*

The primary purpose of the Proposal is for electricity storage, and it is expected to have a capital investment value of more than \$30 million (\$105 million expected). Energy from the BESS would be used to supplement the national network during peak periods, by storing energy during short periods. Therefore, the Proposal meets the definition of development for the purpose of electricity generating works per Clause 20 of the State and Regional SEPP. Accordingly, the Proposal is classified as SSD under Part 4 of the EP&A Act and approval would be given by the NSW Minister for Planning and Public Spaces (the Minister), or the Independent Planning Commission of NSW (IPC), as delegated by the Minister in certain circumstances.

6.1.3. State Environmental Planning Policy (Infrastructure) 2007

Clause 34(1)(b) of State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) provides that development for the purpose of electricity generating works may be carried out by any person with consent on any land in a prescribed rural, industrial or special use zone.

Pursuant to Clause 33 of the ISEPP, a prescribed rural, industrial or special use zone means any of the following land use zones or a land use zone that is equivalent to any of those zones:

- RU1 Primary Production
- RU2 Rural Landscape
- RU3 Forestry
- RU4 Primary Production Small Lots

- IN1 General Industrial
- IN2 Light Industrial
- IN3 Heavy Industrial
- IN4 Working Waterfront
- SP1 Special Activities
- SP2 Infrastructure.

The Subject Land is zoned as RU1 Primary Production and therefore the Proposal meets the definition of a prescribed rural, industrial or special use zone. Accordingly, the Proposal is permissible with consent.

6.1.4. State Environmental Planning Policy (Primary Production and Rural Development) 2019

The aims of State Environmental Planning Policy (Primary Production and Rural Development) 2019 (Primary Production and Rural Development SEPP) are:

- a) To facilitate the orderly economic use and development of lands for primary production.
- b) To reduce land use conflict and sterilisation of rural land by balancing primary production, residential development and the protection of native vegetation, biodiversity and water resources.
- c) To identify State significant agricultural land for the purpose of ensuring the ongoing viability of agriculture on that land, having regard to social, economic and environmental considerations.
- d) To simplify the regulatory process for smaller-scale low risk artificial waterbodies, and routine maintenance of artificial water supply or drainage, in irrigation areas and districts, and for routine and emergency work in irrigation areas and districts.
- e) To encourage sustainable agriculture, including sustainable aquaculture.
- f) To require consideration of the effects of all proposed development in the State on oyster aquaculture.
- g) To identify aquaculture that is to be treated as designated development using a well-defined and concise development assessment regime based on environment risks associated with site and operational factors.

Specific to this Proposal, it is anticipated that:

- The land capability of the site would not be affected given the nature of the works involved for the installation of the BESS which are considered to be relatively minor. Only a small portion of the overall Subject Land (178 ha) will be used as part of the development footprint (~ 5 ha). A baseline soil assessment prior to construction is to be produced and retained for rehabilitation commitments post decommissioning.
- For the operational life of the BESS, the rest from grazing provided to the land combined with operational management to protect groundcover may actually improve soil health and capability, in comparison to current agricultural activities, particularly in drought conditions.
- During construction of the Proposal, the economic benefits of the Proposal would likely exceed benefits of the returns received from current agricultural activities, in terms of employment during operation and other economic stimulus to the surrounding community.

The Proposal is considered compatible with the relevant aims of the Primary Production and Rural Development SEPP.

6.1.5. State Environmental Planning Policy No 33 (Hazardous and Offensive Development)

State Environmental Planning Policy No 33 – Hazard and Offensive Development (SEPP 33) defines and regulates the assessment and approval of potentially hazardous or offensive development.

SEPP 33 provides for systematic assessment of potentially hazardous and offensive development for the purpose of industry or storage. For development Proposals classified as ‘potentially hazardous industry’ the policy requires a preliminary hazard analysis (PHA) to determine risks to people, property and the environment.

SEPP 33 defines ‘potentially hazardous industry’ as:

...development for the purposes of any industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would pose a significant risk in relation to the locality:

(a) to human health, life or property, or

(b) to the biophysical environment,

and includes a hazardous industry and a hazardous storage establishment

‘Potentially offensive industry’ defined as:

...a development for the purposes of an industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would emit a polluting discharge (including for example, noise) in a manner which would have a significant adverse impact in the locality or on the existing or likely future development on other land, and includes an offensive industry and an offensive storage establishment.

Impacts are not considered to present a significant adverse impact in the locality, this impact has been assessed in Section 7. Mitigation measures should be developed to help manage impact identified.

6.1.6. State Environmental Planning Policy (Koala Habitat Protection) 2020

State Environmental Planning Policy – (Koala Habitat Protection) 2020 (Koala SEPP 2020) aims to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas.

Per Clause 5(1) of the Koala SEPP 2020, the provisions of the Koala SEPP 2020 apply to each local government listed in Schedule 1. Murrumbidgee LGA is not identified in the listed LGAs under Schedule 1. However, as the Proposal is SSD, assessment of impacts to the Koala and Koala habitat would be carried out under the NSW *Biodiversity Conservation Act 2016* (BC Act 2016) (refer Section 7.1.5).

6.1.7. Roads Act 1993

The NSW *Roads Act 1993* (Roads Act) provides for the classification of roads as classified and unclassified roads and for the declaration roads under the care of local councils or Transport for

NSW (TfNSW) and other road authorities. It also regulates the carrying out of various activities in, on and over public roads.

Intersection treatments and road upgrades may be required to obtain site access. Final site access arrangements would be determined by further traffic investigations. Additional approval in the form of a Section 138 permit from the relevant road's authority, who are expected to be required to carry out road upgrades.

Access and traffic are further discussed in Section 7.1.8.

6.1.8. Crown Lands Management Act 2016

The main objectives of the NSW *Crown Lands Management Act 2016* (Crown Lands Act) are to provide for the ownership and management of Crown land in NSW, and provide clarity concerning the law applicable to Crown land. Works within a Crown reserve require environmental, social, cultural heritage and economic considerations to be considered, and must facilitate the use of land by the NSW Aboriginal people. Local Councils are responsible for the sustainable and commercial management of Crown Land.

There is no Crown Land within the Subject Land. Therefore, no Crown Land permits would be investigated as part of the EIS.

6.1.9. Biodiversity Conservation Act 2016

The NSW *Biodiversity Conservation Act 2016* (BC Act) relates to the conservation of biodiversity.

The purpose of the BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community consistent with the principles of the ecological sustainable development (ESD).

The BC Act contains provisions relating to flora and fauna protection, threatened species and ecological communities listing and assessment, a Biodiversity Offsets Scheme (BOS), a single Biodiversity Assessment Method (BAM), calculation and retirement of biodiversity credits and biodiversity assessment and planning approvals. It also requires specific consideration of irreversible impacts.

The Proposal would likely impact on native vegetation and biodiversity values. A Biodiversity Development Assessment Report (BDAR) would be prepared as part of the EIS, taking into consideration requirements raised by Biodiversity Conservation Division (BCD) during consultation. Biodiversity is discussed further in Section 7.1.5.

6.1.10. National Parks and Wildlife Act 1974

The NSW *National Parks and Wildlife Act 1974* (NPW Act) establishes the fundamental functions of the NSW National Parks and Wildlife Service. These include the conservation of nature, objects, features, places and management of land reserved under the NPW Act. Specifically, the conservation of nature includes:

- Landforms of significance, including geological features and processes, and
- Landscapes and natural features of significance including wilderness and wild rivers.

The NPW Act regulates access to National Parks. There are no National Parks located in proximity to the Subject Land.

The NPW Act also sets out to protect and preserve Aboriginal heritage values. Part 6 of the NPW Act refers to Aboriginal objects and places and prevents persons from impacting on an Aboriginal place, object or relic, without consent or a permit.

Additional to the NPW Act, Heritage NSW sets out code and guidelines for required assessment and consultation protocols for Aboriginal heritage impact assessments. Aboriginal Heritage is discussed further in Section 7.1.6.

6.1.11. Heritage Act 1977

The NSW *Heritage Act 1977* (Heritage Act) aims to conserve heritage values. The Heritage Act defines 'environmental heritage' as those places, buildings, works, relics, moveable objects and precincts listed in the Local or State Heritage Significance. A property is a heritage item if it is listed in the heritage schedule of the local Council's Local Environmental Plan or listed on the State Heritage Register, a register of places and items of particular importance to the people of NSW. Under Section 4.41 of the EP&A Act, an approval under Part 4 or a permit under Section 139 of the Heritage Act would not be required for SSD.

Based on preliminary searches, no heritage items have been identified within the Subject Land. Heritage is further discussed in Section 7.1.11 of this report.

6.1.12. Water Management Act 2000

Under section 4.41 of the EP&A Act, SSD developments do not require a controlled activity approval (other than an aquifer interference approval) under Section 91 of the NSW *Water Management Act 2000* (WM Act). However, best practice measures are being used to inform site development in accordance with the WM Act.

The WM Act defines waterfront land as the bed of any river, lake or estuary and any land within 10, 20, 30 and 40 metres of the riverbanks, lake shore or estuary mean high water mark, in accordance with best practice guidelines. Permanent project infrastructure would be avoided or minimised in these areas, as informed by further hydrological studies. In overland flow areas, which do not meet the definition of waterfront land under the WM Act, permanent infrastructure may be considered.

There is no waterfront land within the Subject Land, water features on the site Subject Land do not require consideration under the WM Act.

6.2. Local Instruments

6.2.1. Murrumbidgee Local Environmental Plan 2013

The Subject Land is located within the Murrumbidgee LGA and is subject to the provisions of the Murrumbidgee LEP 2013. Under the LEP, the Subject Land is zoned as RU1 Primary Production (Figure 7.2 & 7.3).

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 uses within this zone and land uses within adjoining zones.

Development for the purpose of electricity generation is prohibited within this land zoning, however Clause 34(1)(b) of the ISEPP provides that development for purpose of electricity generation works may be carried out by any person with consent on any land in a prescribed rural, industrial or special use zone. As RU1 Primary Production meets the definition of a prescribed rural, industrial or special use zone per Clause 33 of the ISEPP, the provisions of the ISEPP prevail over the Murrumbidgee LEP 2013. The Proposal is thus permissible on this land.

6.3. Commonwealth legislation

6.3.1. Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is administered by the Commonwealth Department of Agriculture, Water and the Environment (DAWE). Under the EPBC Act, if the Minister determines that an action is a 'controlled action' which would have or is likely to have a significant impact on a Matter of National Environmental Significance (MNES) or Commonwealth land, then the action may not be undertaken without prior approval of the Minister.

The EPBC Act identifies nine MNES, outlined in Table 6-1. Actions that adversely affect these matters may be deemed to be a 'controlled action' under the EPBC Act.

A search of the Commonwealth Protected Matters Search Tool was undertaken on 11 January 2021 for the Subject Land with a 10 km buffer. The findings of the search are outlined in Table 6-1.

The potential for these entities to occur would be investigated as part of the EIS. At this stage, a significant impact on an MNES and the requirement to refer the Proposal under the EPBC Act is not considered likely.

Table 6-1 EPBC Act MNES

MNES	Quantity	Description
World Heritage properties.	None	Not applicable
National heritage places.	None	Not applicable
Wetlands of international importance.	4	None within 300 km
Threatened species and ecological communities.	4 Ecological communities 16 Threatened species	Discussed in Section 7.1.5
Migratory species.	9	Discussed in Section 7.1.5
Commonwealth marine areas.	None	Not applicable
The Great Barrier Reef Marine Park.	None	Not applicable
Critical habitats	None	Not applicable

6.3.2. Native Title Act 1993

The Commonwealth *Native Title Act 1993* (NT Act) provides a legislative framework for the recognition and protection of common law native title rights. Native title is the recognition by Australian law that Indigenous people had a system of law and ownership of their lands before European settlement. Where that traditional connection to land and waters has been maintained and where government acts have not removed it, the law recognises this as native title.

People who hold native title have a right to consult or continue to practise their law and customs over traditional lands and waters while respecting other Australian laws. This could include visiting to protect important places, making decisions about the future use of the land or waters, hunting, gathering and collecting bush medicines.

Where native title does exist in relation to the Proposal site, Risen would comply with the provisions of the NT Act and undertake consultation with the Native Title holder. Searches of the native title register were carried out and the results discussed in Section 7.1.6.

7. SCOPING ASSESSMENT

Assessment of key issues

Based on preliminary site assessment and desktop review, a summary of the key environmental issues of relevance to the site and its development is provided below. These include:

- Visual amenity
- Noise and vibration
- Hydrology, groundwater and water use
- Land use compatibility
- Biodiversity
- Aboriginal heritage
- Hazards – bushfire and battery storage
- Traffic and access
- Soils and landforms
- Social and economic impacts.

These are discussed in greater detail below. Background searches can also be seen attached in Appendix B. Indicative environmental values and site constraints are provided in Figure 7-1.

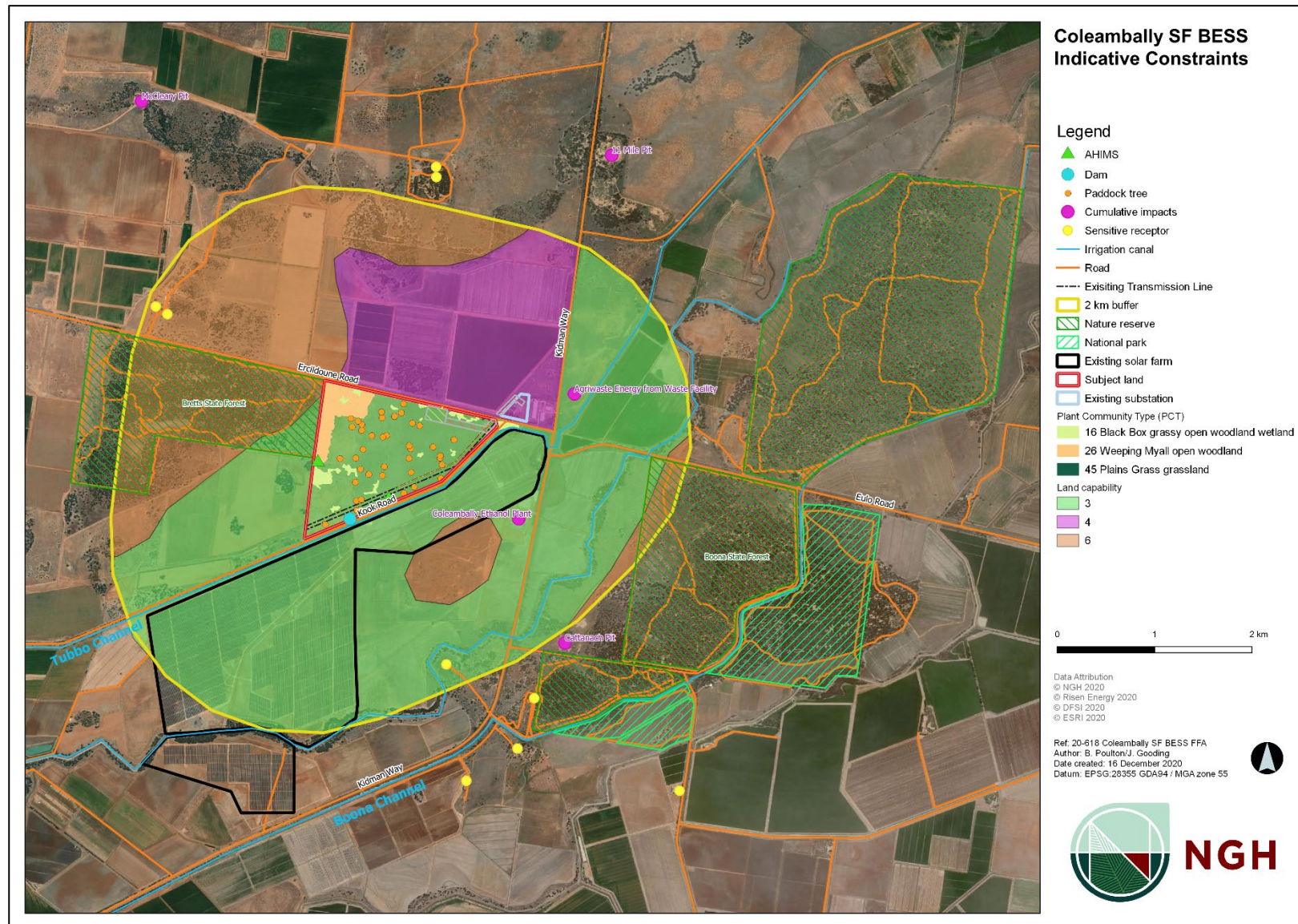


Figure 7-1 Constraint's map

7.1. Visual amenity

The Subject Land appears to be relatively flat to gently undulating, cleared agricultural land with scattered patches of native vegetation and paddock trees. The site is not located in a prominent or raised location and is not located within a valley overlooked by nearby residences. No residences have been identified within 1 km of the Development Site. Three residences have been identified within 2 km of the Development Site. Existing native vegetation exists between each of these residences and the Proposal. As such, the visual impact of the Proposal is expected to be low. Mitigation measures to reduce visual impact would include planted vegetation screening where required. Residences surrounding the Subject Land are shown in Figure 2-1.

Constraints and need for further assessment

There are only three receivers within 1 km to 2 km of the proposed BESS. Natural vegetation screening exists to alleviate visual impacts to these sensitive receivers. Energy generation and distribution infrastructure already exists in the areas and the Proposal would be located in close proximity to this established infrastructure.

An assessment of the level of visual impact would be undertaken as part of the EIS process and would include viewshed analysis and consideration of the effectiveness of mitigation options. This includes modelling and photomontages from sensitive receiver locations as well as the solar farm, substation and adjacent national park.

The EIS would consider the potential for the Proposal to affect local landscape character. Consultation would be undertaken broadly to understand the local values of the area, including visual characteristics valued by the community. Additional engagement with specific affected residences identified as likely to have a view of the BESS infrastructure would be undertaken to identify the nature and significance of impacts and the need for mitigation measures. Mitigation measures to ensure visual impact from the adjacent national parks, reserves and receivers is managed includes the colouring of the 4 – 5 m tall containers that house batteries.

7.2. Noise and vibration

There are no residences within 1 km of the Development Site and three residences within 2 km of the Development Site. These residences are unlikely to be noise affected during the construction phase of the Proposal. Consultation with these residents would be initiated as part of the Scoping stage and ongoing throughout the environmental impact assessment stage.

Construction noise is likely to be manageable with appropriate mitigation measures and neighbour consultation. It is unlikely that operational noise of the Proposal would impact surrounding receivers. Heating, ventilation and air conditioning (HVAC) noise is considered the major noise contributor for battery storage. HVAC noise will be assessed as part of a specialist noise impact assessment during the environmental impact assessment. The impact assessment would include consultation with potentially affected receivers within 2 km.

In our experience, DPIE would likely require the noise assessment to consider the cumulative impacts of the BESS with the existing solar farm and other large developments planned/proposed in and around Coleambally (including four quarries). Construction traffic noise impacts along Kidman Way and Ercildoune Road would also be included in the noise assessment.

Constraints and need for further assessment

A construction and operational noise and vibration assessment would be undertaken as part of the environmental impact assessment to assess potential noise impacts for affected residents. The report would include either an assessment of the worst-case scenario or onsite monitoring to establish baseline noise levels for the assessment, and an assessment of road traffic noise. The assessment would be undertaken in accordance with the Interim Construction Noise Guideline (DECC, 2009), NSW Noise Policy for Industry (NSW EPA, 2017), Assessing Vibration: A Technical Guideline (DECC, 2006) and NSW 'Road Noise Policy' (DECCW, 2011). Measures to minimise noise impacts would be recommended for the construction and operation of the Proposal.

7.3. Hydrology, groundwater and water use

The Development Footprint is located on flat, low-lying land. Tubbo Channel runs along the southern boundary between the Development Site and Kook Road. One farm dam exists at the southwestern corner of the Development Site. It is unlikely that any surface water features would be impacted by the Proposal.

The Development Site is located within the Murrumbidgee River catchment. The site is flat with elevation ranging from 120 m to 124 m. There is unlikely to be run-on to the site due to the level slope and positioning of the site. Run-off is likely to enter stormwater drainages along either side of Ercildoune and Kook Roads.

The use of fuels and other chemicals onsite pose a risk of soil contamination in the event of a spill. Chemicals used onsite would include fuels, lubricants and (minimally) herbicides. Spills of these contaminants can alter soil health, affecting its ability to support plant growth. When mobilised, such as in a rain event or flooding, the substances may spread via local drainage lines, affecting much larger areas including aquatic habitat. Overall, these risks are low and considered readily manageable.

The Proposal area does not occur on Flood Prone Land (Murrumbidgee LEP, 2012). In the unlikely event of storm water flooding, where water may pool from heavy rainfall events, BESS infrastructure would likely remain stable. The development of the BESS would likely obstruct the flow of flood waters; however, the development site would be small (~ 4 ha) and surrounded by undeveloped agricultural land. Drainage options could be incorporated into the project design to prevent impacts to Ercildoune Road and Kook Road.

As the development site is not located on flood prone land it is unlikely that a detailed flood study would be required as part of the EIS.

Constraints and need for further assessment

State significant developments do not require a controlled activity approval (except an aquifer interference approval) per Section 91 of the WM Act.

Water quantities and sources required for construction and operation would be required to be detailed in the EIS as part of the project description.

Confirmation of the hydraulic function and ecological value of the waterways would be undertaken as part of the EIS, including a specialist hydraulic and hydrological analysis to address potential flood risks. Best practice management is recommended with regard to impacts that cannot be avoided (i.e., vehicle crossings) for waterways that qualify as 'waterfront land'. However, there is no

waterfront land within the Subject Land; no waterways requiring consideration under the WM Act lie on the Subject Land.

The EIS would assess the impacts to nearby waterways and include appropriate mitigation measures, such as buffering these areas for avoidance, where possible, and adherence to best practice guidelines (Guidelines for Controlled Activities on Waterfront Land; (DPI, 2012)) where avoidance is not possible.

7.4. Land use compatibility

Land use impacts have become a key focus of regulatory authorities in assessing recent development applications of large-scale renewable energy projects in NSW. A priority of the NSW Government has been to support renewable energy projects that are compatible with surrounding land uses, particularly primary resources (mining and agriculture).

AGRICULTURE

According to the *Large-scale Solar Energy Guideline for State Significant Development* (NSW Government, 2018), site selection for renewable energy projects, should avoid land capability classes 1 to 3 unless strong justification for the site can be made. The Subject Land is mapped as Class 3 under the NSW Land and Soil Capability Scheme (OEH 2012).

Class 3 land is defined as the following:

High capability land: Land has moderate limitations and is capable of sustaining high-impact land uses, such as cropping with cultivation, using more intensive, readily available and widely accepted management practices. However, careful management of limitations is required for cropping and intensive grazing to avoid land and environmental degradation.

Justification for the selection of the Subject Land would include the following:

- Low diversion of land use (3%) away from agricultural production (only ~4 ha of the Subject Land would be required and unable to be used for agriculture).
- Close proximity to Coleambally Solar Farm, existing substation and transmission line are required.
- Dryland cropping was last undertaken in 2009 from aerial photography.
- The site is grazed using sheep. Sheep grazing can continue within the lot and around the proposed development.
- Without the addition of external resources (such as irrigation waters), farmland in the area is generally viewed as having poor productivity.
- Other constraints such as proximity to residential receptors are low.

Recent NGH experience has shown that agricultural communities, are not supportive of renewable energy developments on high capability agricultural land (Class 3 land). This is increasingly being reinforced by Department of Primary Industries (DPI) and DPIE.

It is noted that Murrumbidgee Council did not raise an objection to the use of high capability agricultural for solar farms recently approved within the LGA; however, our experience is that this view may change, should the wider community have concerns.

DPIE is likely to require an Agricultural Impact Assessment to be carried out and/or will request that the development be designed to avoid Class 3 land. Should Class 3 land propose to be impacted, it may be necessary to conduct a site-specific land assessment, with the prospect that the land may

be more appropriately categorised as moderate capability (rather than high capability) within the Proposal area.

In addition to compatibility/competition with agriculture, other land use compatibility issues include:

MINING

Sterilisation of mineral resources: No current, recent or proposed mining or exploration licenced exist over the Subject Land.

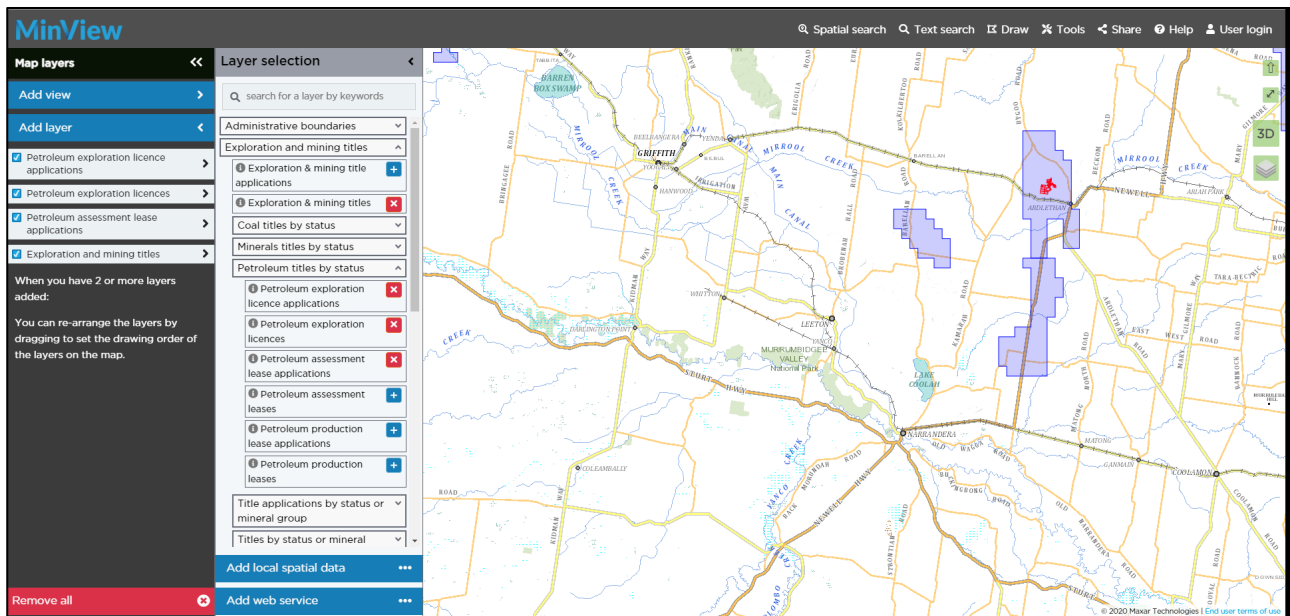


Figure 7-2 Mineral exploration licences

URBAN/COMMERCIAL/INDUSTRIAL DEVELOPMENT

The Subject Land is currently zoned RU1 Primary Industry (NSW Government 2013) and there is no publicly available plan of the Murrumbidgee Shire Council website to indicate plans to reallocate the land to alternative land use. The site is shown highlighted in Red in Figures 7-2 and 7-3.

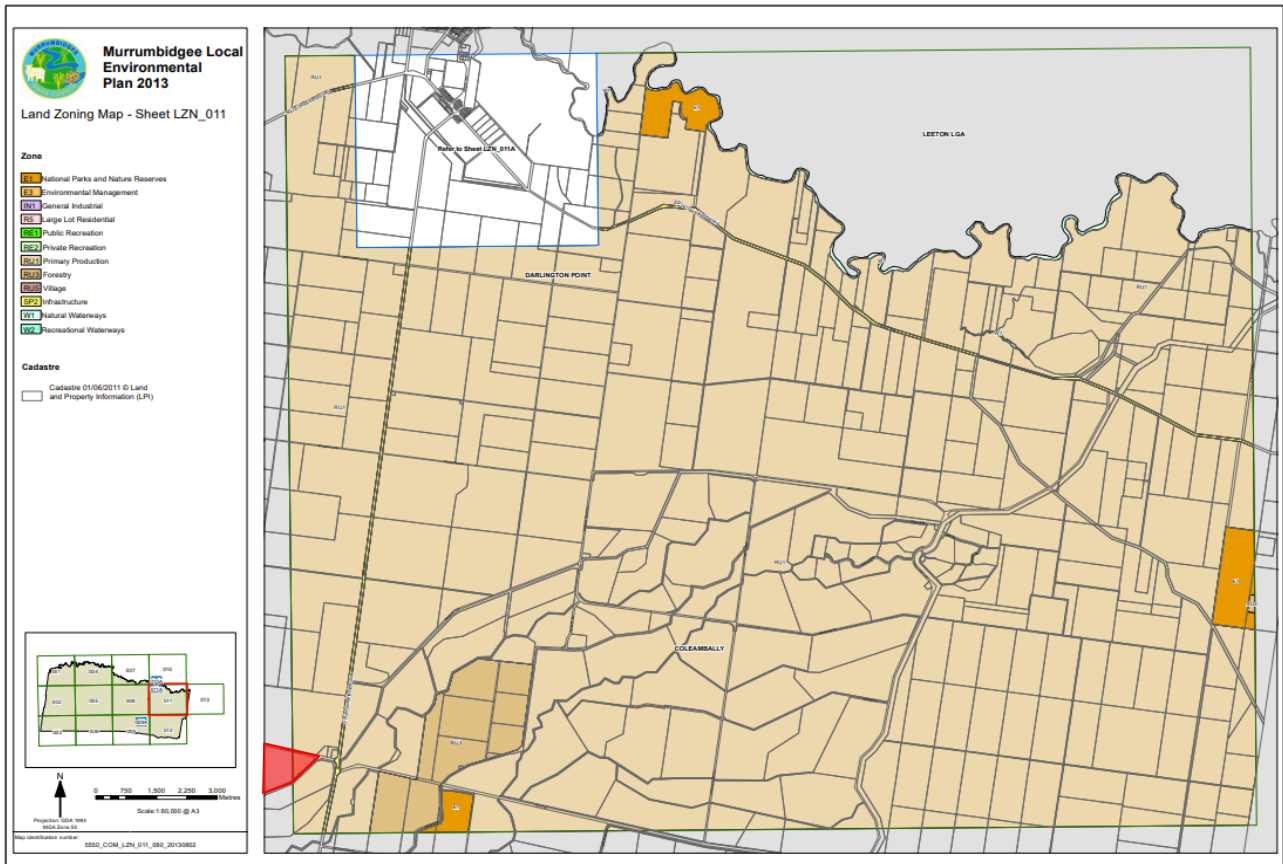


Figure 7-3 Land zoning – site highlighted in red.

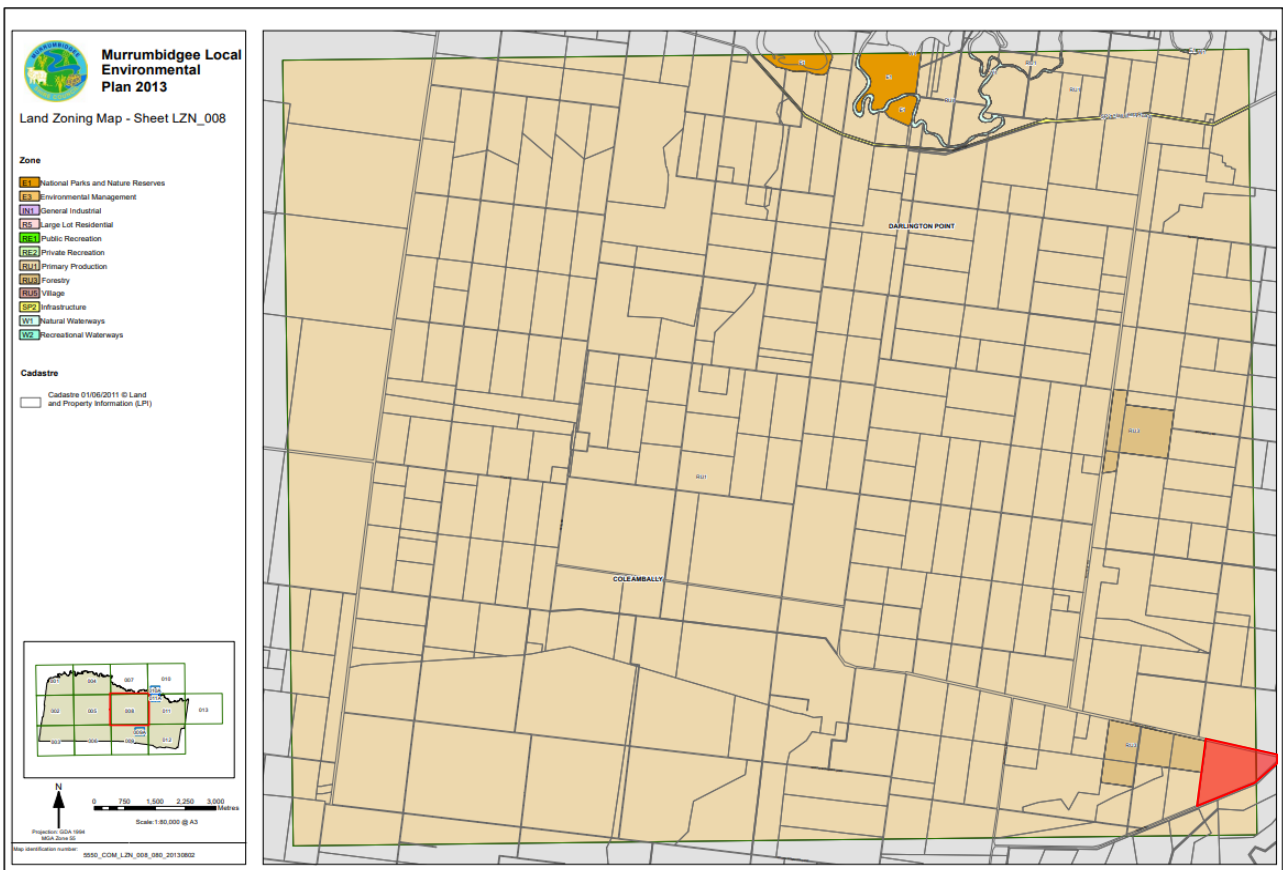


Figure 7-4 Land zoning (continued) – site highlighted in red.

NATIONAL PARKS/NATURE RESERVES

The closest National Park to the Subject Land is Murrumbidgee Valley National Park, located approximately 2.85 km southeast of the Subject Land. The nearest nature reserve is Brett's State Forest located immediately northeast of the Subject Land boundary. National Parks and Nature Reserves in relation to the Subject Land are shown in Figure 1-1.

Indirect impacts on national parks/nature reserves are unlikely to result from the Proposal, particularly if the BESS is located outside of existing natural vegetation including mature trees. Local reserve connectivity would not be impacted by the Proposal.

Constraints and need for further assessment

The Proposal would involve earthworks and ground disturbance, as well as piling. This would be limited to the Development Footprint (approximately 4 ha). The impact of the Proposal on agricultural production in the region would be assessed in detail in the EIS and a Land Use Conflict Risk Assessment (LUCRA).

7.5. Biodiversity

Approach

Biodiversity matters impose a cost and time constraint, as surveys are required to be conducted during specific seasons/months, and as offsetting of impacts under the Biodiversity Assessment Method (BAM) can be costly. Additionally, the monetary value of biodiversity credits is market driven and can be volatile, making it difficult to quantify the financial liability before retirement of credits post-approval.

Potential impacts on Matters of National Environmental Significance (MNES) defined under the *Environmental Protection and Biodiversity Conservation Act 1999* (Cwth) (EPBC Act), this includes ecological communities, flora and fauna listed as Threatened under the EPBC Act. The implication of Threatened ecological communities (TECs) and species occurring within the development site is that referral to the Australian Government may be required.

A desktop assessment and preliminary field survey conducted by NGH on 11th December 2020 found that there are unlikely to be any biodiversity risks that would be a fatal flaw at this location. However, a number of constraints are present as detailed below.

Ecological values of the Subject Land were investigated at a high level. This has included the following information sources:

- Existing threatened species listings under the BC Act and EPBC Act.
- Existing records of threatened species sightings in the Subject Land, as recorded in the BioNet Database.
- DAWE PMST search (nationally threatened species listed under the EPBC Act).
- Areas of outstanding biodiversity value declared under the BC Act 2016.
- A site inspection, undertaken on 11 December 2020 by an NGH ecologist.

Background Research

According to NSW State vegetation mapping and preliminary field surveys, three Plant Community Types (PCTs) are present on the site. Detailed surveys would need to be conducted to confirm the species present and structure/diversity/condition characteristics.

- PCT 16 Black Box grassy woodland wetland of rarely flooded depressions in Southwestern NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion).
- PCT 26 Weeping Myall open woodland of the Riverina Bioregion and NSW Southwestern Slopes Bioregion.
- PCT 45: Plains Grass grassland on alluvial mainly clay soils in the Riverina Bioregion and NSW Southwestern Slopes Bioregion.

A search for protected MNES was conducted on 1 December 2020 with a 10 km buffer of the Subject Land, the following additional TECs were listed as having the potential to occur within the locality:

Table 7-1 MNES search results

TEC Name	Listing	
	BC Act	EPBC Act
Buloke Woodlands of the Rivera and Murray-Darling Depression Bioregions	Endangered	Endangered
Grey Box (<i>Eucalyptus microcarpa</i>) Grassy Woodlands and Derived Native Grasslands of SE Australia	Endangered	Endangered
White Box – Yellow Box – Blakley’s Red Gum Grassy Woodlands and Derived Native Grasslands	Critically Endangered	Critically Endangered

A search of the NSW BioNet Atlas for threatened species records within 10 km of the Subject Land was conducted on 1 December 2020. Thirteen threatened species were present. All 13 species are listed under the *Biodiversity Conservation Act 2016* (NSW) (BC Act), and four under the EPBC Act. The MNES search results found that an additional 11 threatened species have the potential to occur at the Proposal site.

Other biodiversity matters to note include:

- The Subject Land is directly adjacent to Brett’s State Forest and approximately 1.5 km from Boona State Forest.
- Ercildoune Road is identified as a Significant Roadside Environment Area.
- The Subject Land is within the area to which SEPP 44 Koala Habitat applies and a koala habitat assessment would be required.
- The Subject Land is not mapped as Sensitive or Vulnerable Regulated Land on the Native Vegetation Regulatory Map.
- The Subject Land is not mapped on the Biodiversity Values Map.
- The Subject Land is mapped for Groundwater Vulnerability and Terrestrial Biodiversity under the Murrumbidgee Local Environmental Plan (LEP) 2013.
- The Subject Land is not mapped as Key Fish Habitat.

Based on the background search results above, a Biodiversity Development Assessment Report (BDAR), prepared in accordance with the BAM, would be required. Certain species must be surveyed in specific months/seasons, or otherwise assumed to be present on the site. The BAM calculator generates a calculated offset obligation (financial contribution) for the development, based on the extent and nature of impacts. Ecosystem credits can be in the order to 20 credits per hectare of native vegetation to be cleared.

Biodiversity risk could be lowered considerably by selecting an area within the Subject Land that avoids areas of existing native vegetation, particularly mature trees.

Background searches undertaken for the purposes of this assessment included Commonwealth and State databases as detailed in State and Commonwealth legislation. Searches determine whether potential threatened flora and fauna species, populations, ecological communities, migratory species and Areas of Outstanding Biodiversity Value (AOBV), occur or are likely to occur within the Subject Land. These searches are undertaken on a broad scale to capture all entities that may be of interest. In addition to this, searches of the Groundwater Dependent Ecosystems Database and Priority Weeds Database were also undertaken. A summary of the searches and results are outlined in Table 7-2.

Table 7-2 Background searches and results.

Background search	Search area	Results
DPIE BioNet species sightings search of flora and fauna and communities listed as threatened under the BC Act	Subject Land with a 10km buffer (Locality)	The search results returned the following recorded threatened species within the search area: • 1 flora species • 9 birds • 2 mammals • 1 amphibian.
PMST for species and populations listed as threatened under the EPBC Act	Subject Land with a 10km buffer (Locality)	The search results returned the following that have the potential to occur inside the Subject Land: • 4 Listed Threatened Ecological Communities • 16 listed threatened species • 9 listed migratory species.
Biodiversity Values Mapping and areas of outstanding biodiversity value	Subject Land/Subject Land	No areas of declared outstanding biodiversity value as listed under the BC Act are present within the Subject Land. The Subject Land does not contain significant wetland communities. Additionally, no Biodiversity Values Mapping occurs within the Subject Land.

Site inspection

A preliminary site inspection of the Subject Land was undertaken by an NGH ecologist on the 11 December 2020. The site inspection included identifying biodiversity constraints over the Subject Land, and high-level vegetation stratification as well as opportunistic observations of habitat features such as large stick nests and hollow bearing trees when encountered within the Subject Land. Plant community types (PCTs) were determined based on the presence of diagnostic species via rapid assessment (RDPs). No floristic plots were undertaken. Degree of historical agricultural use and modification were also evaluated.

Land Category Assessment

Large portions of the Subject Land have been cleared and used for agricultural production on a rotational and ongoing basis. To inform this Scoping Report and guide further assessment, a Land Category Assessment was undertaken. Assessment of the Subject Land, as Category 1 - exempt or Category 2 - regulated land, was undertaken using the following data sources:

- Aerial imagery of historical land use (Sourced from Google Earth and Spatial Services Delivery)
- 2017 Land Use Dataset (Australian Land Use and Management (ALUM) Classification Version 7 (OEH, 2021))
- NSW Woody vegetation extent and Foliage Projective Cover (FPC) 2011 (OEH, 2015)
- Sensitive regulated and vulnerable regulated lands on the Native Vegetation Regulatory Map (NVR Map) portal
- Upper Hunter State Vegetation Mapping (OEH, 2018); Greater Hunter State vegetation type map (OEH, 2016); The Native vegetation of the North West Wollemi National Park and Surrounds (OEH, 2012).

The aim of this assessment was to determine the distribution of Category 1 – Exempt Land (Category 1 Land) and Category 2 – Regulated Land (Category 2 Land) across the Subject Land. Category 1 Land is not required to be assessed under the BAM other than for prescribed impacts. This means that development on Category 1 Land is unlikely to generate a credit obligation. The Subject Land comprises approximately 178.5 ha of Category 1 Land, where a history of disturbance and significant modification is evident.

Other areas of the Subject Land contain Category 2 Land (5.26 ha) that if impacted are required to be assessed under the BAM. This includes paddock trees (as defined by the BAM) present across the site if impacted and roadside vegetation.

A full land category assessment was completed for the site, the assessment can be seen in Appendix D.

Vegetation and Fauna Habitat

The majority of the Subject Land is cleared agricultural land with areas available for grazing and cultivation. Native vegetation is minimal in the form of isolated paddock tree regrowth and roadside vegetation within the adjacent road reserve.

No named drainage lines or permanent water bodies occur on the Subject Land. One small farm dam exists on the southern boundary of the site. The dam provides a low-quality and intermittent water habitat feature for fauna, most likely utilised by passing bird species and aquatic invertebrates.

All potential threatened flora species are considered unlikely to occur due to the level of past modification. There is limited value in terms of fauna habitat within the modified areas, other than foraging opportunities for select species. The high levels of disturbance and introduction or invasion of exotic species in many areas has substantially diminished the habitat values in these areas.

Plant Community Types (PCTs) and Threatened Ecological Communities (TECs)

PCTs within the Subject Land were determined based on the presence of diagnostic species via rapid assessment. The existing environment is highly modified with a combination of native and non-native species. Based on the preliminary inspection, three PCTs were identified within the Subject Land:

- PCT 16 Black Box grassy woodland wetland of rarely flooded depressions in southwestern NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion).
- PCT 26 Weeping Myall open woodland of the Riverina Bioregion and NSW Southwestern Slopes Bioregion.
- PCT 45: Plains Grass grassland on alluvial mainly clay soils in the Riverina Bioregion and NSW Southwestern Slopes Bioregion.

TECs were associated with two of the PCTs identified on the site, these include:

PCT 26 has the following associated TEC's:

- Listed EPBC Act & BC Act, Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW Southwestern Slopes bioregions

PCT 45 has the following associated TECs:

- Listed BC Act, Artesian Springs Ecological Community in the Great Artesian Basin

The Myall woodland TEC was the only TEC found to exist on site from the PCT assessment conducted during the site inspection. Other TECs shown above were not found on the Subject Land. Scattered paddock trees of Black Box and White Cypress also occur within the Subject Land. The remaining vegetation on the Subject Land is comprised of recolonised native grassland and regenerating Weeping Myall (*Acacia pendula*). Areas meeting the TEC classification would have to be assessed under the EPBC Act and a referral to the Australian Government may be required.

Table 7-3 PCT 16

Photograph 01: PCT 16 – Black Box grassy open woodland wetland		
Condition:	Derived open woodland and highly modified	
Coordinates:	403780 E, 6155059 S	
Description:	Groundcover had Australian natives (including Plain's grass and <i>Austrodanthonia</i> sp.) and some weed species such as Common everlasting. Black box trees were in good condition, some juveniles were present. Some Weeping myalls in scattered locations. Weed species dominated understory of trees.	
Likely Constraint:	Low	

Table 7-4 Open areas

Photograph 02: No PCT – Cleared areas		
Condition:	Derived grassland and highly modified	
Coordinates:	403796 E, 6154992 S	
Description:	Exotic and weed species were evident in varying amounts and included Silverleaf nightshade, Common everlasting and hard head thistle. Other scattered plants included Saltbush, Rhode's grass and other Australian native grasses. Very isolated juvenile trees were evident.	
Likely Constraint:	Low	

Table 7-5 PCT 26

Photograph 03: PCT 26 – Weeping Myall open woodland		
Condition:	Derived grassland and highly modified	
Coordinates:	402609 E, 6155288 S	
Description:	Good condition open woodland, Weeping Myall (<i>Acacia pendula</i>) was observed as healthy mature and juvenile populations. No tall overstorey was present, however, native groundcover species associated with PCT 837 occurred in low densities – most likely due to increased bare patches in the area. Significant areas within the Subject land meet the TEC classification.	
Likely Constraint:	Moderate	

Constraints and need for further assessment

To inform the early Proposal planning process and investigation strategies, biodiversity features within the Subject Land have been mapped to areas of High, Moderate, or Low constraints and are detailed in the constraint's assessment in Section 8. Avoiding and minimising impacts to native vegetation has been considered during the initial Proposal plan and design and will be further developed during the more detailed assessments.

Based on the highly modified/disturbed nature of the site, minimal native species presence, lack of optimal habitat for threatened species and the avoidance of native vegetation and habitat features, it is considered impacts to biodiversity values would be negligible. However, as part of the EIS, the detailed ecological surveys and further investigation and assessment would be undertaken including:

- Assessment via BDAR of onsite PCT and potential surveys for candidate species, both terrestrial and aquatic, as per DPIE and DAWE requirements
- Avoidance, minimisation, and mitigation measures required
- Offset strategies, where appropriate.

7.6. Aboriginal Heritage

A search of relevant heritage registers for Aboriginal sites and places provides an indication of the presence of previously recorded sites. A register search is not conclusive as it requires that an area has been inspected and any sites are provided to the relevant body to add to the register. However, as a starting point, the search will indicate whether any sites are known within or adjacent to the investigation area.

A basic search of the Aboriginal Heritage Information Management System (AHIMS) was undertaken on 4 December 2020. The search identified two aboriginal sites recorded in or near the Subject Land. An additional one item was identified with a 1km buffer, 24 sites were identified within ~5km of the Subject Land.

An extensive search of the Aboriginal Heritage Information Management System (AHIMS) was undertaken on 19 May 2021 January 2021. The search identified 13 sites or Aboriginal places within a 2 km buffer of the Subject Land. Two items were identified within the Subject Land, both these items were identified as Modified trees (Carved or scarred) with one site also identified as a burial. None of the two items are within 750 m of the expected disturbance footprint and are not expected to be impacted under the current scope of works.

There are a range of landscape features that 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 Subject Land. Landforms with increased Aboriginal heritage potential include:

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

None of these features are known to be associated with the Subject Land. This does not indicate that these features from being present at some time during the time period of Aboriginal occupation in Australia.

Although the site is considered to be significantly altered for agricultural purposes, there remains potential for Aboriginal items in isolated areas of less or no previous disturbances such as established trees and roadside areas. The Subject Land is underlain by the Cainozoic Shepparton Formation, consisting of poorly consolidated clay, silt, sand and gravel layering, deposited by alluvial systems. Nearby geological features also include unconsolidated sand dunes deposited by wind actions and lacustrine deposits formed by the filling of lakes with layers of sediment.

The alluvial and water-holding nature of the landscape presents the possibility that there are areas within the Subject Land which may contain subsurface Aboriginal heritage. The geological detail does not present information sufficient to gain an insight into the types of raw stone materials available for Aboriginal people who occupied the area. The lacking ability to characterise the archaeological potential of the area is compounded by a lack of previous assessment in proximity to the Subject Land. Historical farming practices, including ploughing and land forming, may reduce the potential to locate *in-situ* Aboriginal heritage sites of significance, however this disturbance also has the potential to expose sites which otherwise would not be obvious on the surface.

Constraints and need for further assessment.

Given the presence of landscape features with the potential to contain Aboriginal archaeological material as well as the lack of previous assessment of the area, further field inspection of the proposed development area is required as part of the EIS. Further inspection must accurately characterise the Aboriginal heritage potential of the project area. Risk in relation to Aboriginal heritage would need to be confirmed based on the results of such an assessment. Consultation with registered stakeholders is an important part of this assessment process and should be undertaken in conjunction with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010).

An Aboriginal Cultural Heritage Assessment (ACHA) and associated stakeholder consultation process may be completed as part of the EIS. This would include consultation with the local council and applicable aboriginal bodies. If any Aboriginal Heritage sites are identified that may be potentially affected by the Proposal, mitigation measures would be determined in accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011a). This is considered to be unlikely given the small development footprint and lack of identified aboriginal objects within the development footprint.

7.7. Non-indigenous heritage

Constraints and need for further assessment

A search of the NSW Heritage Register (NSW Government, 2021) was conducted for the Murrumbidgee LGA. The search identified no records listed under the National Parks and Wildlife Act, three records listed under the NSW Heritage Act and 42 records listed by local government and state agencies. There are only two items listed within the Coleambally suburb by local government and state agencies. These items are both associated with the channel and irrigation system in the Coleambally Irrigation Area. No heritage items are considered to be impacted by proposed works on the Subject Land.

A search of the Australian Heritage Database (Australian Government, 2021) was undertaken for the Murrumbidgee LGA. The search identified seven sites, none of these are located within the Coleambally area.

A search of the Murrumbidgee LEP 2013 was undertaken for items of environmental heritage. The LEP indicated that there are four items listed under Part 1: Heritage items, and two items under Part 2: Archaeological sites. All of these records are located at Darlington point and not within the Coleambally area.

A coordinate search of the EPBC PMST was undertaken with a 10 km buffer of the site. The search indicates that there are no World Heritage or National Heritage places within the Subject Land or within close proximity to the Subject Land. Additionally, no Commonwealth heritage places were identified.

Potential impacts

No impacts are considered likely for listed heritage items. Unlisted items are considered unlikely to occur onsite.

Constraints and need for further assessment

Consideration of potential dust and vibration impacts on items near to the haulage route will be investigated in more detail as part of the environmental assessment, as these pose a potential risk to heritage items. The potential to impact non-listed heritage items would also be investigated by site inspection; old land holdings can contain buildings or structures of significance. Protections for such features would be commitments of the EIS, as required.

7.8. Hazards – bushfire and battery storage

The Subject Land is not identified as bushfire prone land. The neighbouring nature reserve to the west of the subject is within a designated bush fire prone area. The addition of battery storage can elevate fire ignition risks as a result of temperature changes and a mixture of weather and environmental conditions. Transport and handling also pose a risk for fire.

Constraints and need for further assessment

The potential to increase risk of bushfire would be assessed in the EIS in accordance with the *Planning for Bushfire Protection Guideline 2019* (RFS, 2019). Emergency protocols would reflect advice from relevant agencies.

A PHA would be carried out in consideration of DPIE's *Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis'* (HIPAP 6) and *Multi-level Risk Assessment* (MLRA).

7.9. Traffic and access

Access to the Subject Land would be from the Kidman Highway and then either Ercildoune Road or Kook Road, with Ercildoune Road the main access road. Due to the operational substation, access to the Subject Land would be from the Kidman Highway and then either Ercildoune Road or Kook Road.

The traffic impact assessment should consider the cumulative impacts of the BESS with the existing solar farm and other large developments planned/proposed using the construction transport route. Solar farm roads are expected to have been upgraded recently to accommodate for increased load. It is possible that Council and/or Transport for NSW (TfNSW), depending on the access relationship to the Newell Highway, will request the selected access routes to be upgraded, sealed (where required) and potentially widened to accommodate B-Double design vehicles. The site has no sensitive receivers within 1 km and the noise impacts from traffic to these receivers is considered negligible.

During the anticipated 12-month construction period, the expected construction vehicle movements are as provided in Table 7-6. Construction vehicles would range from light vehicles to 26 m B-Doubles. Light vehicles would arrive during AM/PM peaks with heavy vehicle deliveries to be spaced out during the day. Operational traffic is thought to be negligible with a maximum of two one-way vehicle trips per day, and an average of two to four one-way trips per week. This is based on one ongoing operational job.

Table 7-6 Construction staging and anticipated construction vehicle numbers.

Construction stage	Estimated vehicle movements per day		
	Light vehicles	Heavy vehicles	Oversize and/or over mass (OSOM) vehicles
Stage 1: Site establishment 2 months	20	20	10

Construction stage	Estimated vehicle movements per day		
	Light vehicles	Heavy vehicles	Oversize and/or over mass (OSOM) vehicles
Stage 2: Delivery of BESS infrastructure 3 months	60	20	10
Stage 3: Installation of BESS infrastructure 4 months	60	10	-

Operational access roads would be established around the batteries and ancillary infrastructure to facilitate movement around the site and to allow for ongoing maintenance. Internal access roads would be between 4 m and 6 m wide and comprise of a sealed gravel surface.

Constraints and need for further assessment

An assessment of site access will be undertaken as part of the EIS to assess if intersection works or road upgrades are necessary for the Proposal to meet Council and Transport for NSW guidelines. Ercildoune road provides the main access to the site and is currently unsealed. Management of traffic, for safety as well as road pavement conditions, would be required.

The access route would be further investigated during the preparation of the EIS. Construction traffic impacts would be considered in the EIS and take into consideration existing traffic volumes and any requirements from the road's authority.

The mitigation measures would require the preparation of a Traffic Management Plan and the confirmation of haulage routes with the inland transportation from Port of Melbourne to the project site.

7.10. Soil and landforms

Soils on site are most likely to be classed as vertosols, with a lesser chance of being classed as chromosols or rudosols under the Australian Soil Classification (ASC) Order (ASC 2010). Under the Great Soil Groups classification, on site soils are mapped as grey, brown and red clays with nearby areas of siliceous sands (GSG 2012).

Four nearby soil profiles were assessed to estimate the soil condition and texture on site. The following soil predictions were made:

Topsoil:

- Dark reddish and greyish brown to very dark grey in colour.
- Silty earthy loams and light clays.
- Sub angular to granular peds.
- Coarse fragments and pans not evident.

Subsoil:

- Brown, dark greyish brown and light brownish grey in colour.

- Light and medium clays.
- Coarse fragments and pans not evident.
- Calcareous.

The soil landscape was also inferred from the available soil profiles and is described as pertaining:

- Stagnant alluvial plains.
- Level slope.
- Self-mulching cracked or hard-set surface condition.
- Imperfect drainage.
- No salting evidences.
- Slight erosion hazard (wind and sheet wash).

No part of the Subject Land or surrounds is mapped as Biophysical Strategic Agricultural Land (BSAL), which is land identified to have high quality soil and water resources capable of sustaining high levels of productivity.

The Subject Land is mapped within the Land and Soil Capability Assessment Scheme state-wide mapping as having the following:

- 3 – Moderate limitations

Nearby and adjacent lands are mapped as:

- 4 – Moderate to severe limitations
- 6 – Very severe limitations

Class 3 land has moderate limitations, however, is considered to be land capable of a wide variety of land uses such as cropping, grazing, horticulture, forestry and nature conservation. Class 4 is considered moderate capability land and has some restrictions on land use, requiring some specialised land management practices.

A search of the NSW Contaminated Sites Register was undertaken on 18 May 2021. The search identified no sites nearby to the Subject Land or within the Murrumbidgee LGA. The Subject Land does not appear on the List of NSW Contaminated Sites notified to the EPA as of 18 May 2021. One site in Coleambally is on the notified list but does not require regulation under the CLM Act.

The area would be heavily influenced by overland water flow and more recent irrigation activities. Soil compaction would occur as hardstands and internal access roads are created, which would reduce soil permeability thereby increasing run off and the potential for concentrated flows. During excavations, mixing of different soil horizons can retard plant growth due to inadequate topsoil layer. Overall, these impacts would occur in small, discreet parts of the Proposal area and are not considered substantial.

Chemicals used onsite would include fuels, lubricants and herbicides (minimally). The use of fuels and other chemicals onsite pose a risk of soil contamination in the event of a spill. Spills of these contaminants can alter soil health and affect its ability to support plant growth. When mobilised, such as in a rain event or flooding, the substances may spread via local drainage lines, affecting much larger areas including aquatic habitat. Overall, these risks are low and considered readily manageable.

Desktop searches of the SEED Portal did not identify acid sulphate soils within the Subject Land.

Constraints and need for further assessment

Consideration of soil and erosion impacts, and proposed mitigation measures for the construction, operation and decommissioning of the BESS would be included within the EIS.

Presence of substantive contamination within the Subject Land is considered unlikely. As such, it is anticipated that a detailed investigation of contamination would not be required within the EIS.

Management of ground cover during operation and restoration of the land capability of the Subject Land would be recommended in the EIS and is considered highly feasible. Rehabilitation would be with reference to a base line assessment to guide any remedial management actions that may affect maintaining groundcover during operation or rehabilitation disturbed areas during decommissioning.

7.11. Social and economic impacts

The Subject Land is located within the Murrumbidgee LGA, within the suburb of Coleambally. 2016 Census results from each of these areas were used to assess demographics in the area. The Murrumbidgee LGA did not include the former Jerilderie Shire Council at the time of the 2016 census. Table 7-7 provides a statistical overview of the Murrumbidgee LGA and suburb of Coleambally.

Table 7-7 Statistical overview of the Murrumbidgee LGA and suburb of Coleambally.

Statistic	Murrumbidgee LGA (ABS, 2016a)	Coleambally (suburb) (ABS, 2016b)
Population	2,261	1,331
Median age	38	39
Main industry of employment	• Sheep, Beef cattle and grain farming • Poultry farming • Meat and Meat Product Manufacturing • School education	• Other grain growing • Grain-sheep or grain-beef cattle farming • Combined primary and secondary education • Poultry processing
Unemployment rate	5.9%	6.3%

Economic benefits are expected to be generated by the development, construction, and to a lesser extent during operation of the BESS facility. Benefits would include local employment opportunities and stimulus to the local economy by consulting services during project development, local job opportunities for construction, construction staff spending money either at local accommodation, local businesses (groceries, markets, shops) recreational facilities, or hospitality venues, as well as job opportunities for operation and maintenance services for the lifetime of the BESS facility.

Constraints and need for further assessment

The EIS would assess potential social and economic impacts of the Proposal, including issues perceived by the community to be of concern and cumulative impacts of other proposed developments in the region. An investigation of ways to spread the benefits of the Proposal into

operation would also be included within the EIS. Consultation to date is summarised in Section 5 of this report and would continue into the operational stage of the Proposal.

7.12. Electric and magnetic fields (EMFs)

Constraints and need for further assessment

EMFs are produced within the vicinity of existing powerlines and equipment with electrical flow. Additional infrastructure proposed within the Subject Land such as inverters, connecting powerlines and the substation would produce additional EMF within their vicinity.

Potential impacts

The EMF levels associated with the BESS infrastructure are well below the guideline for public exposure. Impact on human health is expected to be low for site users and nearby receivers. There can, however, be perceived impacts for nearby residents.

Constraints and need for further assessment

The EMF levels of the Proposal would be considered and assessed against safe exposure levels as part of the EIS. Standard design provisions are expected to ensure any impacts comply with relevant guidelines together with communication of the issue as required.

7.13. Cumulative impacts

Constraints and need for further assessment

Cumulative impacts refer to the combined effect of impacts from several activities on a particular value or receiver. These may occur concurrently or sequentially. The relevant cumulative impacts are those associated with other known or foreseeable developments occurring in proximity to the Proposal. Major projects listed on the Major Projects Register within the Coleambally area (and their current status) are:

- Coleambally Solar Farm – Construction Ancillary Areas Modification - Approved
- Agri waste Energy from Waste Facility – Preparation of EIS
- Coleambally Ethanol Plant – Amend Approval Lapse Date – Approved

Two further projects (quarries) were identified within 2 km of the site, however, were not included on the Major Project Register or any other available information provider. All projects can be seen mapped in Figure 7-1.

Potential impacts

Potential cumulative impacts of overlapping construction periods are primarily associated with traffic impacts, pressures on local facilities, goods and services availability and vegetation clearing.

Searches for nearby projects was limited to the Major Projects Register as these projects are generally of larger scale than projects captured under council development applications. The BESS is highly related to the Solar farm and would contribute to similar impacts. The additional impact, if any, from the BESS to impacts presented by the Solar farm would be minor compared to the impact

the Solar farm present as a standalone impact source. Since the Solar farm is within the operational phase no cumulative construction impacts are expected. Due to the distance from the BESS to the Ethanol plant and Agri-waste sites, cumulative impacts are expected to be minor.

Constraints and need for further assessment

Potential cumulative impacts would be assessed within the EIS. 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 Murrumbidgee LGA.

8. CONSTRAINTS ASSESSMENT

A constraints assessment has been carried out for the Subject Land below, using the existing environment data as documented in Section 7.

Low, moderate and high environmental constraints are defined in Table 8-1 and may be viewed in Section 8.1 with reference to the 'developability' of the Subject Land. Where uncertainty exists, a higher constraint rating has been applied as part of a conservative approach. Further investigation may reduce the constraint level. Mapping of the identified environmental constraints was undertaken for the Subject Land and is provided in Section 8.1., with the classification of constraints provided in Table 8-1.

Table 8-1 Environmental constraints.

Constraint	Definition
Low	Minimal impacts anticipated. Most suitable for development. Standard management protocols would be sufficient to manage any impacts.
Moderate	Impacts should be minimised, where possible. These areas may require specific management protocols and may add some cost and time to the assessment and approval process.
High	Priority for further investigation. These areas may be difficult, expensive or may not be possible to obtain approval to develop. They may require costly additional surveys to understand and manage or offset impacts.

8.1. Results

8.1.1. Low environmental constraints

Low environmental impacts are anticipated within the low constraint areas. These areas are the most suitable for development as they do not contain sensitive features such as waterways, receivers and high ecological values.

Biodiversity credits are unlikely to be generated within these areas or may have very low biodiversity credit requirements if they do. Low environmental constraints include:

- **Visual amenity:** No sensitive receivers located within 1 km of the site; vegetation assists screening. A BESS would fit in to the landscape with neighbouring electricity generation and distribution infrastructure. Minimal dust would be generated as part of construction and operation.
- **Noise and Vibration:** No sensitive receivers located within 1 km of the site; vegetation assists screening.
- **Hydrology, groundwater and water use:** No streams or drainages identified on site. One small farm dam exists as a low-quality opportunistic water resource.
- **Land use:** The site is currently open agricultural land. Nearby land is used for electricity generation and distribution already. A solar farm is permissible on the land under SEPP 55, The BESS is likely to be similarly permissible.
- **Hazards – bushfire and battery storage:** Land is not identified as bush fire prone. Significant buffer between neighbouring bush fire prone land and development footprint.

- **Traffic and access:** New access point proposed along Ercildoune Road. Operation traffic increase would be minimal – one ongoing employee. Mitigation measures available during construction.
- **Soil and landforms:** Minimal erosion risk due to site topography. Small footprint size compared to Subject Land. Contamination controls readily available.
- **Social and economic impacts:** Increased job opportunities within the region. New project to build on industry in the area.
- **Non- indigenous heritage:** Very limited heritage items within the Coleambally area due to recent development of the area as an irrigation opportunity.
- **Electric and Magnetic fields:** Impacts are well understood and below the industry guidelines.

Mapping of site constraints can be seen in figure 8-1.

8.1.2. Moderate environmental constraints

Impacts should be minimised where possible in areas categorised as having moderate environmental constraints. These areas include:

- **Aboriginal Heritage:** Two registered aboriginal items exist on the Subject Land. Although these items are not within the development footprint further investigation is warranted to ensure no impacts to these items is generated by the Proposal and the likelihood for further items to remain on site is low.
- **Biodiversity** PCT and TEC areas were identified on site. Further assessment in the form of a BDAR is recommended to gauge and manage future impacts on these areas. Biodiversity is not considered a high constraint due to the highly modified/disturbed nature of the site, minimal native species presence, lack of optimal habitat for threatened species and the proposed avoidance of native vegetation and habitat features.

Mapping of site constraints can be seen in figure 8-1.

8.1.3. High environmental constraints

No high environmental constraints have been identified. Mapping of site constraints can be seen in figure 8-1.

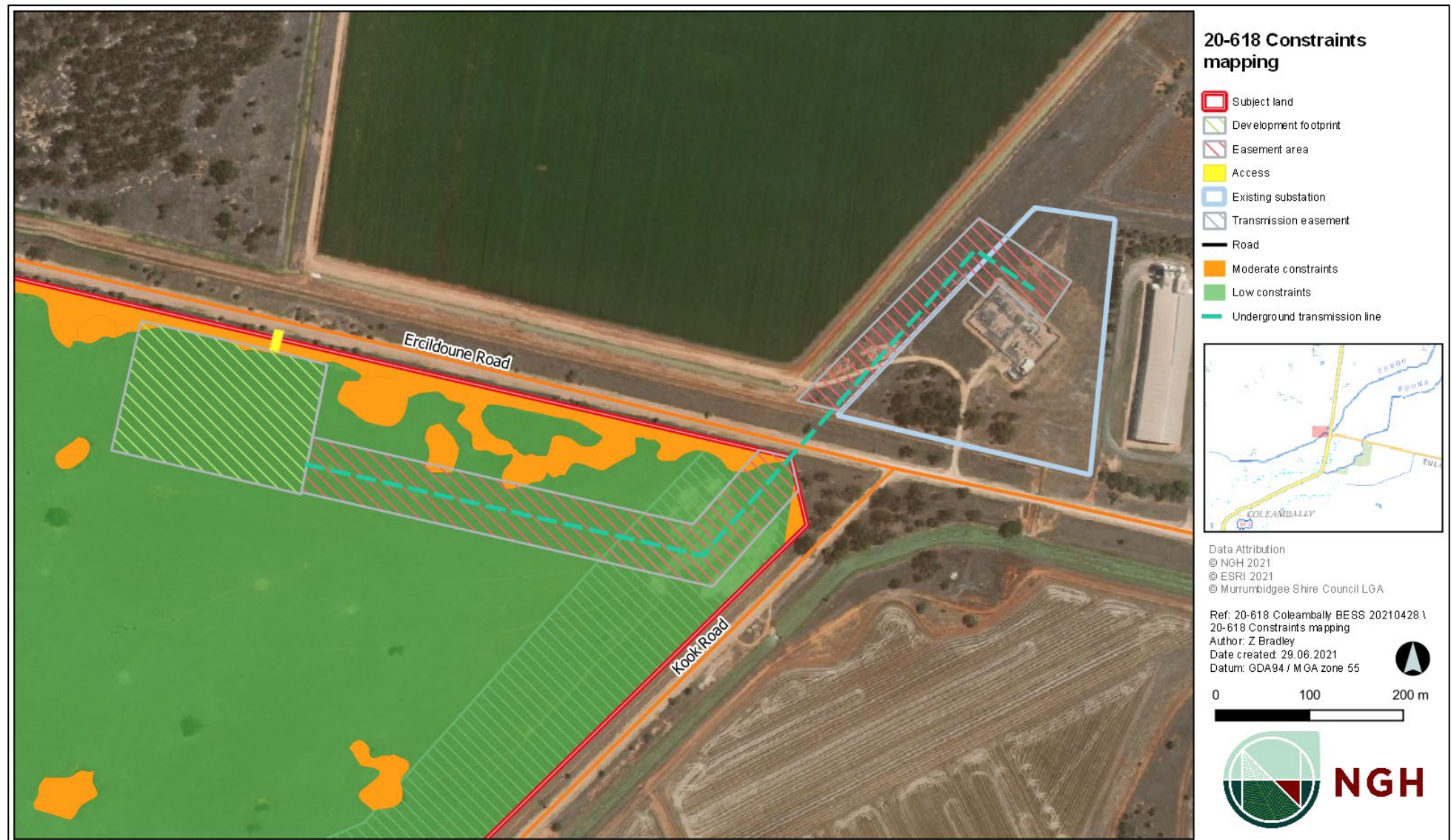


Figure 8-1 Site constraint mapping

9. CONCLUSION AND RECOMMENDATIONS

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

The Scoping Report has categorised the potential environmental impacts of the Proposal. Based on this Scoping Report, an indicative scope for the EIS has been developed, focusing on key issues:

- **Visual amenity:** including residential receivers within 1 km of the Development Footprint.
- **Noise and vibration:** including residential receivers within 1 km of the Development Footprint.
- **Hydrology, groundwater and water use:** including potential impacts to flooding and waterways.
- **Biodiversity:** including particular high constraint vegetation zones.
- **Land use compatibility:** including economic impacts to the region and rehabilitation of the site to its pre-development use.
- **Aboriginal heritage:** including potential for significant sites and objects.
- **Hazards – bushfire and battery storage:** including bushfire risk associated with battery systems.
- **Traffic and access:** including potential requirement for road upgrades and intersection treatments.
- **Soil and landforms:** including soil limitations and associated construction hazards.
- **Social and economic impacts:** including potential impacts to the surrounding Coleambally township in relation to cumulative construction impacts and employment opportunities.
- **Electric and Magnetic fields:** including association with the nearby substation.
- **Cumulative impacts:** including association with the Coleambally solar farm and substation adjacent to the site.

Secondary issues would also be investigated, commensurate with risk, through desktop investigation.

An Environmental Impact Statement (EIS) would be prepared in accordance with Proposal-specific SEARs. Mitigation measures will be developed for inclusion in the EIS and will address the management of key issues and risks identified in the assessment and community and stakeholder engagement process.

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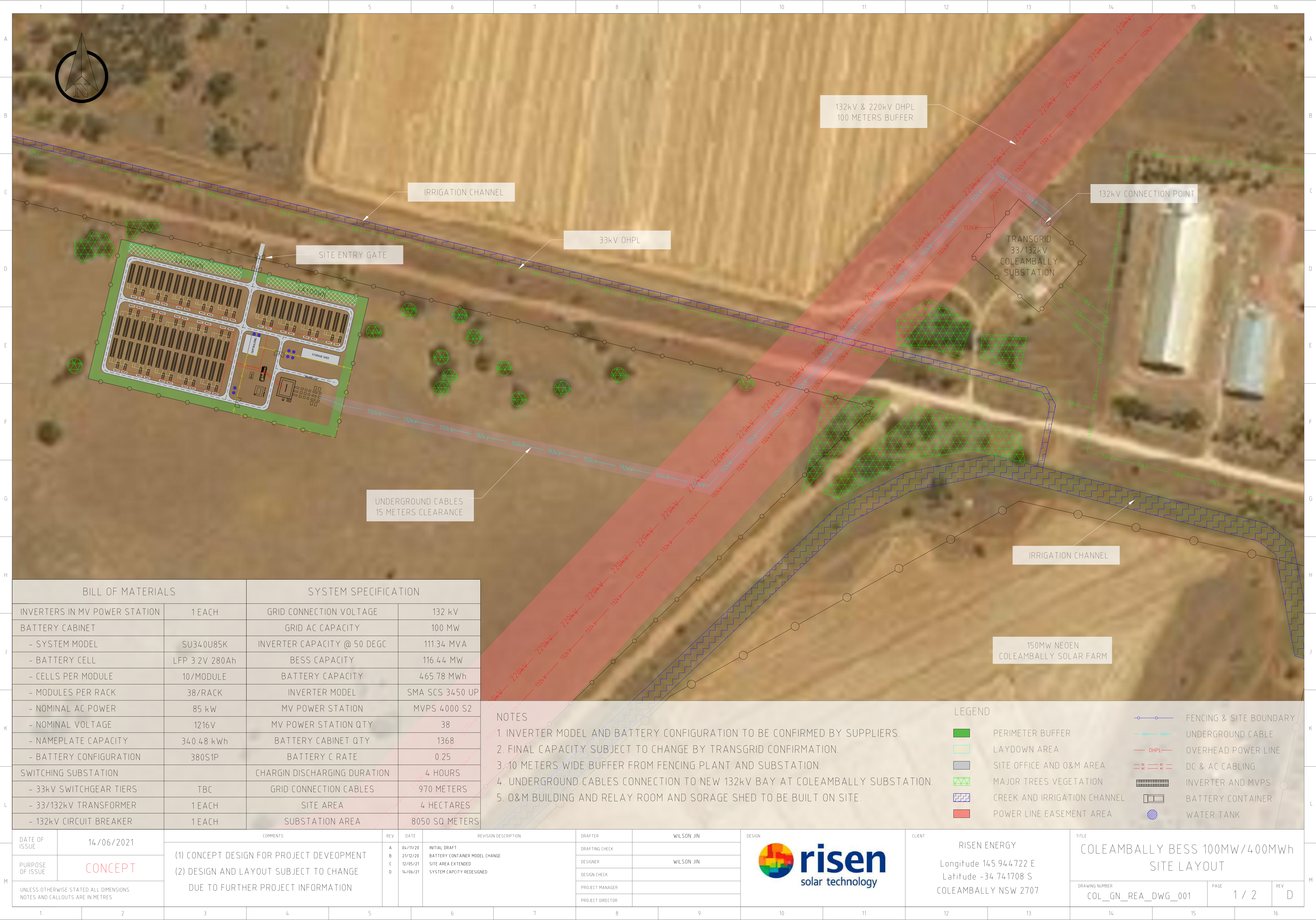
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APPENDIX A SITE PLANS



BILL OF MATERIALS		SYSTEM SPECIFICATION	
INVERTERS IN MV POWER STATION	1 EACH	GRID CONNECTION VOLTAGE	132 kV
BATTERY CABINET		GRID AC CAPACITY	100 MW
- SYSTEM MODEL	SU340U85K	INVERTER CAPACITY @ 50 DEGC	111.34 MVA
- BATTERY CELL	LFP 3.2V 280Ah	BESS CAPACITY	116.44 MW
- CELLS PER MODULE	10/MODULE	BATTERY CAPACITY	465.78 MWh
- MODULES PER RACK	38/RACK	INVERTER MODEL	SMA SCS 3450 UP
- NOMINAL AC POWER	85 kW	MV POWER STATION	MVPS 4000 S2
- NOMINAL VOLTAGE	1216V	MV POWER STATION QTY	38
- NAMEPLATE CAPACITY	340.48 kWh	BATTERY CABINET QTY	1368
- BATTERY CONFIGURATION	380S1P	BATTERY C RATE	0.25
SWITCHING SUBSTATION		CHARGE/DISCHARGING DURATION	4 HOURS
- 33kV SWITCHGEAR TIERS	TBC	GRID CONNECTION CABLES	970 METERS
- 33/132kV TRANSFORMER	1 EACH	SITE AREA	4 HECTARES
- 132kV CIRCUIT BREAKER	1 EACH	SUBSTATION AREA	8050 SQ. METERS

NOTES

1. INVERTER MODEL AND BATTERY CONFIGURATION TO BE CONFIRMED BY SUPPLIERS.
2. FINAL CAPACITY SUBJECT TO CHANGE BY TRANSGRID CONFIRMATION.
3. 10 METERS WIDE BUFFER FROM FENCING PLANT AND SUBSTATION.
4. UNDERGROUND CABLES CONNECTION TO NEW 132kV BAY AT COLEAMBALLY SUBSTATION.
5. O&M BUILDING AND RELAY ROOM AND SORAGE SHED TO BE BUILT ON SITE.

LEGEND

- PERIMETER BUFFER
- LAYDOWN AREA
- SITE OFFICE AND O&M AREA
- MAJOR TREES VEGETATION
- CREEK AND IRRIGATION CHANNEL
- POWER LINE EASEMENT AREA
- FENCING & SITE BOUNDARY
- UNDERGROUND CABLE
- OVERHEAD POWER LINE
- DC & AC CABLING
- INVERTER AND MVPS
- BATTERY CONTAINER
- WATER TANK

DATE OF ISSUE	14/06/2021	COMMENTS (1) CONCEPT DESIGN FOR PROJECT DEVELOPMENT (2) DESIGN AND LAYOUT SUBJECT TO CHANGE DUE TO FURTHER PROJECT INFORMATION	REV	DATE	REVISION DESCRIPTION	DRAFTER	WILSON JIN	DESIGN 	CLIENT RISEN ENERGY Longitude 145.944722 E Latitude -34.741708 S COLEAMBALLY NSW 2707	TITLE COLEAMBALLY BESS 100MW/400MWh SITE LAYOUT		
PURPOSE OF ISSUE	CONCEPT		A	04/11/20	INITIAL DRAFT	DRAFTING CHECK						
UNLESS OTHERWISE STATED ALL DIMENSIONS NOTES AND CALLOUTS ARE IN METRES			B	21/12/20	BATTERY CONTAINER MODEL CHANGE							
			C	12/05/21	SITE AREA EXTENDED	DESIGNER	WILSON JIN					
			D	14/06/21	SYSTEM CAPCITY REDESIGNED	DESIGN CHECK						
						PROJECT MANAGER						
						PROJECT DIRECTOR		DRAWING NUMBER COL_GN_REA_DWG_001				
								PAGE 1 / 2	REV D			

APPENDIX B BACKGROUND SEARCH RESULTS

B.1 eSPADE soil profile reports



Soil Essentials Report

SITE DETAILS

Site Location:	Murrumbidgee Shire demo farm - E of woodland
Map Reference:	MGA Grid Reference: Zone 55, 403468E, 6155528N. 8028 COLEAMBALLY (1:100000) map sheet.
Profile Details:	Soil Landscapes of Narrandera 1:100 000 Sheet Survey (1004532), Profile 1, collected by Ms Janet Wild on 15 September, 2004
Physiography:	plain in stagnant alluvial plain on clay, alluvium lithology and used for timber/scrub/unused. Slope 0% (estimated), local relief extremely low (< 9m), elevation 121.0 m, aspect flat. Surface condition is cracked, self mulched, profile drainage is imperfectly drained, erosion hazard is slight, and no salting evident
Soil Type:	Brown Vertosol (ASC), Brown Clay (GSG)
Base of observation:	layer continues
Profile Field Notes:	Fieldwork sponsored by Australian Society of Soil Science, Riverina Branch. Approx 20 m E of edge of woodland. Photos - 2 of profile, 1 of site. Self-mulching brown clay. Yoorroobla Clay.

SOIL DESCRIPTION

Layer 0

Layer 1

0.00 - 0.09 m A Horizon	dark reddish brown (5YR 3/3) [moist] silty loam with moderate pedality (sub-angular blocky, 10 - 20 mm, rough-faced peds), field pH is 6.0. Coarse fragments are not evident, pans are not evident, segregations are common (10% - 20%), fine (< 2 mm), ferruginous. Layer notes are: Sporadically bleached; gradual (50-100 mm) boundary to ...
----------------------------	--

Layer 2

0.09 - 0.60 m B Horizon	brown (7.5YR 4/4) [moist] light clay with strong pedality (angular blocky, 50 - 100 mm, smooth-faced peds), field pH is 7.5. Coarse fragments are not evident, pans are not evident, segregations are few (2% - 10%), medium (2-6 mm), calcareous. Layer notes are: Lime nodules below 44 cm (increasing gradually below 60 cm, from adjacent spoil pit)
----------------------------	--

Layer 99

LABORATORY TESTS

None available

For information on laboratory test data and units of measure, please see: [Soil survey standard test methods](#)

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Soil Essentials Report

SITE DETAILS

Site Location:	Murrumbidgee Shire demo farm - Wunnamurra
Map Reference:	MGA Grid Reference: Zone 55, 403456E, 6155497N. 8028 COLEAMBALLY (1:100000) map sheet.
Profile Details:	Soil Landscapes of Narrandera 1:100 000 Sheet Survey (1004532), Profile 2, collected by Ms Janet Wild on 15 September, 2004
Physiography:	plain in stagnant alluvial plain under woodland grass understorey on clay, alluvium lithology and used for timber/scrub/unused. Slope 0% (estimated), local relief extremely low (< 9m), elevation 121.0 m, aspect flat. Surface condition is self mulched, profile drainage is imperfectly drained, erosion hazard is slight, and no salting evident
Soil Type:	Self-mulching Grey Vertosol (ASC), Black Earth (GSG)
Base of observation:	layer continues
Profile Field Notes:	Fieldwork sponsored by Australian Society of Soil Science, Riverina. Cleared grassy area midway between E edge of woodland and irrigation channel. Paired site with profile 1 approx 25m to NE of this site. Self-mulching grey clay. Wunnamurra Clay.

SOIL DESCRIPTION

Layer 0

Layer 1

0.00 - 0.07 m A Horizon	dark greyish brown (greyish yellow brown) (10YR 4/2) [moist] light clay with strong pedality (granular, 5 - 10 mm, rough-faced peds), field pH is 7.5. Coarse fragments are not evident, pans are not evident, segregations are few (2% - 10%), fine (< 2 mm), calcareous; gradual (50-100 mm) boundary to ...
----------------------------	--

Layer 2

0.07 - 0.79 m B Horizon	dark greyish brown (greyish yellow brown) (10YR 4/2) [moist] medium clay with strong pedality (prismatic, 100 - 200 mm, smooth-faced peds), field pH is 8.5. Coarse fragments are not evident, pans are not evident, segregations are few (2% - 10%), fine (< 2 mm), medium (2-6 mm), calcareous
----------------------------	--

Layer 99

LABORATORY TESTS

None available

For information on laboratory test data and units of measure, please see: [Soil survey standard test methods](#)



Soil Essentials Report

SITE DETAILS

Site Location:	Murrumbidgee Shire Demo farm - Woodland, gilgai depression
Map Reference:	MGA Grid Reference: Zone 55, 403410E, 6155485N. 8028 COLEAMBALLY (1:100000) map sheet.
Profile Details:	Soil Landscapes of Narrandera 1:100 000 Sheet Survey (1004532), Profile 3, collected by Ms Janet Wild on 15 September, 2004
Physiography:	plain in stagnant alluvial plain on clay, alluvium lithology and used for timber/scrub/unused. Slope 0% (estimated), local relief extremely low (< 9m), elevation 120.0 m, aspect flat. Surface condition is hard set, profile drainage is poorly drained, erosion hazard is slight, and no salting evident
Soil Type:	Brown Dermosol (ASC), Grey Clay (GSG)
Base of observation:	layer continues
Profile Field Notes:	Fieldwork sponsored by Australian Society of Soil Science, Riverina. Depression approx 4-5 m diameter and 1 m deep. By spade to 7 cm then auger. Paired site with gilgai puff (profile 9). Non-self mulching grey clay with lime in deep subsoil, Riverina Clay.

SOIL DESCRIPTION

Layer 0

Layer 1

0.00 - 0.07 m A Horizon	dark greyish brown (greyish yellow brown) (10YR 4/2) [moist] silty loam with massive structure (earthy), field pH is 6.5. Coarse fragments are not evident, pans are not evident, segregations are not evident. Layer notes are: Slight platy structure to 5 cm; abrupt (5-20 mm) boundary to ...
----------------------------	---

Layer 2

0.07 - 0.48 m B21 Horizon	greyish brown (greyish yellow brown) (10YR 5/2) [moist] medium clay with weak pedality (sub-angular blocky, 20 - 50 mm, rough-faced peds), field pH is 8.5. Coarse fragments are not evident, pans are not evident, segregations are not evident; gradual (50-100 mm) boundary to ...
------------------------------	---

Layer 3

0.48 - 0.87 m B22k Horizon	light brownish grey (greyish yellow) (2.5Y 6/2) [moist] medium clay with moderate pedality (sub-angular blocky, 20 - 50 mm, rough-faced peds), field pH is 8.5. Coarse fragments are not evident, pans are not evident, segregations are very few (< 2%), medium (2-6 mm), calcareous; diffuse (>100 mm) boundary to ...
-------------------------------	--

Layer 4

0.87 - 1.07 m B23 Horizon	light brownish grey (greyish yellow) (2.5Y 6/2) [moist] medium clay with massive structure (earthy), field pH is 8.5. Coarse fragments are not evident, pans are not evident, segregations are very few (< 2%), medium (2-6 mm), calcareous; diffuse (>100 mm) boundary to ...
------------------------------	--

Layer 5

1.07 - 1.24 m
B3 Horizon

light brownish grey (greyish yellow) (2.5Y 6/2) [moist] medium clay with massive structure (earthy). Coarse fragments are not evident, pans are not evident, segregations are very few (< 2%), medium (2-6 mm), calcareous

Layer 99

LABORATORY TESTS

None available

For information on laboratory test data and units of measure, please see: [Soil survey standard test methods](#)

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Soil Essentials Report

SITE DETAILS

Site Location:	Murrumbidgee demo farm - gilgai puff
Map Reference:	MGA Grid Reference: Zone 55, 403403E, 6155492N. 8028 COLEAMBALLY (1:100000) map sheet.
Profile Details:	Soil Landscapes of Narrandera 1:100 000 Sheet Survey (1004532), Profile 9, collected by Ms Janet Wild on 16 September, 2004
Physiography:	plain in stagnant alluvial plain on alluvium lithology and used for timber/scrub/unused. Slope 0% (estimated), elevation 121.0 m, aspect flat. Surface condition is self mulched, profile drainage is imperfectly drained, erosion hazard is slight, and no salting evident
Soil Type:	Self-mulching Grey Vertosol (ASC), Black Earth (GSG)
Base of observation:	layer continues
Profile Field Notes:	Fieldwork sponsored by Australian Society of Soil Science, Riverina. Paired site with gilgai depression 8 m to E and 1 m lower (profile 3) Sampled by spade. Grey self-mulching clay. Wunnamurra Clay.

SOIL DESCRIPTION

Layer 0

Layer 1

0.00 - 0.12 m A Horizon	very dark grey (brownish black) (10YR 3/1) [moist] heavy clay loam with strong pedality (granular, 5 - 10 mm, smooth-faced peds), field pH is 8.5. Coarse fragments are not evident, pans are not evident, segregations are very few (< 2%), medium (2-6 mm), calcareous
----------------------------	--

Layer 99

LABORATORY TESTS

None available

For information on laboratory test data and units of measure, please see: [Soil survey standard test methods](#)

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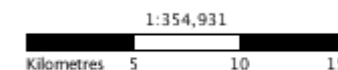
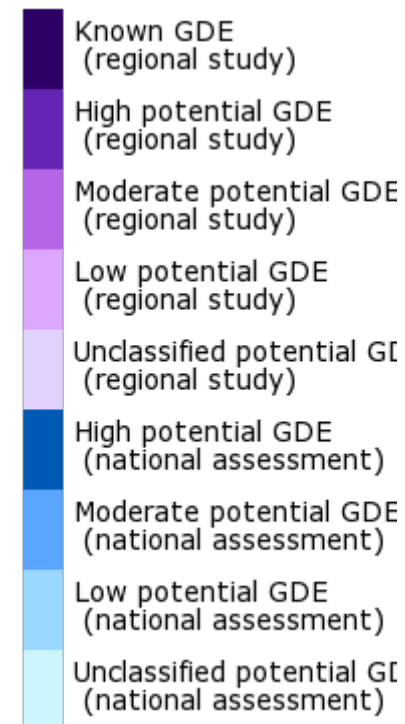
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B.2 Groundwater Dependant Ecosystems (GDEs) atlas



Aquatic GDE



Data Source: Bureau of Meteorology, Geoscience Australia and State/Territory lead water agencies. Refer to metadata for further information: [Click here](#)

Australian Albers GDA94

Date: 24 May, 2021



B.3 Protected Matters Search Tool (PMST) results



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

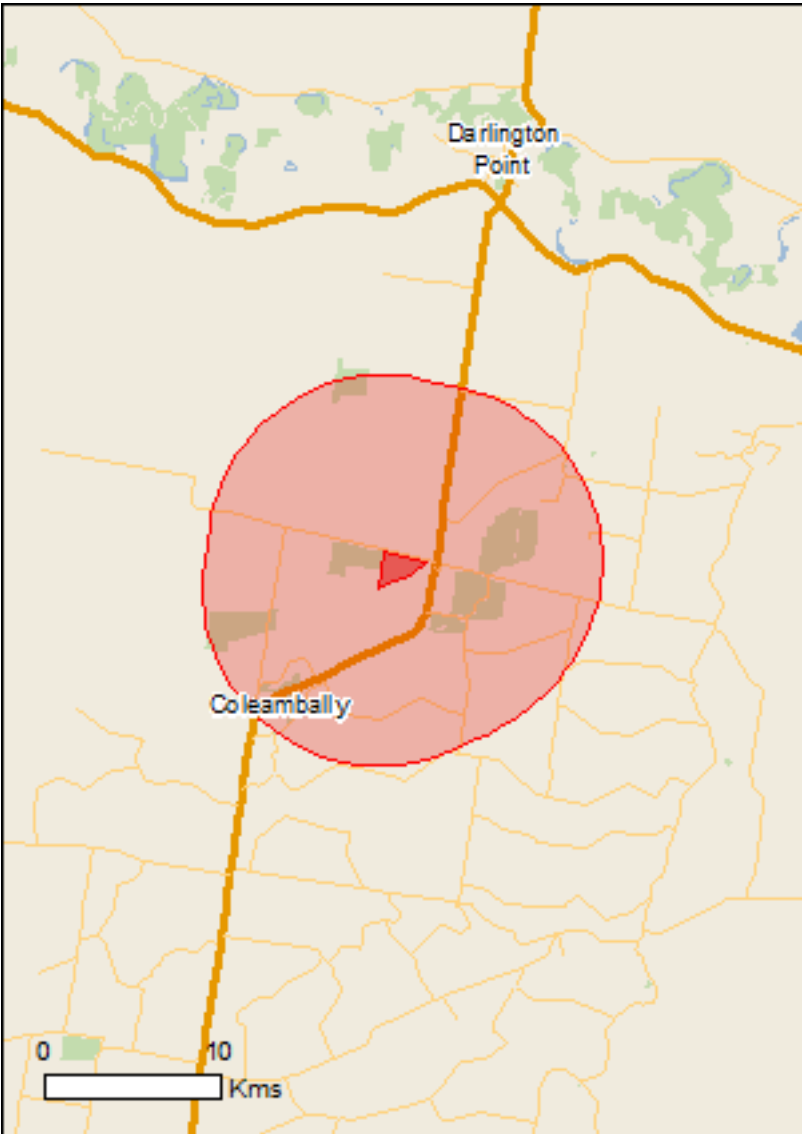
Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 01/12/20 11:00:07

- [Summary](#)
- [Details](#)

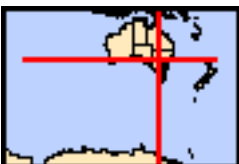
[Matters of NES](#)[Other Matters Protected by the EPBC Act](#)[Extra Information](#)
- [Caveat](#)
- [Acknowledgements](#)



This map may contain data which are
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[Coordinates](#)

Buffer: 10.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	16
Listed Migratory Species:	9

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	15
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	1
Regional Forest Agreements:	None
Invasive Species:	21
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)		[Resource Information]
Name	Proximity	
Banrock station wetland complex	500 - 600km upstream	
Hattah-kulkyne lakes	300 - 400km upstream	
Riverland	400 - 500km upstream	
The coorong, and lakes alexandrina and albert wetland	500 - 600km upstream	

Listed Threatened Ecological Communities	[Resource Information]
--	--------------------------

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions	Endangered	Community may occur within area
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community likely to occur within area
Weeping Myall Woodlands	Endangered	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area

Listed Threatened Species	[Resource Information]
---------------------------	--------------------------

Name	Status	Type of Presence
Birds		
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat likely to occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species

Name	Status	Type of Presence
Rostratula australis Australian Painted Snipe [77037]	Endangered	habitat known to occur within area Species or species habitat likely to occur within area
Fish		
Galaxias rostratus Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat may occur within area
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
Frogs		
Litoria raniformis Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat known to occur within area
Mammals		
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat likely to occur within area
Plants		
Brachyscome papillosa Mossgiel Daisy [6625]	Vulnerable	Species or species habitat may occur within area
Swainsona murrayana Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat likely to occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within

Name	Threatened	Type of Presence
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		area Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land	[Resource Information]
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The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land - Australian Telecommunications Commission

Listed Marine Species	[Resource Information]
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* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within

Name	Threatened	Type of Presence
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		area Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Murrumbidgee Valley	NSW
Invasive Species	[Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-34.742474 145.952687,-34.748186 145.945134,-34.753475 145.929427,-34.738524 145.932174,-34.742403 145.952601,-34.742474 145.952687

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

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[Department of Agriculture Water and the Environment](#)

GPO Box 858

Canberra City ACT 2601 Australia

+61 2 6274 1111

B.4 Native vegetation regulation mapping

Layers



Click or tap locations to define a polygon. Double-click/tap to finish.



Start here...

Filter Layers...



Filter

☒ ☐ Cadastre >

☒ Werriwa_& Monaro CEEC Advisory >

Layer

☒ Land Excluded from LLS Act

☒ Native Vegetation Regulatory Map

(In force)

☒ Legends >

Vulnerable Regulated Land

Sensitive Regulated Land

Sensitive and Vulnerable Regulated Lands

☒ Administration

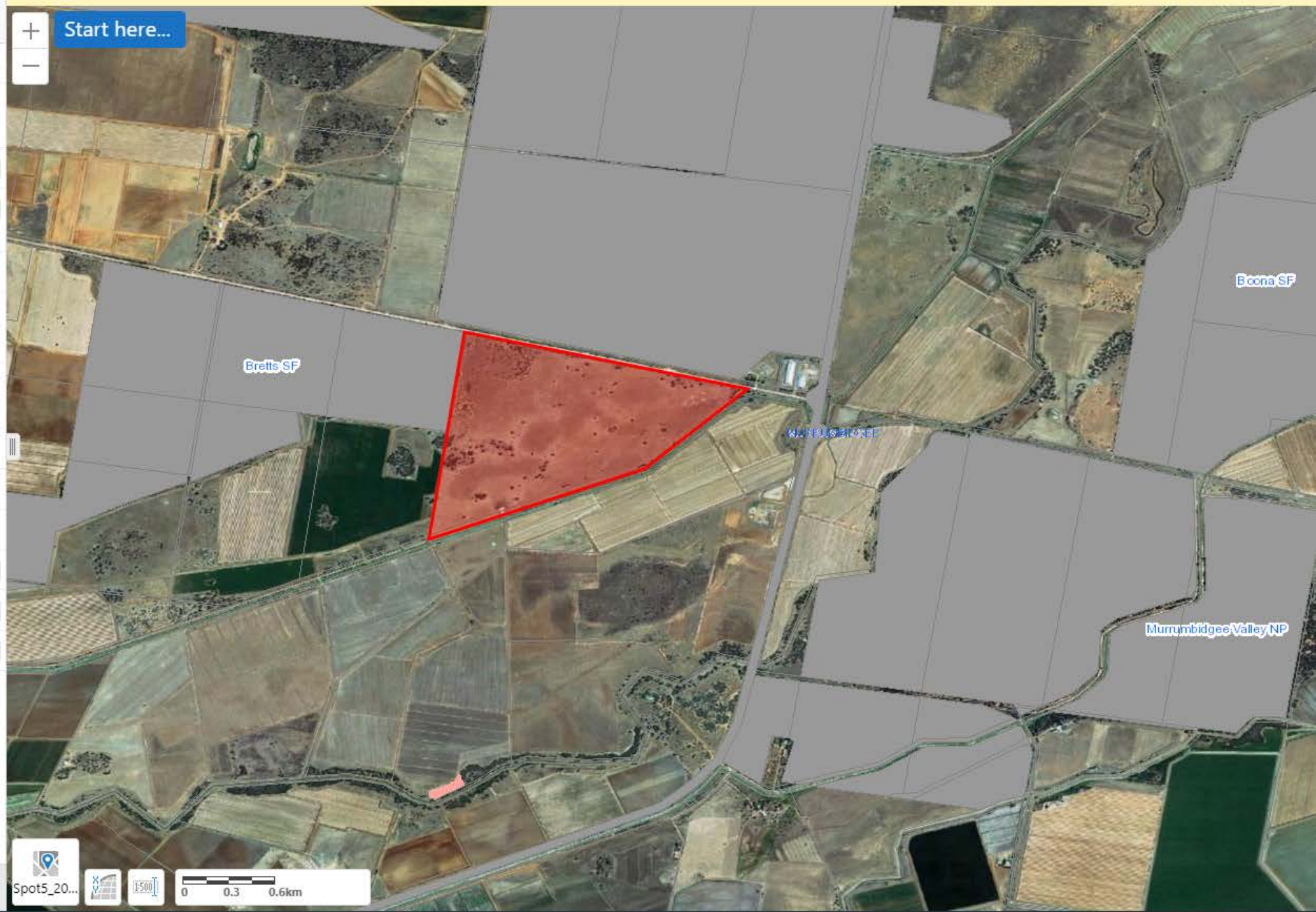
☒ Local Government Area >

☒ Local Land Service Regions >

☒ Spot5_2016

☐ Planet_Mosaic_NSW_2017

☐ DPIE Basemap



Spot5_20...



1:500

0 0.3 0.6km

Home

Layers

B.5 Bionet species sightings within 10km

Common Name	Latin Name	Listing	
		BC Act	EPBC Act
Superb Parrot <i>Polytelis swainsonii</i>	<i>Polytelis swainsonii</i>		
Grey-crowned Babbler (eastern subspecies)	<i>Pomatostomus temporalis temporalis</i>		
Painted Honeyeater <i>Grantiella picta</i>	<i>rantiella picta</i>		
Varied Sittella <i>Daphoenositta chrysoptera</i>	<i>Daphoenositta chrysoptera</i>		
Southern Myotis <i>Myotis macropus</i>	<i>Myotis macropus</i>		
Pine Donkey Orchid <i>Diuris tricolor</i>	<i>Diuris tricolor</i>		
Koala <i>Phascolarctos cinereus</i>	<i>Phascolarctos cinereus</i>		
Southern Bell Frog <i>Litoria raniformis</i>	<i>Litoria raniformis</i>		
Malleefowl <i>Leipoa ocellata</i>	<i>Leipoa ocellata</i>		
Black Falcon <i>Falco subniger</i>	<i>Falco subniger</i>		
Bush Stone-curlew <i>Burhinus grallarius</i>	<i>Burhinus grallarius</i>		
Spotted Harrier <i>Circus assimilis</i>	<i>Circus assimilis</i>		
Little Eagle <i>Hieraaetus morphnoides</i>	<i>Hieraaetus morphnoides</i>		

B.6 EPA Contaminated Site Register search results

Public registers

+ POEO Public Register

– Contaminated land record of notices

About the record of notices

List of notified sites

Tips for searching

Disclaimer

Dangerous goods licences

Pesticide licences

Radiation licences

[Home](#) [Public registers](#) [Contaminated land record of notices](#)

Search results

Your search for: LGA: MURRUMBIDGEE COUNCIL

did not find any records in our database.

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the [planning process](#).

More information about particular sites may be available from:

- The [POEO public register](#)
- The appropriate planning authority: for example, on a planning certificate issued by the local council under [section 149 of the Environmental Planning and Assessment Act](#).

See [What's in the record and What's not in the record](#).

Search Again

Refine Search

Search TIP

To search for a specific site, search by LGA (local government area) and carefully review all sites listed.

... [more search tips](#)

B.7 AHIMS search results

NGH Heritage - Fyshwick

Date: 04 December 2020

17/27 Yallourn St

Fyshwick Australian Capital Territory 2609

Attention: Bridgette Poulton

Email: bridgette.p@nghenviromental.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 100, DP:DP1139115 with a Buffer of 0 meters, conducted by Bridgette Poulton on 04 December 2020.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

2	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(http://www.nsw.gov.au/gazette\)](http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

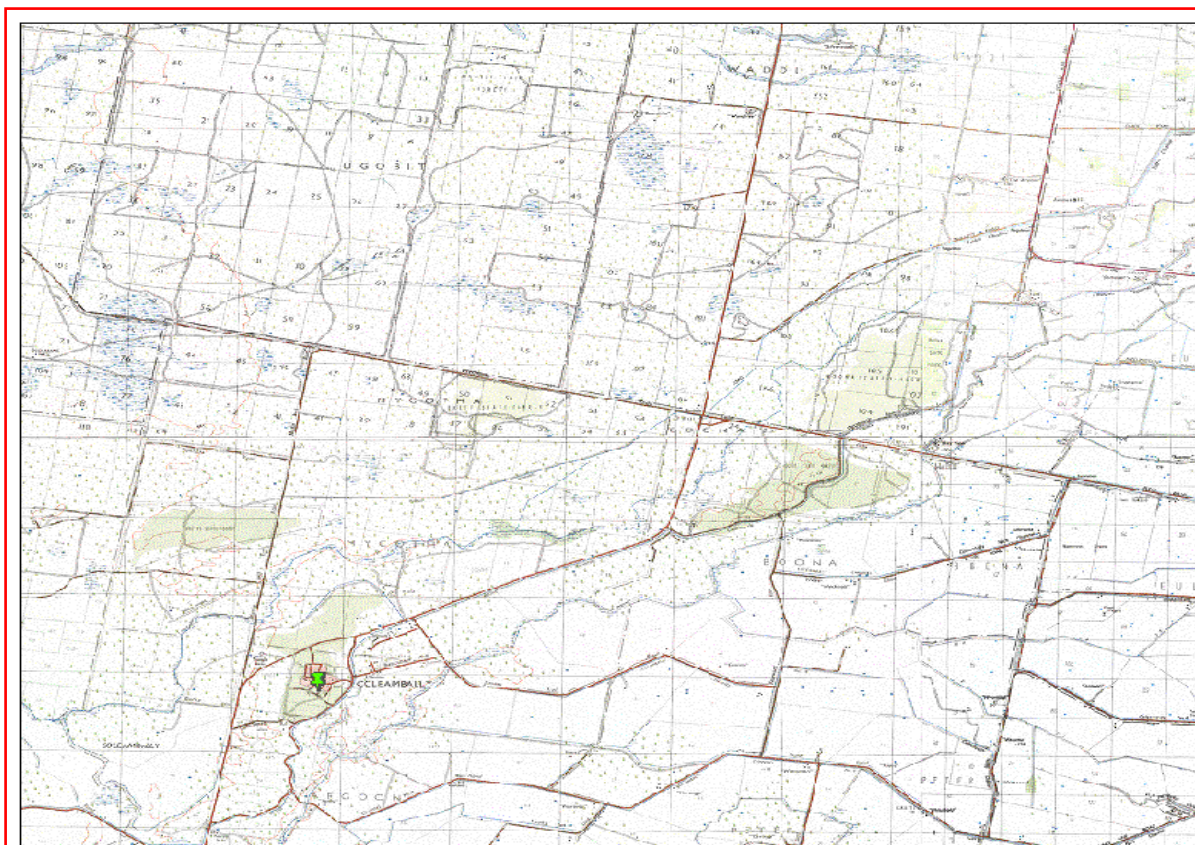
NGH Consulting
35 Kincaid Street
Wagga Wagga New South Wales 2650
Attention: Zach Bradley
Email: zac.b@nghconsulting.com.au

Date: 18 May 2021

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -34.8222, 145.8224 - Lat, Long To : -34.6743, 146.0565 with a Buffer of 0 meters, conducted by Zach Bradley on 18 May 2021.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

24	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(http://www.nsw.gov.au/gazette\)](http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

B.8 Australian Heritage Database (AHD) search results

Search Results

[new search](#) [edit search](#)

7 results found.

Carrathool Bridge Wright Lane	Carrathool, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Courthouse Group (former) Darlington St	Darlington Point, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Indigenous Place	Darlington Point, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Old Warrangesda Mission	Darlington Point, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Tubbo Station Group Sturt Hwy	Darlington Point, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Tubbo Station Homestead and Outbuildings Sturt Hwy	Darlington Point, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Tubbo Station Woolshed Complex Sturt Hwy	Darlington Point, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Report Produced: Wed May 19 11:09:00 2021

B.9 State Heritage Inventory (SHI) search results

Section 1. Aboriginal Places listed under the National Parks and Wildlife Act.

Your search did not return any matching results.

Section 2. Items listed under the Heritage Act.

Your search returned 3 records.

Item name ▲	Address	Suburb	LGA	SHR
Jerilderie Railway Station Group	Nowranie Street	Jerilderie	Murrumbidgee	01658
The Yanko Station Store	1063 Kidman Way	Jerilderie	Murrumbidgee	02039
Warangesda Aboriginal Mission and Station	"Warangesda"	Darlington Point	Murrumbidgee	01810

Section 3. Items listed by Local Government and State Agencies.

Your search returned 42 records.

Item name ^	Address	Suburb	LGA	Information source
Algudgerie Weir	Billabong Creek	Jerilderie	Murrumbidgee	SGOV
Bank (Former)	45 Jerilderie Street	Jerilderie	Murrumbidgee	LGOV
Blacksmiths Museum	17-19 Powell Street	Jerilderie	Murrumbidgee	LGOV
Cocketegedong Weir	Colombo Creek	Jerilderie	Murrumbidgee	SGOV
Coleambally Main Canal Bridge No. 2		Coleambally	Murrumbidgee	SGOV
Coleambally Offtake Bridge Regulator		Coleambally	Murrumbidgee	SGOV
Coonong Weir	Colombo Creek	Jerilderie	Murrumbidgee	SGOV
Court House Group (former)	23 Carrington Street	Darlington Point	Murrumbidgee	LGOV
Courthouse		Jerilderie	Murrumbidgee	GAZ
Jerilderie Courthouse	106 Jerilderie Street	Jerilderie	Murrumbidgee	LGOV
Jerilderie Main Street Heritage Conservation Area		Jerilderie	Murrumbidgee	LGOV
Jerilderie Ned Kelly Post & Telegraph Museum	15 Powell Street	Jerilderie	Murrumbidgee	LGOV
Jerilderie Police Stables	117B Jerilderie Street	Jerilderie	Murrumbidgee	LGOV
Jerilderie Public School	27-33 Bolton Street	Jerilderie	Murrumbidgee	LGOV
Jerilderie Public School - Buildings B00A and B00B	27-33 Bolton Street	Jerilderie	Murrumbidgee	SGOV
Jerilderie Public School Residence	Nowranie Street	Jerilderie	Murrumbidgee	LGOV
Jerilderie Railway Station		Jerilderie	Murrumbidgee	GAZ

Jerilderie Railway Station	Coonong Street	Jerilderie	Murrumbidgee	SGOV
Jerilderie Rock Weir	Billabong Creek	Jerilderie	Murrumbidgee	SGOV
Jerilderie Uniting Church	21 Jerilderie Street	Jerilderie	Murrumbidgee	LGOV
Monash Park Grandstand	Nowranie Street	Jerilderie	Murrumbidgee	LGOV
Ned Kelly Post Office & Surrounds	Powell Street	Jerilderie	Murrumbidgee	GAZ
Old Coree Homestead and Farm Buildings	1850 Conargo Road	Jerilderie	Murrumbidgee	LGOV
Old Warrangesda Mission	Kidman Way	Darlington Point	Murrumbidgee	LGOV
Printery	39-41 Jerilderie Street	Jerilderie	Murrumbidgee	LGOV
Roman Catholic Manse	19 Kennedy Street	Jerilderie	Murrumbidgee	LGOV
Royal Mail Hotel	16-20 Jerilderie Street	Jerilderie	Murrumbidgee	LGOV
Sir John Monash's House	30 Jerilderie Street	Jerilderie	Murrumbidgee	LGOV
Sir John Monash's House		Jerilderie	Murrumbidgee	GAZ
Site of Park Homestead	Argoon Avenue	Jerilderie	Murrumbidgee	LGOV
St Joseph's Convent, Former	30 Coreen Street	Jerilderie	Murrumbidgee	LGOV
St Joseph's Roman Catholic Church	26 Coreen Street	Jerilderie	Murrumbidgee	LGOV
St Stephens Anglican Church	72 Mahonga Street	Jerilderie	Murrumbidgee	LGOV
Survey Tree "BM AN 42", Darlington Point	Kidman Way	Darlington Point	Murrumbidgee	SGOV
The Cape	Cape Road	Jerilderie	Murrumbidgee	LGOV
The Homestead	Sturt Highway	Darlington Point	Murrumbidgee	LGOV
The Willows Museum	11 Powell Street	Jerilderie	Murrumbidgee	LGOV
The Yanko Store	1063 Kidman Way	Jerilderie	Murrumbidgee	LGOV
Toganmain Woolshed Precinct (including woolshed and associated buildings)	Sturt Highway	Darlington Point	Murrumbidgee	LGOV
Tubbo Station	Sturt Highway	Darlington Point	Murrumbidgee	LGOV
Waddie Creek Scarred Trees	Waddi Creek	Darlington Point	Murrumbidgee	LGOV

B.10 Local Environmental Plan (LEP) heritage listed items

Part 1 Heritage items

Suburb	Item name	Address	Property description	Significance	Item no
Darlington Point	Court house group (former)	23 Carrington Street and 6 Punt Road	Lot 3, Section 2, DP 3754; Lot 3, Section 1, DP 3754	Local	I1
Darlington Point	Toganmain Woolshed Precinct (including woolshed and associated buildings)	Sturt Highway	Part of Lot 1, DP 750901	Local	I4
Darlington Point	Tubbo Station	Sturt Highway	Lots 1 and 2, DP 60242; Lots 1–4, DP 117886; Lots 1–5, DP 134802; Lots 4 and 5, DP 239304; Lots 4 and 5, DP 259880; Lots 3 and 6–11, DP 259895; Lots 1 and 2, DP 532602; Lot 3, DP 542213; Lot 1, DP 542215; Lot 1, DP 601813; Lots 2, 4–15, 31–38, 57–60, 70–76, DP 750873; Lots 3, 20–28, 39, 40, 44, 49, 50, 53, 57, 59–62, 68–73, 76–78, 81, 94 and 98, DP 750890; Lots 3, 4, 10–22, 24, 26–31, 35–42, 47, 58, 64–66, 69, 70, 85, 90, 91, 94, 95, 105, 108, 109, 121, DP 750903; Lot 7003, DP 1021211; Lots 1–3, DP 1148975; Lot 2, DP 1148980; Lot 1, DP 1148980; Lots 1 and 2, DP 1151699; Lots 1–6, DP 1153301; Lot 1, DP 1156057; Lots 1 and 2, DP 1159848	Local	I2
Darlington Point	“The Homestead” (formerly Kerarbury Station)	Sturt Highway	Lot 1, DP 417947; Lots 1–4, 10, 20–36, 40, 74 and 92–94, DP 750877; Lots 10–13, 17–25, 116 and 119–122, DP 750884; Lot 7001, DP 1029941; Lots 1 and 2, DP 1086583; Lot 7301, DP 1158503	Local	I3

Part 2 Archaeological sites

Suburb	Item name	Address	Property description	Significance	Item no
Darlington Point	Warrangesda Aboriginal Mission and Station (SHR Item No 01810)	Kidman Way	Lots 5, 137, 147, 275 and 280, DP 750908	State	A4
Darlington Point	Waddi Creek scarred trees	Stock Street		Local	A5



APPENDIX C CONSULTATION

C.1 Consultation and Engagement Strategy



NGH



COMMUNICATIONS AND ENGAGEMENT STRATEGY

Coleambally Battery Energy Storage System

June 2021

Project Number: 20-618



DOCUMENT VERIFICATION

Project Title:	Coleambally Battery Energy Storage System
Project Number:	20-618
Project File Name:	20-618 Coleambally BESS Scoping report

Revision	Date	Prepared by	Reviewed by	Approved by
Draft V1.0	23/06/2021	B Smith	N Smith/Lena Li (Risen)	Ben Smith
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ACRONYMS AND ABBREVIATIONS

AHIMS	Aboriginal Heritage Information Management System
AOBV	Areas of Outstanding Biodiversity Value
ASC	Australian Soil Classification
AWE	Department of Agriculture, Water and the Environment (Cwth)
BAM	Biodiversity Assessment Method
BC Act	<i>Biodiversity Conservation Act 2016 (NSW)</i>
BDAR	Biodiversity Development Assessment Report
BESS	Battery Energy Storage System
Biosecurity Act	<i>Biosecurity Act 2015 (NSW)</i>
CID	Capital Investment Value
Cwth	Commonwealth
DECCW	Department of Environment, Climate Change and Water (NSW) now EES
DoEE	Department of the Environment and Energy (Cwth)
DPIE	Department of Planning, Industry and Environment (NSW)
EEC	Endangered ecological community – as defined under relevant law applying to the Proposal
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cwth)</i>
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
ESD	Ecologically Sustainable Development
FM Act	<i>Fisheries Management Act 1994 (NSW)</i>
GHG	Green House Gases
ha	hectares
Heritage Act	<i>Heritage Act 1977 (NSW)</i>
ISEPP	State Environmental Planning Policy (Infrastructure) 2007 (NSW)
km	kilometres
LEP	Local Environment Plan
LGA	Local Government Area
LUCRA	Land Use Conflict Risk Assessment
MNES	Matters of National environmental significance under the EPBC Act (<i>c.f.</i>)

MW	Megawatt
Noxious Weeds Act	<i>Noxious Weeds Act 1993 (NSW)</i>
NPW Act	<i>National Parks and Wildlife Act 1974 (NSW)</i>
NSW	New South Wales
NV Act	<i>Native Vegetation Act 2003 (NSW)</i>
OEH	Office of Environment and Heritage (NSW), now EES
PCT	Plant Community Type
PHA	Preliminary Hazard Assessment
PMST	Protected Matters Search Tool
REF	Review of Environmental Factors
sp/spp	Species/multiple species
SSD	State Significant Development
TEC	Threatened Ecological Value
TSC Act	<i>Threatened Species Conservation Act 1995 (NSW)</i>

1. ENGAGEMENT APPROACH

1.1. Principles

Best practice engagement involves the community and stakeholders in all decision-making stages of a Proposal. The community plays a role from Proposal conception, through the assessment process and on to Proposal development. Effective community consultation has three important functions:

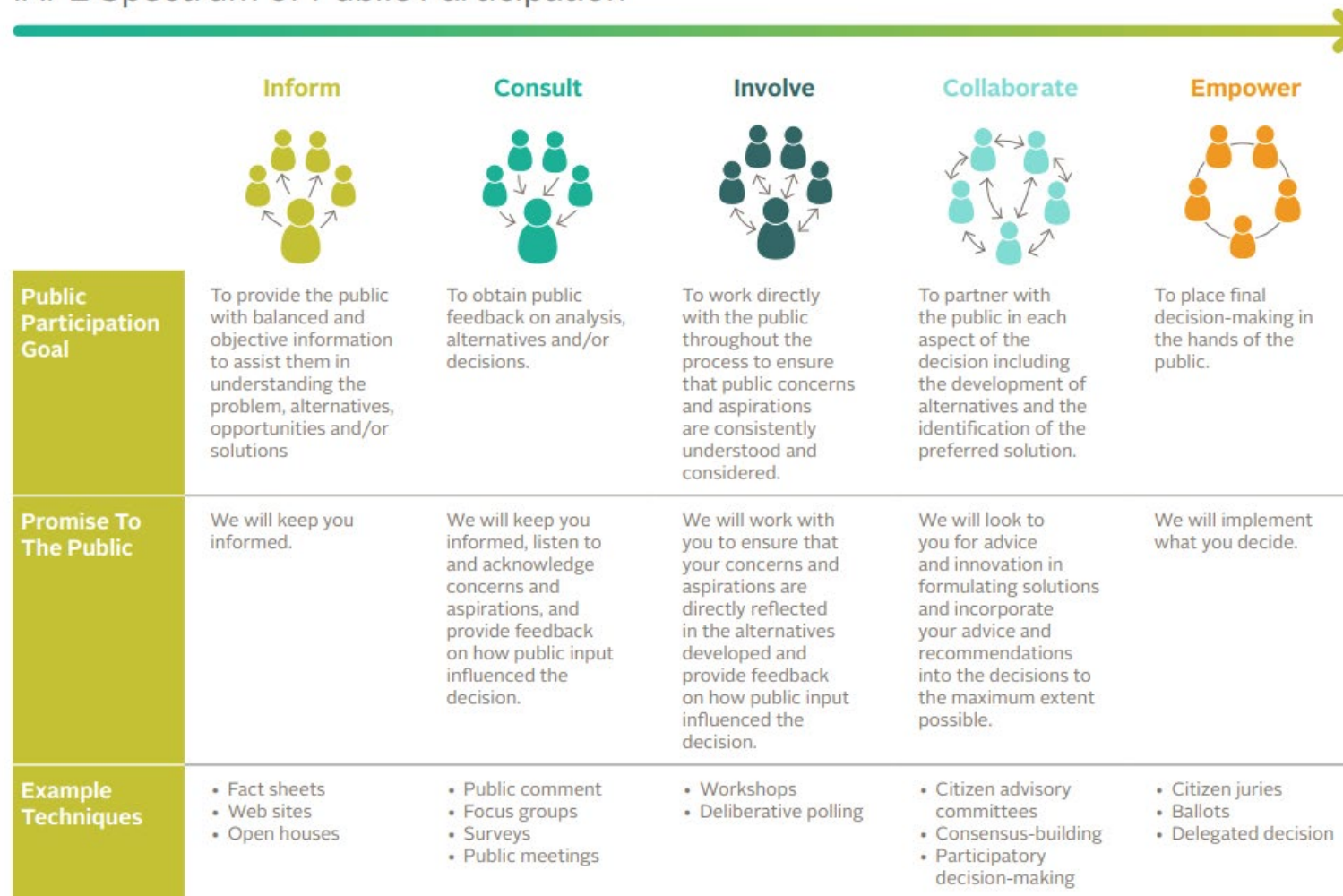
1. Facilitate deeper understanding of potential issues and decisions required for the Proposal.
2. Enhance the quality of decisions made for the Proposal.
3. Allow people to contribute to decisions that affect their lives.

Effective community consultation includes three important community engagement principles:

- Openness – to build trust, understanding and local ownership.
- Inclusiveness - consultation should be diverse and representative, not responding only to the most vocal stakeholders.
- Effective communication – requires tools appropriate to the task to build trust between parties.
- A communication plan – clearly setting out what the Proposal is about to:
 - Inform: one-way communication to deliver information about the Proposal.
 - Consult: two-way communication to seek input into the Proposal.
 - Collaborate and involve and seek participation in elements of the Proposal design and implementation.
- Early rather than late communication - to maximise engagement opportunities.
- Accountability – monitoring and evaluation to ensure consultation aims are being achieved.

Figure 1-1 IAP2 Engagement Spectrum.

IAP2 Spectrum of Public Participation



1.2. Objectives

This Engagement Strategy (ES) has been developed for the Coleambally Battery Energy Storage System the 'Proposal'.

The strategy aims to achieve the following objectives:

1. Facilitate targeted consultation with sensitive receivers and targeted stakeholders.
2. Gather community and stakeholder feedback to inform the scoping report.
3. Identify and analyse any community and stakeholder concerns that need to be considered in the project planning and delivery.
4. Support Risen in maintaining a positive corporate image.
5. Support the renewable energy industry through demonstrating smart and respectful engagement and impact assessment considerations.

1.3. Relevant Guidelines

This CSES has been prepared considering the following guidelines and references:

- *Community and Stakeholder Engagement Guideline 2017*, NSW Department of Industry, Planning and Environment.
- *Community Guide to EIA 2017*. NSW Department of Industry, Planning and Environment.
- *Community Consultative Committee Guideline 2019*, NSW Department of Industry, Planning and Environment.
- *Large-Scale Solar Energy Guideline for State Significant Development 2018*, NSW Department of Industry, Planning and Environment.

2. SITUATIONAL CONTEXT

2.1. The Proposal

The proposal footprint is located around 600 m west of the Kidman Highway, within the Murrumbidgee Local Government Area (LGA).

The Proposal consists of a Battery Energy Storage System (BESS), with approx. 33 sets of Battery system cubicles, 33 sets of Power Conversion system cubicles, power step-up transformer and approximately 1 kilometre (km) of transmission line (132 kilovolt (kV) connecting to TransGrid 33/132/220kV Coleambally substation). The BESS system footprint will occupy an area of approximately 4 hectares (ha) and will generate approx. 100MW capacity with 200 - 400 megawatt hours (MWh).

The subject site includes Lot 100 DP1139115 (~178.5 ha) directly south of Ercildoune Road and north of Kook Road, NSW. Kook Road and Tubbo Channel run between the Subject Land and Coleambally Solar farm. Brett's State Forest occurs direct adjacent to the Subject Land. The TransGrid substation that feeds electricity generated from the solar farm (and proposed BESS) is located northeast of the Subject Land on the northern side of Ercildoune Road.

One farm dam and two registered Aboriginal cultural heritage sites occur within the Subject Land. No mapped watercourses occur on the site.

The development would be State Significant Development (SSD), based on an approximate Capital Investment Value (CIV) of \$105 million. A detailed CIV report would be prepared as part of the development application process, which would confirm the CIV.

The grid connection for the BESS would be connected through underground 132kV transmission line connecting the step-up power transformer on site to the Coleambally substation. Connection route is indicated as in below chart. BESS will run overhead or underground 132kV power cable to the transmission lines first and run north in parallel between 132kV and 220kV lines and then connect to a 132kV bay in the TransGrid Coleambally substation. The BESS system will be charged from 132kV substation and will be discharged into the 132kV substation.

The key elements of the Proposal include the following:

- Subdivision of the development footprint and easement areas from Lot 100 (DP1139115).
- 33 sets of cubicles housing lithium-ion batteries and 33 sets of cubicles housing power conversion systems (PCS). Each PCS includes one or two inverters to convert Direct Current (DC) to Alternating Current (AC) and one transformer to combine and step up the voltage.
- A 33/132kV switching substation to step up MV voltage to transmission line voltage class for interface with TransGrid transmission substation.
- A new 132 underground cable transmission line connecting the BESS switching substation to the TransGrid transmission substation.
- Associated ancillary infrastructure including:
 - Cables connecting infrastructure
 - Internal access tracks
 - Staff amenities
 - Operations and maintenance building
 - Storage and warehouse building
 - Water tanks

- Construction laydown areas
- On-site car parking
- Security fencing.

The proposal layout is illustrated below.

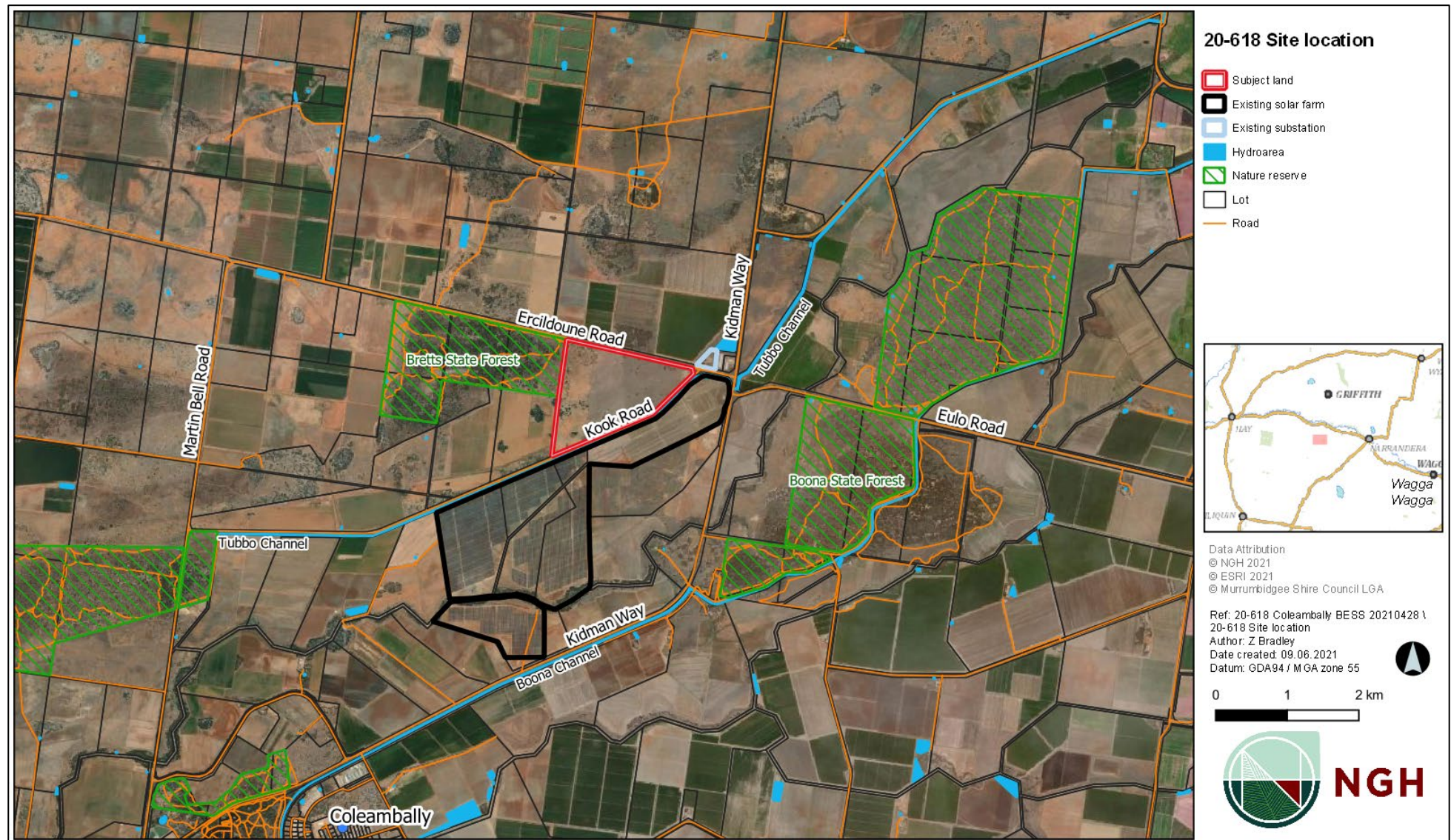


Figure 2-1 Site location

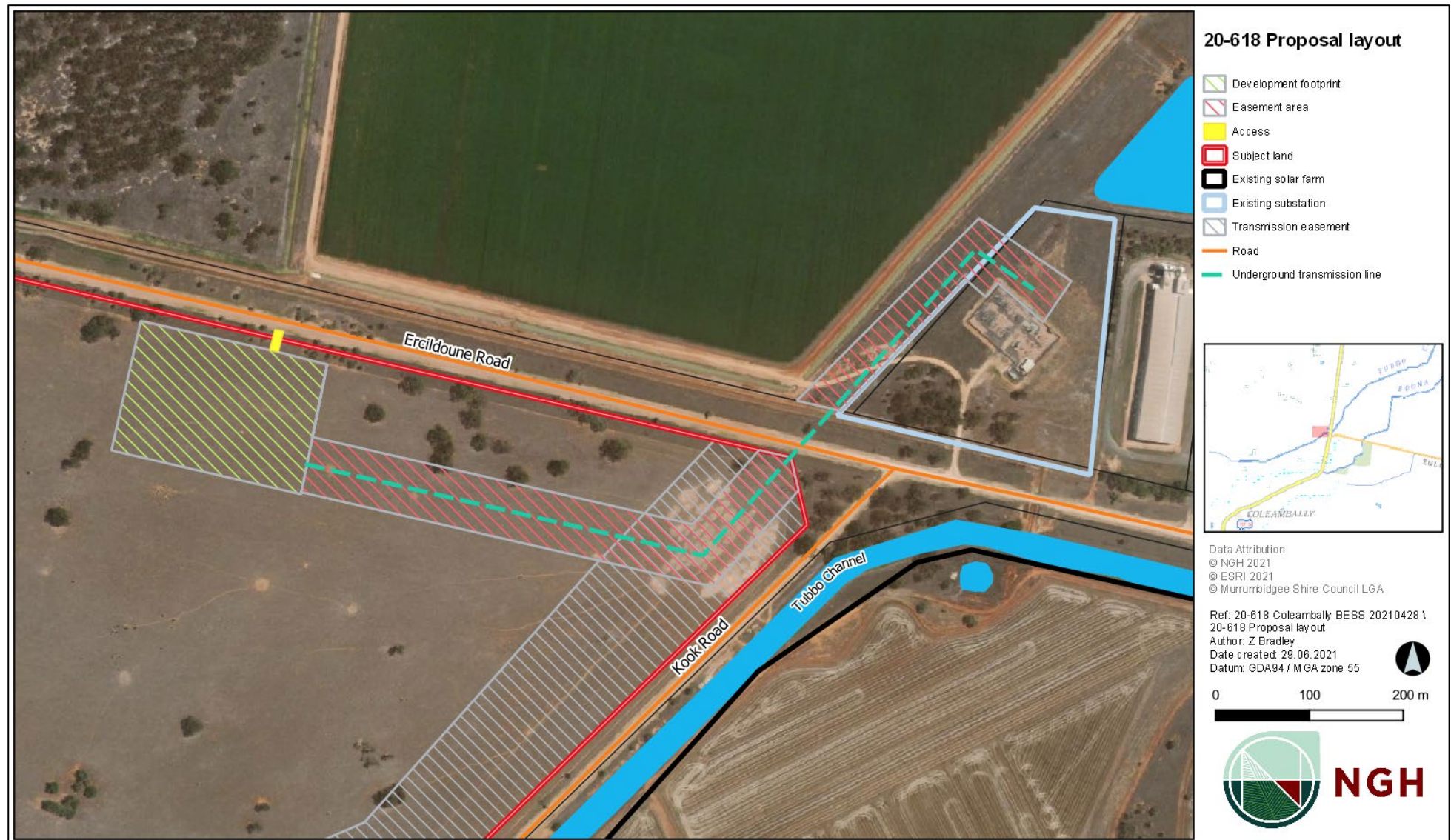


Figure 2-2 Proposal layout

2.2. The Proponent

Risen energy is a renewable energy company delivering projects across a number of countries around the world including China, Germany, Australia, Mexico, India, Japan, and the United States of America.

Risen was founded in 1986 and established its presence in the Australian market in 2008 supplying solar PV panels and energy storage systems to the residential market, commercial market and utility-scale market.

Risen operates in Australia through office in Brisbane and Melbourne and on site operating in Merredin Solar Farm in Western Australia and Yarranlea Solar Farm in Queensland. Risen is the third largest global solar module manufacturer, developing approximately 8,600 MW/year.

Risen is currently progressing with several large to small scale solar farms and battery storage facilities within New South Wales. Risen has established solar farms at multiple locations in New South Wales and across Australia. Risen has invested, built and is operating cutting-edge utility-scale solar farm projects across the country, including 132MW Merredin Solar Farm in Western Australia and 134MW Yarranlea Solar Farm in Queensland.

These large-scale solar farm projects are each capable of generating enough energy to supply approximately 32,000 Australian homes. The Yarranlea Solar Farm occupies approximately 250 hectares of land containing 360,000 PV panels and during construction created in excess of 200 jobs locally. The Merredin Solar Farm occupying 460 hectares of former farming and grazing country also created similar number of local jobs and generates enough to power 42,000 Western Australian homes.

It is one of the pioneers in the solar industry and has committed to this industry as a R&D expert, an integrated manufacturer from wafers to modules, a manufacturer of off-grid systems, an investor, a developer and solution provider for large commercial and utility-scale projects.

After years of efforts, it has reached a module production capacity of 14GW. Risen continues to keep a stable pace with an average debt ratio at around 60% from 2011 to 2020. It also commenced investments in utility-scale solar in 2018 and its Australian subsidiary is growing rapidly.

Risen will continue to develop and invest in renewable energy projects in Australia with a target of 2GW in next 3 years.

2.3. Subject Land

The Development Site is located within Lot 100 DP1139115 directly south of Ercildoune Road and north of Kook Road, NSW. Kook Road and Tubbo Channel run between the site and Coleambally Solar Farm. The TransGrid substation, which feeds electricity generated from the solar farm (and proposed BESS), is located northeast of the site on the northern side of Ercildoune Road. The site is located approximately 8.3 km northeast of the Coleambally township and approximately 140 km west-northwest of Wagga Wagga. The site is illustrated in Figure 2-1.

No mapped watercourses occur within the site. One farm dam and two registered Aboriginal cultural heritage sites are located within the site. Tubbo Channel runs parallel to the south and eastern boundaries of the site and is a diversion channel off Main Canal – the primary irrigation canal for the area.

The site is situated within the Murrumbidgee Shire Council Local Government Area (LGA) and is zoned as RU1 - Primary Production, under the Murrumbidgee Shire Council Local Environmental Plan 2013 (LEP 2013). Land use of the Development Site and surrounding areas is predominantly agricultural, including irrigated cropping (rice, wheat and cotton) and light grazing. The site does not appear to have been subject to irrigation from available aerial photography.

Access to the Development Site would be from the Kidman Highway and then either Ercildoune Road or Kook Road. Paddock trees and native vegetation are located across the site. Bretts State Forest is adjacent the site to the west, Boona State Forest is located ~1.5 km to the east. Topography of the site includes flat alluvial plains with low relief and slope. The site lies at an elevation range of 120 – 124 m above sea level.

2.3.1. Sensitive Receivers

There are no sensitive receivers within 1 km of the subject site. However, there are three located within 2 km. The closest urban receivers are located 7 km southwest in the town of Coleambally. The three receivers within 2 km are residences located on rural properties that have their view partially or entirely shielded from the site by vegetation, landform or the nearby Solar Farm infrastructure. The proximity of sensitive receivers can be seen below in Figure 2-1.

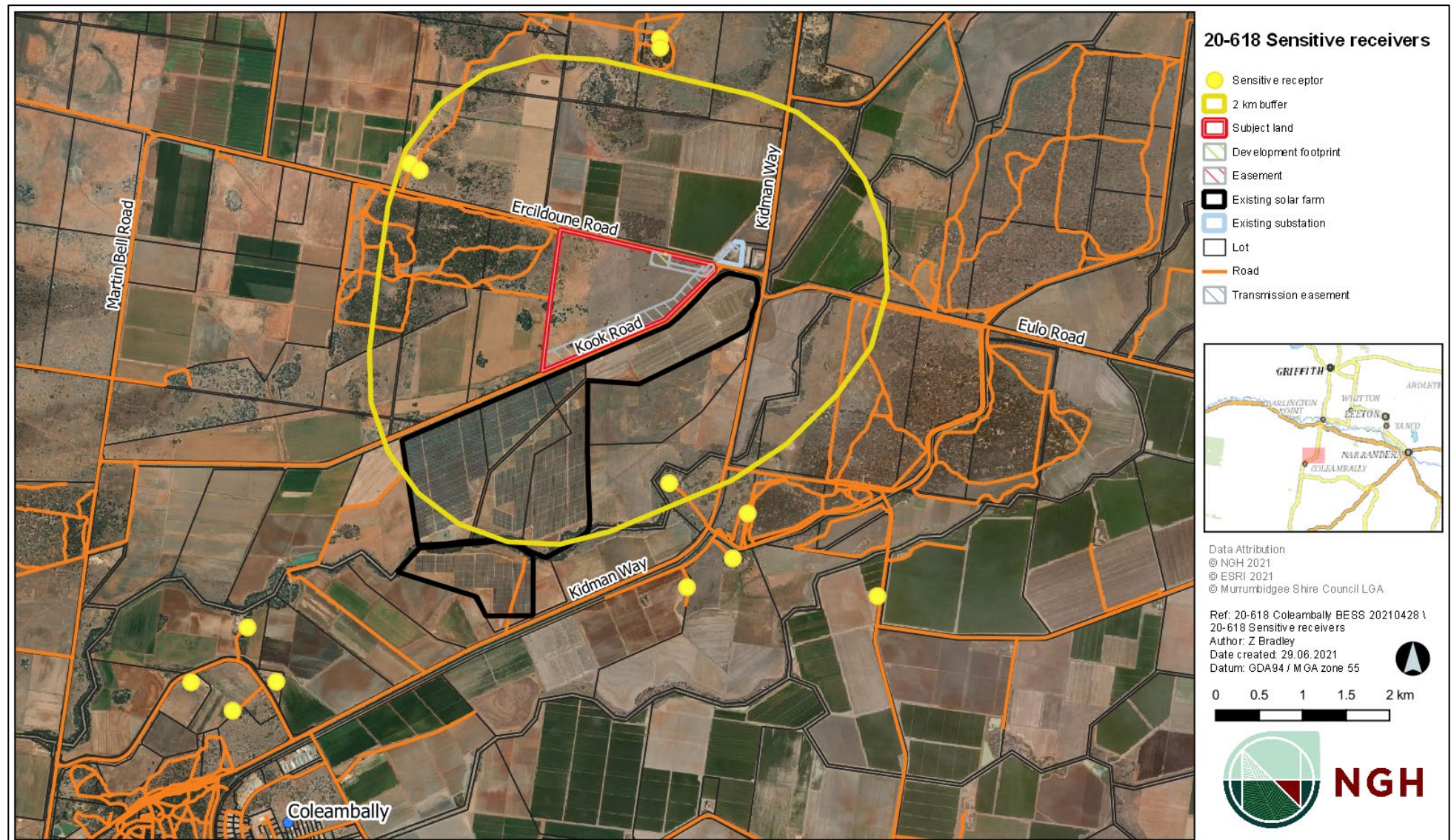


Figure 2-3 Sensitive receivers

3. COMMUNITY AND STAKEHOLDER ANALYSIS

3.1. Community analysis

Understanding the makeup and values of a community is essential to finding effective ways to reach the community. It is also important to understand ways the Proposal may impact the community. This may not be limited to the construction and operational stages of the Proposal but may also include the pre-lodgment assessment phase, as the Proposal is being shaped.

3.1.1. Murrumbidgee Council LGA

The Murrumbidgee Council area is located in the Riverina Region of south-western New South Wales, about 640 kilometres west of the Sydney CBD, and 420 kilometres north of the Melbourne CBD. The Murrumbidgee Council area is bounded by Carrathool Shire, Griffith City and Leeton Shire in the north, Narrandera Shire and the Federation Council area in the east, Berrigan Shire in the south, and the Edward River Council area and Hay Shire in the west¹.

The 2020 Estimated Resident Population for Murrumbidgee Council is 3,916, with a population density of 0.01 persons per hectare.

The Murrumbidgee Council area is predominantly rural, with small townships at Coleambally, Darlington Point and Jerilderie. The Council area encompasses a total land area of about 6,900 square kilometres. Rural land is used largely for agriculture, particularly sheep and cattle grazing and rice growing, with some wheat, maize, corn, sorghum, canola, soya bean, tomato and cotton growing.

3.1.2. Coleambally

Coleambally is a small town in the Riverina of New South Wales, Australia, in Murrumbidgee Council. It is one of the newest towns in the state of New South Wales, officially opened in June 1968. The town has an approximate population of 1331.

A planned community with gardens and streets named after local birds, the town was established in 1968 to service the Coleambally Irrigation Area². There is a strong sense of community and pride in Coleambally. High levels of volunteerism make the biennial Taste Coleambally and Riverina Vintage Machinery Rally stand-out events for visitors and locals. Sporting and community events engage all age groups and interests throughout the year.

Its main industry has been rice growing, with a major rice mill located one kilometre north of the town. However, the rice mill has been closed and converted to a ruminant feed mill in 2019. Other crops are also grown, such as wheat, cotton, maize, sorghum and soya beans.

A demographic snapshot of Coleambally is included below.

¹ Regional Economic Profile, 2021, accessed at <https://profile.id.com.au/ramjo/about?WebID=190>

² Sourced from Griffith Council website at https://www.griffith.nsw.gov.au/cp_themes/visit/listing-detail.asp?org=CSD-BMP-18-03-64

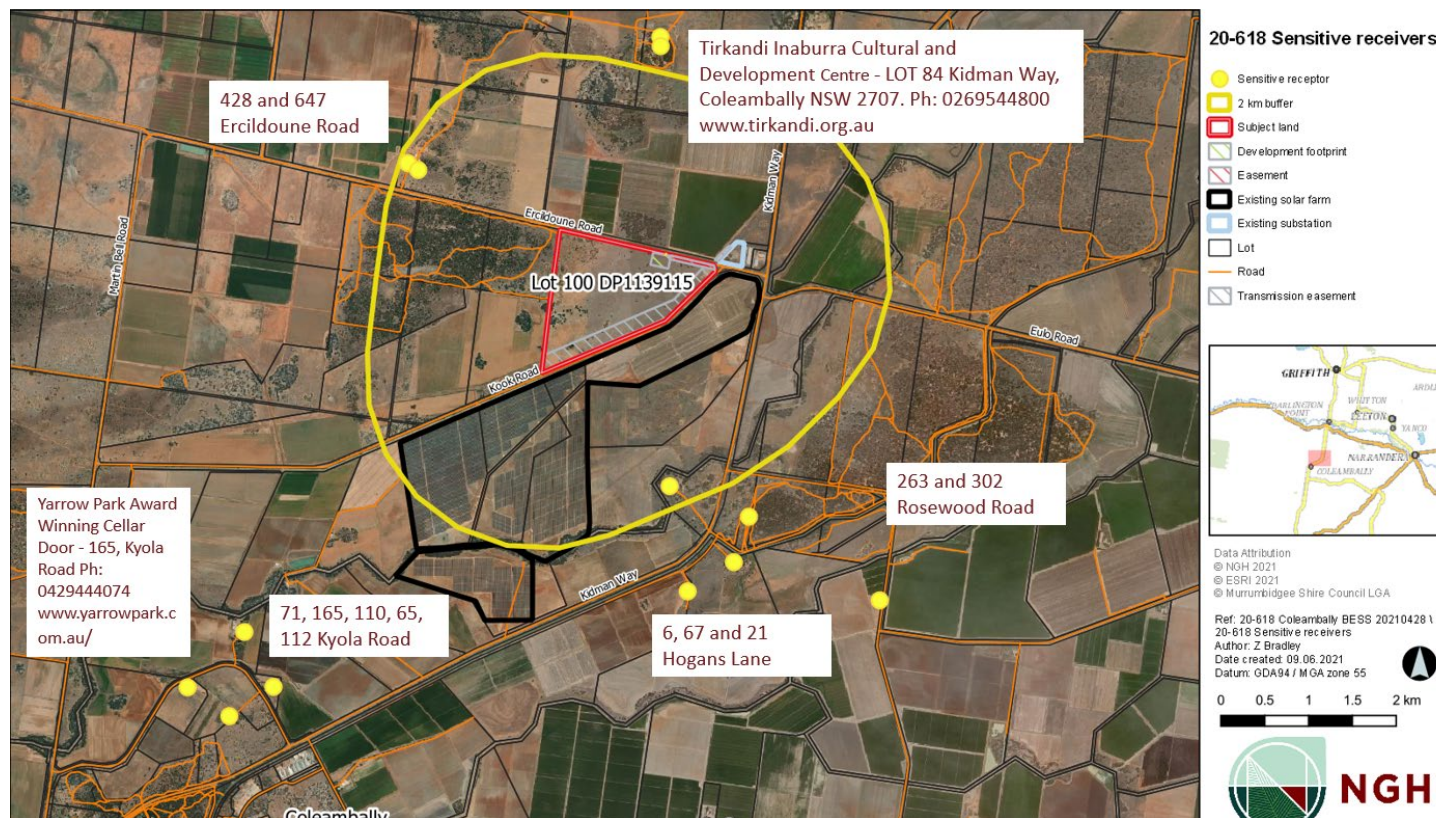
	People	1,331
	Male	52.6%
	Female	47.4%
	Median age	39
	Families	319
	Average children per family	
	for families with children	2.1
	for all families	0.8
	All private dwellings	659
	Average people per household	2.5
	Median weekly household income	\$1,323
	Median monthly mortgage repayments	\$900
	Median weekly rent	\$140
	Average motor vehicles per dwelling	2.2

Figure 3-1 Coleambally Community Profile

3.2. Stakeholder analysis

It is important to identify key stakeholder groups and relevant characteristics of each of the groups so that engagement strategies can be tailored to best suit them. Different levels of engagement will be appropriate for different groups, depending on the potential interest or impacts on the groups.

Given the targeted nature of this engagement, the focus is on understanding, documenting, and assessing the scale and potential impact of community concerns for this development and preparing engagement tactics for the development application, construction and operational phases. The initial focus will be on the sensitive receivers, including 3 within a 2km radius and 10 others nearby, as shown below.



See below a broader outline of stakeholders and their interests and relevant engagement tactics.

Table 3-1 Stakeholders, their interests and recommended engagement approach

Stakeholder group	Targeted stakeholders	Interests	Engagement approach
Adjacent and near neighbours (including sensitive receivers as shown in Figure 2-3).	1 commercial premise - Yarrow Park Award Winning Cellar Door - 165, Kyola Road (a olive oil business cellar door) 1 cultural development centre - Tirkandi Inaburra Cultural and Development Centre - LOT 84 Kidman Way, Coleambally NSW 2707 11 residential dwellings on rural properties at these Coleambally addresses: 71, 110, 65 and 112 Kyola Road 6,67 and 21 Hogans Lane 263 and 302 Rosewood Road 428 and 647 Ercildoune Road	- Property impacts - Visual impacts - Access changes - Environmental changes - Commercial agreements - Community benefits - Governance and ownership of the developing entity - Impacts on agricultural outputs	Inform, consult, involve, collaborate Initial consultation (for the scoping phase) with this group will involve phone calls, distributing letters/door knocks and direct face to face meeting at their properties. 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	Engagement approach
Broader Community and region	• Coleambally township residents, businesses and organisations	• Visual impacts • Transport access impacts or changes • Environmental changes • Community benefits • Governance and ownership of the developing entity • Regional economic development	Inform, consult This group should be engaged through broader communications during the development application phase through a community open house meeting, a public notice and communications through council. Ideally, communications to this group would make use of a project web page/site.
Representative or Special interest groups	• Coleambally Irrigation Cooperative • Local Aboriginal Land Council	• Property impacts • Visual impacts • Access changes • Environmental changes • Commercial agreements • Community benefits • Governance and ownership of the developing entity • Impacts on agricultural outputs	Inform, consult This group should initially be engaged directly through the scoping phase and then indirectly through broader communications during the development application phase through a community open house meeting, a follow up meeting and emailing a project update. Ideally, communications to this group would make use of a project web page/site and a direct contact.

Stakeholder group	Targeted stakeholders	Interests	Engagement approach
Government Agencies/Utility owners	- DPIE and other agencies through the SEARs process - Murrumbidgee Council - TransGrid	- Impacts on local infrastructure - Assessment process - Consideration of impacts - Consideration and mitigation of concerns - Consultation process - Application of standards and frameworks	Inform, consult, involve Council and TransGrid have been engaged in the Scoping phase and this will continue in other phases. Consultation pertaining to Aboriginal Cultural Heritage Assessment will commence when the scoping report is submitted.
Small businesses	- Coleambally township businesses and those with a broader interest in the region - Construction companies that may contribute to the battery facility construction and installation	- Property impacts - Visual impacts - Access changes - Environmental changes - Commercial agreements - Community benefits - Governance and ownership of the developing entity - Impacts on agricultural outputs	Inform, consult Outside of the sensitive receivers identified, this group should be engaged through broader communications during the development application phase through a community open house meeting, a public notice (print and radio) and communications through council. Opportunities to support the project construction should be communicated during the development application phase to connect the project with local capability. Ideally, communications to this group would make use of a project web page/site.

4. ENGAGEMENT ACTION PLAN

To date, consultation for the project has been undertaken with NSW DPIE and Murrumbidgee Council. Further stakeholders including surrounding landowners, the Local Aboriginal Land Council (LALC), politicians, and local radio will be consulted during the EIS stage of the proposal. A summary of the key consultation and activities carried out to date is provided in Table 5-1.

Table 4-1 Consultation schedule

Stakeholder	Date	Consultation activity	Purpose
NSW Department of Planning Industry and Environment (DPIE)	25 May 2021	Project scoping meeting	To introduce the project, identify constraints and seek DPIE advice for preparation of Scoping Report
Murrumbidgee Council	11 June 2021	Early consultation	To introduce the project and discuss the proposed subdivision
	2 June 2021	Lot subdivision	To ensure council has no issues and would support the subdivision to facilitate the development
Risen Energy	23 June 2021	Prepare project information, including letters, project overview, strategy and action plan	To guide engagement and provide stakeholders with an understanding of the project.
Sensitive receivers	23 June 2021	Send letters to 11 properties and call the two businesses within this area.	To notify them of the assessment and flag the opportunity to meet face to face on 28 June.

Stakeholder	Date	Consultation activity	Purpose
		Send a letter to the Irrigators association.	
Sensitive receivers	28 June 2021	Visit the 11 properties, businesses and Murrumbidgee Council	To discuss the project and capture any concerns for inclusion in the scoping report. Develop stakeholder relationships to support subsequent stages.
DPIE/ Risen Energy	29 June	Summarise feedback in Scoping report	Summarise community sentiment and demonstrate a robust ongoing process for engagement and consideration of social impacts and opportunities.
All stakeholders	After scoping report submission	Once the scoping report is submitted and the SEARs are issued, broader engagement can occur as	To achieve broader understanding of the proposal, capture potential issues and work through mitigations. This is also an opportunity to secure a positive long term relationship with the local community and regional stakeholders.

Further community engagement activities would continue through the progression of the Proposal into the development application, construction, and operational phases. This will be further defined after the scoping report is submitted and SEARs issued.

5. MESSAGES AND TOOLS

5.1. Project key messages

The following messages are proposed to be used to discuss the project overall:

5.1.1. The proposal

- Risen Energy is currently assessing the potential for a Battery Energy Storage System (BESS) at a site near Coleambally.
- The proposed BESS system footprint would occupy an area of approximately 4 hectares (ha) and will generate approximately 100MW capacity, with 200 - 400 megawatt hours (MWh).
- The development would have an approximate value of \$105 million and would support around 200 jobs during its 12-month construction period.
- The Development Site was chosen due to the proximity to the existing substation and solar farm, appropriate zoning, minimal existing vegetation, lack of mapped heritage and adequate land size.
- The site is located away from residential areas and located near to a sub-station and the Coleambally Solar Farm.
- The size of the land also allows for appropriate setbacks that would mitigate impacts on nearby receivers.
- Favourable site conditions including minimal erosion and flood risk, low relief and level slope, lack of nearby receivers, lack of heritage items and low biodiversity in the area suit the Proposal.
- The existing transmission lines traversing the site and nearby substation allow for reduced disturbance and expense to connect the BESS to electrical infrastructure.

5.1.2. Project benefits

- The Proposal improves the stability and reliability to the electricity network by storing energy during periods of low demand, including those from more intermittent renewable sources (residential solar and grid scale solar/wind projects), and dispatching energy during periods of peak demand and emergency events.
- Direct employment opportunities during the construction period (expecting approximately 200 construction jobs during peak construction period) and up to one ongoing job during the 30-year operational life.
- Once operational, it is anticipated that there would be one permanent worker for its operation as the site would be largely remotely operated. Economic benefits to the surrounding communities would be less, however the local labour force may be used for ongoing monitoring and maintenance.
- Battery energy storage can provide reliable and efficient energy by shifting the supply of electricity from times of high supply and low demand to times of low supply and high demand.

- This project will help Australia to reduce its emissions, improve national resilience in energy supply and support affordable energy for Australians.
- The Proposal would provide an opportunity for optimising the management and security of energy for use in peak periods, particularly in a time of change when Australia begins to experience shortages due to population growth and coal fired power station closures.
- Further, energy from solar, wind and low carbon alternatives can be generated during their optimal generation times (i.e., generation of solar electricity during the day) and stored, thus minimising reliance on carbon and reducing greenhouse gas emissions (GHG) and the onset of climate change.
- 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 (DIS, 2015). Nine coal-fired power stations have closed since 2011-2012, representing around 3,600 MW of installed capacity (Commonwealth of Australia, 2016). The reduction in energy supply from coal-fired power stations requires the development of reliable and sustainable energy supply.
- The BESS aims to improve reliability and security of the electricity network by storing energy during periods of low demand and dispatching energy during periods of peak demand and emergency events. The Proposal would be a key piece of infrastructure in supporting Energy Storage Development in regional Australia.
- The Proposal supports Commonwealth climate change commitments including the United Nations Paris Climate Change Agreements.
- The Proposal is also consistent with the current goals and targets for renewable energy generation in NSW. These include:
 - Goal 22 of the NSW 2021: A plan to Make NSW Number One (NSW Government, 2011):
 - Contribute to the national renewable energy target [i.e., 20% renewable energy supply] by promoting energy security through a more diverse energy mix, reducing coal dependence, increasing energy efficiency and moving to lower emission energy sources.
 - Contributing to achieving the NSW target of zero net emissions by 2050.

5.1.3. Messaging around issues

The following content would be used as FAQs in the project information:

Table 5-1 Anticipated questions and proposed answers

Question	Response
Who approves the project?	As a state significant project, the proposal will be reviewed by the NSW Department of Planning, Infrastructure and Environment (DPIE).

Question	Response
Will this have a big visual impact?	Our analysis indicates that only three properties can see the proposed development area and their views to the BESS would be mitigated by existing natural vegetation ultimately be covered by natural vegetation. The BESS cubicles are unlikely to emit glare or reflection. Screening vegetation would be investigated during the environmental impact assessment. Energy generation and distribution infrastructure already exists in the areas and the Proposal would be located in close proximity to this established infrastructure.
Is it safe? Does it emit any radiation? Is there any risk of leaching in to the local environment?	It is safe and will not emit radiation. The battery is designed to prevent liquid leakage and therefore will not cause any hazardous chemical leakage to the surrounding environment.
Do batteries increase fire risk?	To mitigate potential fire risk from batteries the following are applied: (1) substation and BESS have protection to avoid overcurrent or any electric faults to cause fire. (2) plant facility have Battery Management System or fire panel to detect smoke, fire and action alarms. (3) water tanks, water pipeline system, fire extinguish tools will be installed on site (4) Some camera CCTV systems will have heating detection functionality.
Is the site affected by flooding?	Assessments completed to date indicate that the site is not flood prone. In the unlikely event of storm water flooding, where water may pool from heavy rainfall events, BESS infrastructure is expected to remain stable.
How will power supply be affected in the local area – will there be outages during construction?	There will be no outages expected during the construction phase. Once the battery system is built and operational, it will help to increase the grid stability.
How will construction traffic and road impacts be managed?	Access to the Subject Land would be from the Kidman Highway and then either Ercildoune Road or Kook Road, with Ercildoune Road the main access road. Due to the operational substation, access to the Subject Land would be from the Kidman Highway and then either Ercildoune Road or Kook Road. During the anticipated 12-month construction period, construction vehicles would range from light vehicles to 26 m B-Doubles. Light

Question	Response
	vehicles would arrive during AM/PM peaks with heavy vehicle deliveries to be spaced out during the day. Operational traffic is thought to be negligible with a maximum of two one-way vehicle trips per day, and an average of two to four one-way trips per week. This is based on one ongoing operational job.
Who is the Risen Energy and what are their interests in Australia?	Risen energy is a renewable energy company delivering projects across a number of countries around the world including China, Germany, Australia, Mexico, India, Japan, and the United States of America. The company was founded in 1986 and established its presence in the Australian market in 2008, supplying solar PV panels and energy storage systems to the residential market, commercial market and utility-scale market. Risen is the third largest global solar module manufacturer, developing approximately 8,600 MW/year. Risen operates in Australia through office in Brisbane and Melbourne and on site operating in Merredin Solar Farm in Western Australia and Yarranlea Solar Farm in Queensland. Risen also has several Australian renewable energy projects under planning. Risen is proud of its contribution to renewable energy in Australia and will continue to develop and invest in renewable energy projects in Australia with a target of 2GW in next 3 years.
Why is this land not being used for agriculture?	The Development Site was chosen due to the proximity to the existing substation and solar farm, appropriate zoning, minimal existing vegetation, lack of mapped heritage and adequate land size. It also includes setbacks that can minimise the impact on nearby properties and the existing transmission lines traversing the site and nearby substation allow for reduced disturbance and expense to connect the BESS to electrical infrastructure.
Will this battery technology still be relevant once it is constructed?	Yes. The BESS can be adapted to utilise updates in technology closer to the construction and operation period. Given Risen are a global leader in battery research and development, they are well placed to make these adaptations.
What is happening with the residual land?	It will continue to be used for agricultural purposes.

5.2. Tools and channels

The following communication tools and channels are recommended for this project.

Table 5-2 Proposed engagement tools and channels

Phase	Tools and channels
Scoping	Sending letters, door knocking and phone calls with sensitive receivers (including the Cultural Development Centre) Targeted meetings with Council, DPIE and TransGrid
Development application	Broader communications including: • Public notice on radio and in the local newspaper • Open house information sessions • Online survey • Distribute project newsletter • Project website activation and updates • Stakeholder emails (targeted) • Meetings with special interest groups, including the Irrigators association and the local Aboriginal Development Corporation • Ongoing Council and DPIE meetings (including other agencies as outlined by the SEARs) • Ongoing meetings with nearby stakeholders
Construction	Similar activities to the previous phase – to be confirmed as the project progresses.

6. EVALUATION AND NEXT STEPS

The strategy will be evaluated once the summary is completed in the context of the primary objectives.

6.1. Next steps

The action plan will need to be confirmed and meetings organised for NGH and Risen staff attendance.

The supporting materials will need to be reviewed and approved to support the stakeholder conversations.

C.2 Murrumbidgee Council

From: [Kelly Tyson](#)
To: [Nicola Smith](#)
Subject: RE: 20-618 - Coleambally BESS letter for subdivision and formal project introduction
Date: Wednesday, 2 June 2021 1:44:41 PM
Attachments: [image001.png](#)
[Facebook_c8ac0e7a-e69e-4703-aef9-fcc9352d6d00.png](#)
[Instagram_8dbbfb9-b525-4080-99be-03b6d89663d8.png](#)

Hi Nicola

Would you have a better plan showing the proposed subdivision boundaries please than that included in the attached document? What are the Options stated on that plan?

Is there an intention to consolidate the resulting smaller lot back into the parent allotment once battery lifetime expires?

Will there be a restriction on title to prohibit the erection of a dwelling on the land?

Council has no issues and would support the subdivision to facilitate the development.

By the way. The shipping containers are buildings and the photos show that there is room for person to access the building and walk through it.

I'm assuming therefore that a Construction certificate would be required for Class 7b/ 8 building? Have you got a legal opinion on that?

Kelly Tyson
Manager Planning and Environment



Murrumbidgee
COUNCIL

T 1300 MRMBGE (676243) F 02 6954 4420

kellyt@murrumbidgee.nsw.gov.au

PO Box 96 Jerilderie NSW 2716

Mon, Tue & Wed (Coleambally) Thursday (Jerilderie) Friday (Darlington Point)

If your matter is urgent please forward to mail@murrumbidgee.nsw.gov.au

PLEASE NOTE: Unless stated otherwise, this email, together with any attachments, is intended for the named recipient(s) only and may contain privileged and confidential information. If received in error, you are asked to inform the sender as quickly as possible and delete this email and any copies of this from your computer system. If you are not the intended recipient of this email, you must not copy, distribute or take any action that relies on it and any form of disclosure, modification, distribution and/or publication of this email is prohibited. We have taken precautions to minimise the risk of transmitting software viruses, but you are advised to carry out your own virus checks on any part of this message including any attachments. We cannot accept liability for any loss or damage caused by software viruses.

From: Nicola Smith <nicola.s@nghconsulting.com.au>

Sent: Wednesday, 2 June 2021 1:28 PM

To: Kelly Tyson <kellyt@murrumbidgee.nsw.gov.au>; Mail <mail@murrumbidgee.nsw.gov.au>

Cc: Lizzie Olesen-Jensen <lizzie.oj@nghconsulting.com.au>

Subject: 20-618 - Coleambally BESS letter for subdivision and formal project introduction

Dear Kelly,

Please find attached a letter outlining a request for the subdivision of land for a State Significant Development project on Lot 100 DP1139115. As briefly discussed with you earlier in the year, Risen Energy are preparing a scoping report for a Battery Energy Storage System in Coleambally.

We would appreciate a meeting with Council to formally introduce the project. Could you please supply some times suitable to you for a discussion.

Best regards,
Nicola

NICOLA SMITH
SENIOR ENVIRONMENTAL CONSULTANT
M. Phil (Phys Geog), B. Sc.

Please note I do not work Mondays
T. 02 6923 1537 M. 0410 411 660
E. nicola.s@nghconsulting.com.au
35 Kincaid Street
(PO Box 5464) Wagga Wagga NSW 2650



NSW · ACT · QLD · VIC
WWW.NGHCONSULTING.COM.AU



1/06/2021

Mr John Scarce, General Manager
Murrumbidgee Shire Council
PO BOX 96
Jerilderie NSW 2716



Attention: Kelly Tyson – Manager, Planning and Environment

Email: kellyt@murrumbidgee.nsw.gov.au
mail@murrumbidgee.nsw.gov.au

Dear Mr Scarce,

Re: Proposed Subdivision for State Significant Battery Energy Storage System (BESS) at Coleambally (20-618)

We are writing in relation to a subdivision of land necessary to facilitate the operation of the proposed Coleambally Battery Energy Storage System (BESS), being declared a State Significant Development (SSD). The proposed development would be assessed and approved by the Department of Planning, Infrastructure and Environment (DPIE) given its status. This matter was briefly discussed with Council's Manager of Planning and Environment, Kelly Tyson in early April of this year.

NGH act on behalf of the proponent, RISEN ENERGY, in the preparation the application that involves the subdivision of land to satisfy tenure arrangements. The proposed subdivision would result in the creation of allotments being less than the prescribed minimum lot size on the Lot Size Map relating the subject land.

Given the subdivision of land would result in the creation of lots being under the prescribed minimum lot size, DPIE has directed NGH consult with the Murrumbidgee Shire Council to request a formal response be provided indicating Council would have no objection to the subdivision component of the proposal. Council's concurrence would be lodged together with the Environmental Impact Statement (EIS) and supporting reports for the consideration of the DPIE.

Therefore, we seek Council's support in this matter and respectfully request consideration be given to the proposed subdivision component based on the information provided in the following attachment. We kindly ask that Council provide a formal response at its earliest convenience.

NGH and RISEN ENERGY welcome the opportunity to meet with Council via teleconference to discuss the proposed subdivision.

Should you have any questions please do not hesitate to contact me on 0412 403 499 or alternatively email me at lizzie.oj@nghconsulting.com.au.

Yours sincerely,



WAGGA WAGGA

35 Kincaid Street (PO Box 5464) Wagga Wagga NSW 2650

T. (02) 6971 9696 E. ngh@nghconsulting.com.au W. www.nghconsulting.com.au

NSW • ACT • QLD • VIC

ABN 31124 444 622 ACN 124 444 622



Lizzie Olesen-Jensen
Principal Town Planner
0412 403 499

1. Attachment

1.1.1 Subject Land and Location

The proposed Coleambally BESS would occupy approximately 4 hectares of land and includes Lot 100 DP1139115, as indicated in Figure 1-1 below.

The proposed development would be located approximately 9 kilometres north east of Coleambally and approximately 20 kilometres southwest of Darlington Point. The proposal area is bound by Ercildoune Road and Kook Road.

The subject land is currently agricultural land, comprising one large paddock which is flat and low lying, mostly cleared of native vegetation and which has been historically used for grazing. An irrigation line, Tubbo Channel, runs along the south and south eastern perimeter of the Subject Land.

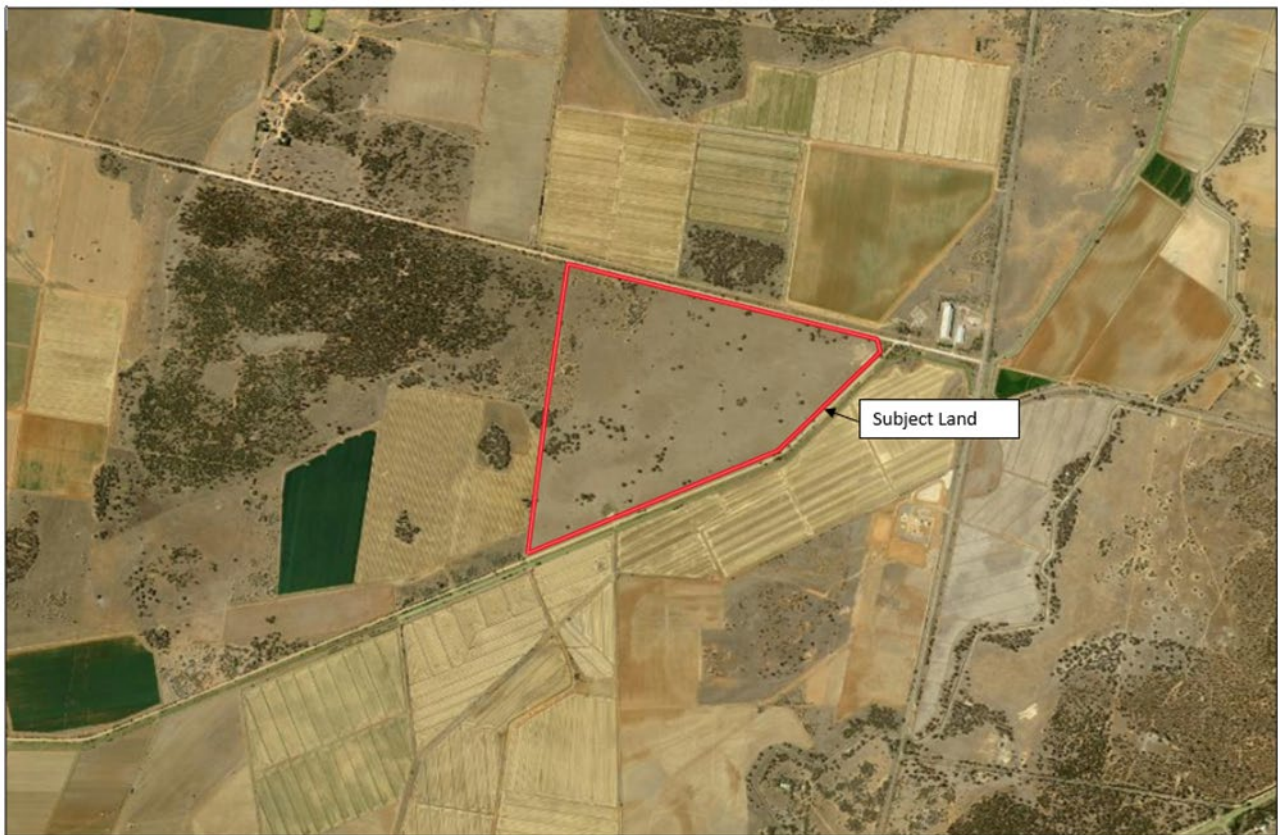


Figure 1-1 Subject Land (Source: Base Image – SIX Maps, 2021)

The proposed subdivision involves Lot 100 DP1139115, with an area of 178.5 hectares, as follows:

- **Proposed Lot A** would result in a lot size of approximately 174.5 hectares. The proposed lot size is smaller than the prescribed minimum lot size of 200 hectares. Proposed Lot A would be retained by the landholder for agricultural purposes.
- **Proposed Lot B** would comprise approximately 4 hectares and would be smaller than the prescribed minimum lot size of 200 hectares. Proposed Lot B would be dedicated to the proposed BESS and associated switching substation. Proposed Lot B would provide a supply of electricity from the BESS to Coleambally Substation through the creation of a proposed easement for transmission lines.

1.1.2 Overview of Proposal

As indicated previously, the proposed BESS development includes the subdivision of land to satisfy lawful operational requirements, along with facilitating an ancillary connection with TransGrid substation requirements. A concept plan of the BESS layout is included in Attachment 2 and a brochure depicting operational BESS facilities is included in Attachment 3. The proposed subdivision would enable agricultural activities to continue on residue land (Lot A).

A map of the proposed subdivision is provided in Figure 1-2 below.

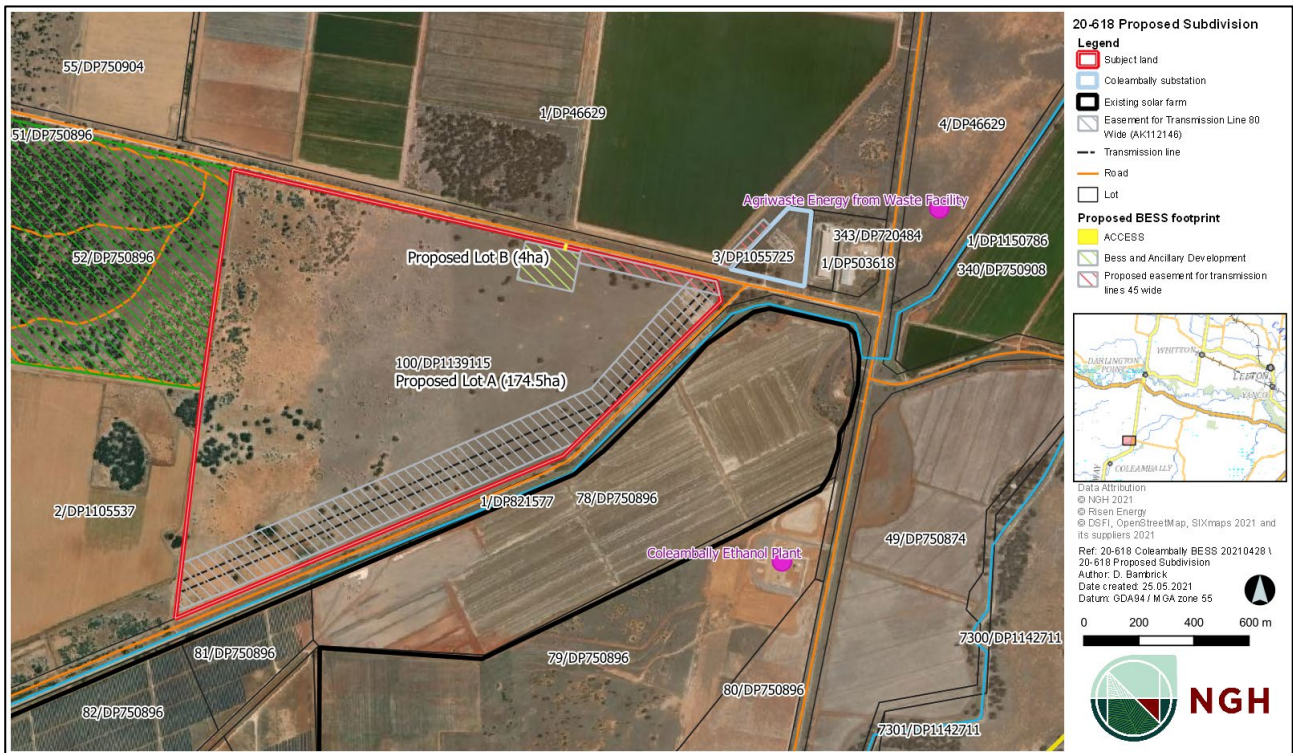


Figure 1-2 Proposed lot configuration

The following is proposed:

Subdivision of Lot 100 DP1139115

Lot 100 DP 1139115 comprises an area of 178.5 hectares, which is below the 200 hectare prescribed minimum lot size under the Murrumbidgee Local Environmental Plan 2013 (MLEP).

It is proposed to excise an area of approximately 4 hectares (proposed Lot B), being part Lot 100 DP 1139115. This land (proposed Lot B) would be dedicated towards the proposed BESS and associated switching substation, and owned by the BESS operator. The size of this proposed lot is below the prescribed minimum lot size.

Proposed Lot A would comprise the residual land of Lot 100 DP1139115, resulting from the excise of proposed Lot B. Proposed Lot A would comprise approximately 174.5 hectares and would be retained by the current landowner for the purpose of carrying out agricultural activities. The size of this proposed lot would be below the prescribed minimum lot size.

1.1.3 Planning framework

Murrumbidgee Local Environmental Plan 2013

The subject land is zoned RU1 Primary Production under the provisions of the Murrumbidgee LEP, as indicated in Figure 1-3 below.

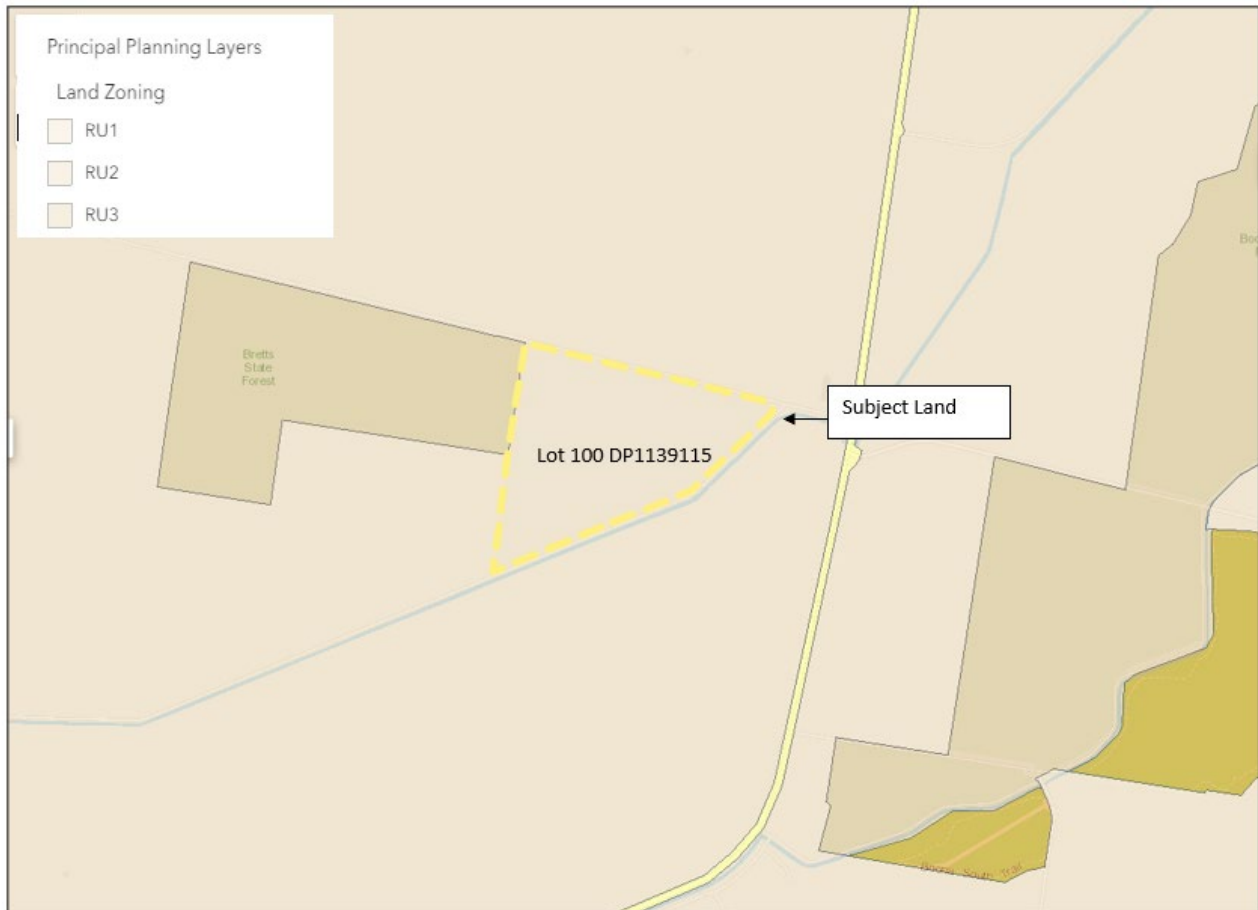


Figure 1-3 Land zoning (Source: NSW Spatial Services, 2021).

The land is subject to a prescribed minimum lot size of 200 hectares according to the Murrumbidgee LEP, as indicated in Figure 1-4 below.

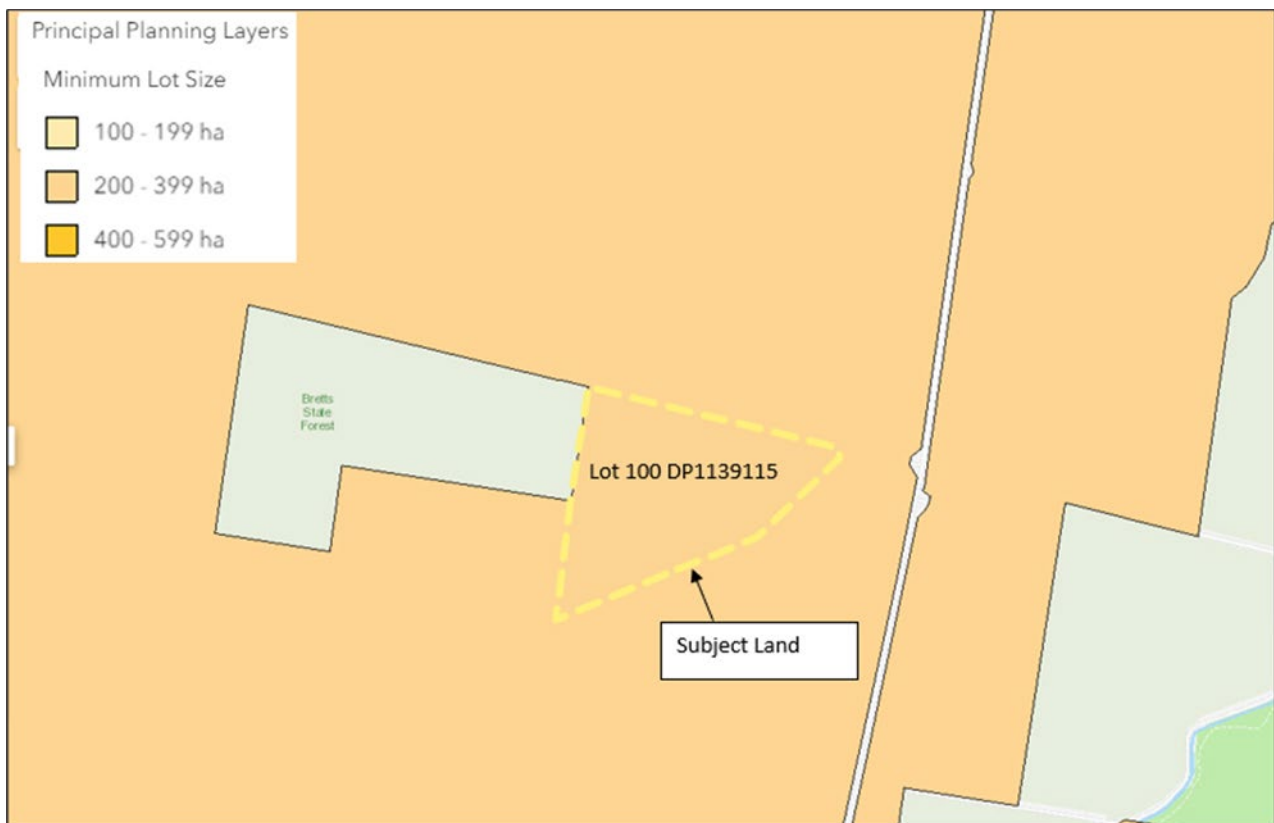


Figure 1-4 Minimum lot size (Source: NSW Spatial Services, 2021).

Pursuant to clause 2.6 of the Murrumbidgee LEP, development consent would be required for the proposed subdivision, as it would not be exempt from consent under the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

As indicated above, the land is subject to a minimum lot size of 200 hectares. The proposed subdivision of Lot 100 DP1139115 into two lots would be inconsistent with the provisions of the Murrumbidgee LEP. The size of any lot resulting from a subdivision is not to be less than the minimum size shown on the Lot Size Map in relation to that land according to clause 4.1(3).

Some flexibility is provided by clause 4.2 of the Murrumbidgee LEP in respect of rural subdivision for the purpose of primary production. However, the proposed subdivision may not be considered to be for the purposes of primary production, given the requirement arises from the proposed development of a BESS on the land.

State Environmental Planning Policy (State and Regional Development) 2011

Despite the provisions of the Murrumbidgee LEP, the provisions of the *Environmental Planning and Assessment Act 1979* provide that the subdivision may be approved by the consent authority, given that the subdivision forms part of a SSD.

According to clause 8(2) of the State Environmental Planning Policy (State and Regional Development) 2011, where a development application comprises development that is only partly SSD, the remainder of the development is also declared to be SSD. Consultation with the DPIE confirms that the proposed subdivision is declared State Significant, given the proposed BESS has been confirmed as SSD.

Furthermore, clause 4.38(3) of the *Environmental Planning and Assessment Act 1979* states “development consent may be granted despite the development being partly prohibited by an environmental planning instrument.” Consultation with the DPIE confirms that this allows the consent authority to approve aspects of a SSD that are prohibited under an environmental planning instrument. The DPIE advises that consent may be granted to a proposed subdivision, as part of SSD, despite prohibitive provisions in an applicable LEP.

Murrumbidgee Local Environmental Plan 2013

General Aims

Under clause 1.2, the particular aims of the Murrumbidgee LEP are:

- (aa) to protect and promote the use and development of land for arts and cultural activity, including music and other performance arts,*
- (a) to protect, enhance and conserve agricultural and horticultural land through the proper management, development and conservation of natural and man-made resources,*
- (b) to encourage a range of housing, employment, recreation and community facilities to meet the needs of existing and future residents of Murrumbidgee,*
- (c) to promote the efficient and equitable provision of public services, infrastructure and amenities,*
- (d) to conserve the environmental heritage of the land to which this Plan applies.*

It is considered that the proposed development is not inconsistent with the aims of the LEP. The proposed subdivision is a necessary component of the BESS proposal and would facilitate this State Significant Development.

The proposal would encourage economic growth and provide a range of opportunities. It would optimise the management and use of energy resources, promote development consistent with the principles of ecologically sustainable development and management of climate change and promote sustainability of natural attributes. It would not adversely affect the condition of the land for future productive agricultural pursuits.

Objectives of the RU1 Primary Production zone

The objectives of the RU1 Primary Production zone are as follows:

- 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 uses within this zone and land uses within adjoining zones.*

As outlined above, the proposed subdivision is considered inconsistent with the rural subdivision provisions contained in the Murrumbidgee LEP; however, it would facilitate development that contributes towards the achievement of the RU1 zone objectives.

Principally, the BESS meets the objective to encourage diversity in primary industry enterprises and systems appropriate for the area. As a passive style land use, it may be considered it would minimise conflict within this zone. Additionally, the proposal includes controls that would protect and enhance the natural environment and mitigate land degradation.

As outlined above, the proposed subdivision is necessary to facilitate the BESS proposal.

Riverina-Murray Regional Plan 2036

The Riverina-Murray Regional Plan 2036 identifies a vision for the region, acknowledges the opportunities provided by natural resources and strong communities and sets the following regionally focused goals:

- *A growing and diverse economy*
- *A healthy environment with pristine waterways*
- *Efficient transport and infrastructure networks*
- *Strong, connected and healthy communities*

A priority growth sector identified as contributing a growing and diverse economy includes 'renewable energy and mining'. Direction 11 of the Plan aims to 'promote the diversification of energy supplies through renewable energy generation', which will contribute to leveraging opportunities for the long-term sustainability of the region. To facilitate this process, the Action associated with Direction 11 includes:

- *11.1 Encourage renewable energy projects by identifying locations with renewable energy potential and ready access to connect with the electricity network.*
- *11.2 Promote best practice community engagement and maximise community benefits from all utility-scale renewable energy projects.*
- *11.3 Promote appropriate smaller-scale renewable energy projects using bioenergy, solar, wind, small-scale hydro, geothermal or other innovative storage technologies.*

The proposed BESS is suitably positioned to access and contribute to the electricity network.

Murrumbidgee Local Strategic Planning Statement

The Local Strategic Planning Statement (LSPS) outlines the Murrumbidgee' economic, social, and environmental land use needs over the next 20 years. It sets clear planning priorities about what will be needed, such as maximising opportunities for jobs and development. Most importantly, the LSPS acknowledges the unique natural and built character of the local government area.

The Strategic agenda for Economic Growth within the LSPS, identifies renewable energy projects and outlines ambitions and associated implementation strategies. The LSPS identifies support for renewable energy and in particular, solar farms. To assist in implementing and achieving the ambition, the LSPS outlines assisting proponents of renewable energy projects through the planning process.

Conveyancing Act 1919

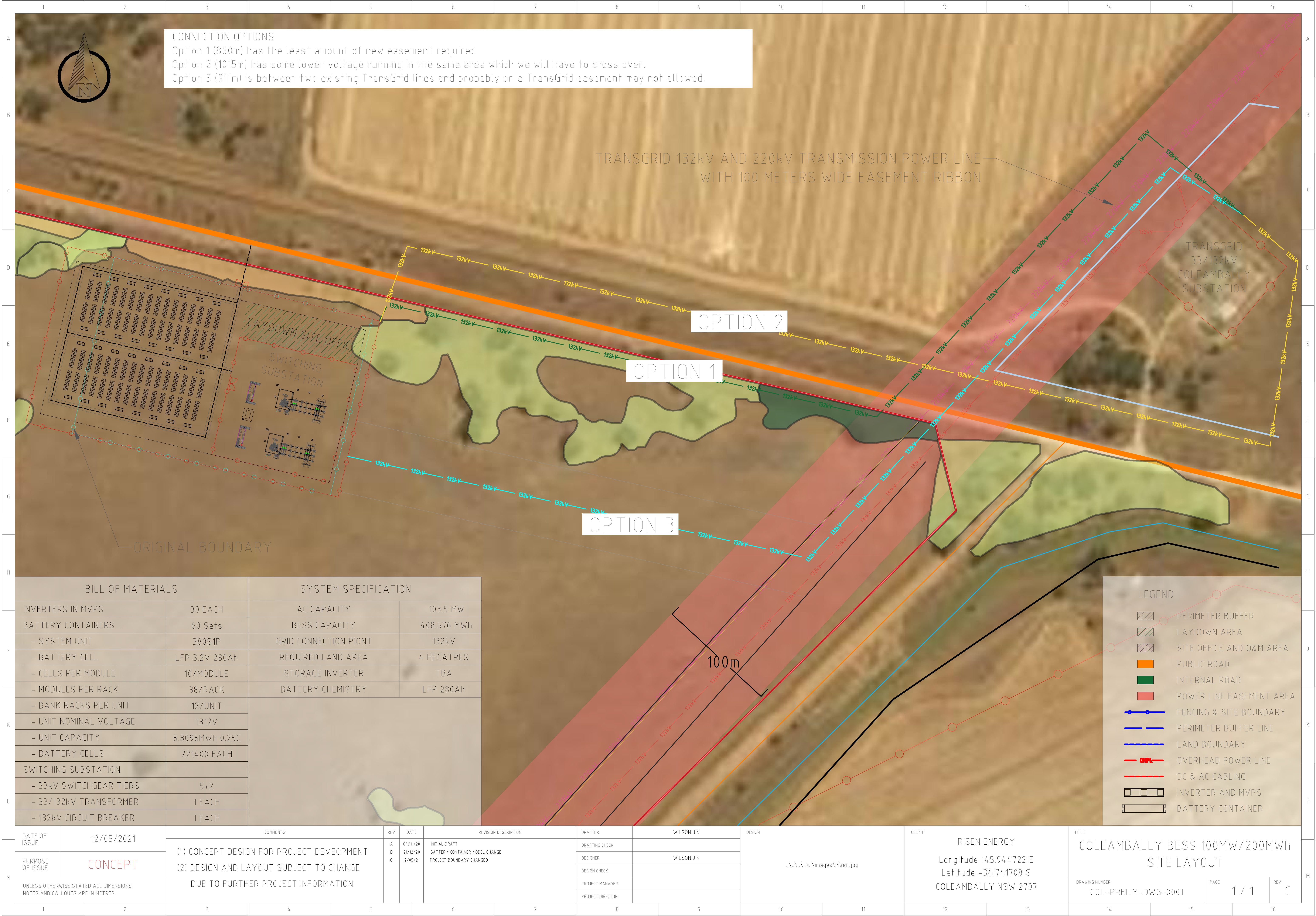
The purpose of the *Conveyancing Act 1919* is to amend and consolidate the law of property and to simplify and improve the practice of conveyancing; and for such purposes to amend certain Acts relating thereto.

When land is leased from a landowner and the lease affects part of a lot, a subdivision under s.7A (3) *Conveyancing Act 1919* (formerly s.327AA *Local Government Act 1919* now repealed) must occur if the total of the original term of the lease, together with any option of renewal, is more than five years.

As indicated above, the proposed development includes the subdivision of Lot 100 DP1139115 where a lease of part of Lot 100, by the proponent is required. The proposed subdivision would

satisfy leasing requirements, facilitate the proposed BESS and allow agricultural activities to continue upon the remaining portion of the land.

2. Attachment – BESS Concept Layout Plan



3. Attachment – BESS Brochure

Case Study of Energy Storage System



Time: 2018
Address: Guangzhou, China
Size: 500kW/914kWh

Application:
▪ Peak Shifting
▪ Backup Power



Time: 2019
Address: Jintan, China
Size: 1MW/4.09MWh

Application:
▪ Peak Shifting
▪ Backup Power



Time: 2019
Address: Nantong, China
Size: 2MW/8.8MWh

Application:
▪ Peak Shifting



Time: 2020
Address: Poland
Size: 15.5MWh

Application:
▪ Peak Shifting
▪ Frequency Regulation



Time: 2019
Address: Ningbo, China
Size: 250kW/1MWh

Application:
▪ Energy Shifting
▪ Renewable Smoothing



Time: 2020
Address: USA
Size: 6.39MWh

Application:
▪ Energy Shifting
▪ Renewable Smoothing
▪ PV+S DC-coupled



Coleambally Battery Energy Storage System Project Introduction



Source: www.energy.vic.gov.au

W: www.nghconsulting.com.au

The Proponent

- Risen Energy Australia
- Operating in Australia since 2008 – Melbourne and Brisbane
- Deliver PV and energy storage solutions at all scales throughout Australia - residential, commercial and utility
- PV projects in operation: 134MW Merredin Solar Farm, Western Australia and 132MW Yarranlea Solar Farm, Queensland
- Under planning: 1 solar farm of 250 MW in SA, 1 battery project 200 MW in SA, 1 potential solar farm and 1 battery project of 100 MW each in NSW (in early phase of feasibility DD
- 3 solar farms of 5 MW each in NSW under planning

W: www.nghconsulting.com.au

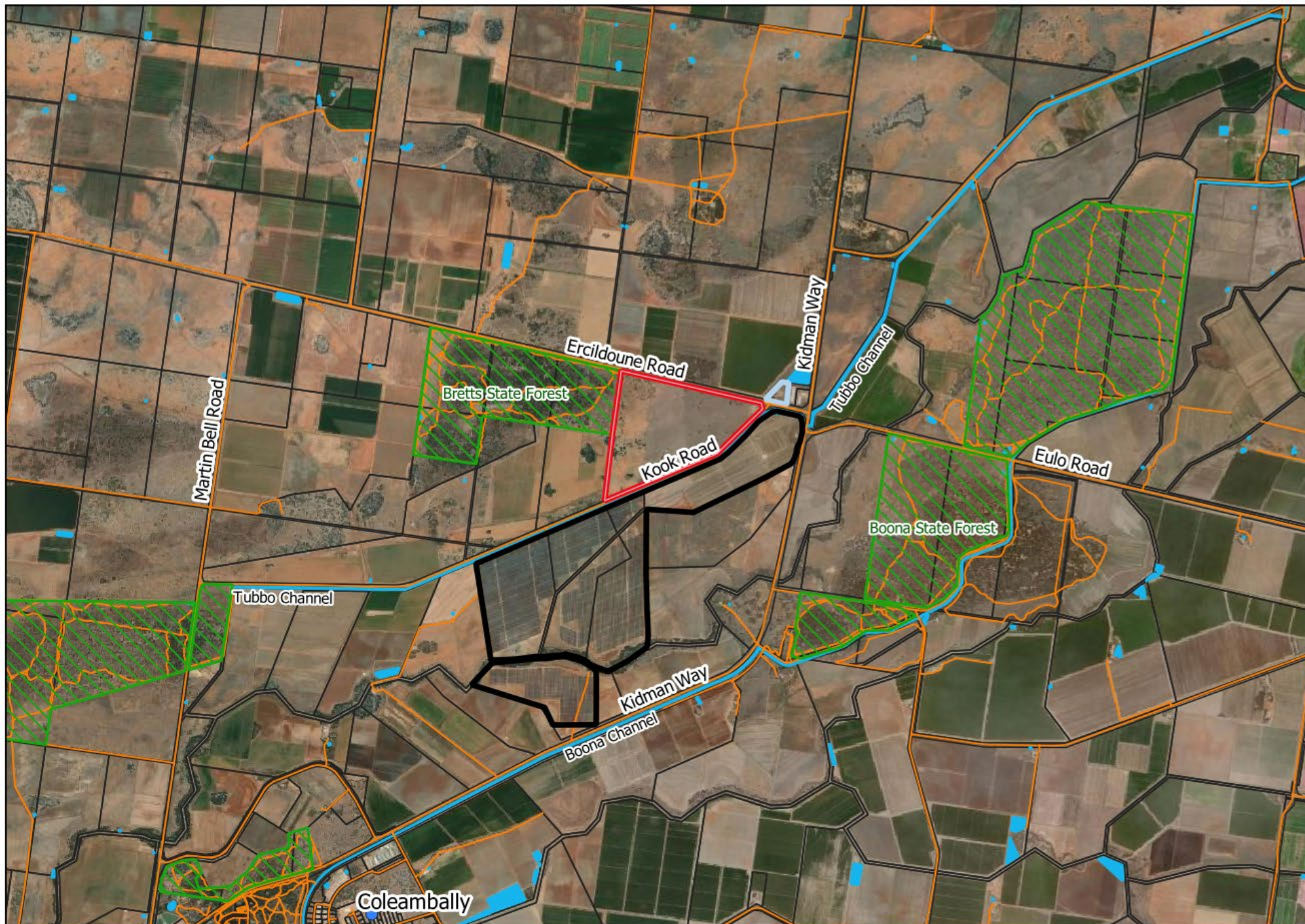


Project Location

- ~ 8.3 km north of Coleambally
- Lot 100 DP1139115, corner of Ercildoune and Kook Roads
- Three sensitive receptors between 1 and 2 km of the Subject Land
- Tubbo Channel adjacent to Subject Land
- Coleambally Solar Farm to the east

W: www.nghconsulting.com.au





20-618 Site location

- Subject land
- Existing solar farm
- Existing substation
- Hydroarea
- Nature reserve
- Lot
- Road



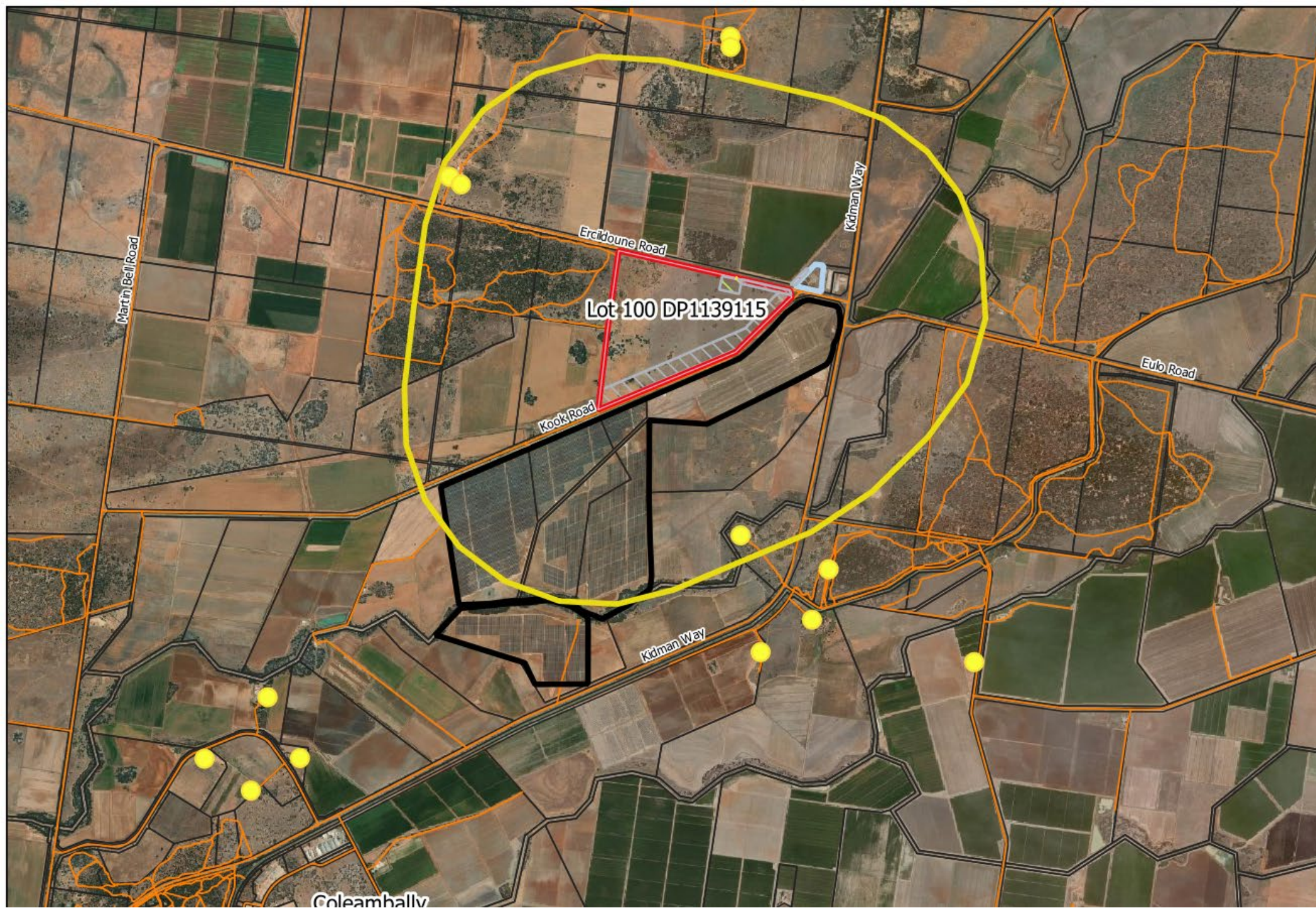
Data Attribution
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© Murrumbidgee Shire Council LGA

Ref: 20-618 Coleambally BESS 20210428 \ 20-618 Site location
Author: Z Bradley
Date created: 09.06.2021
Datum: GDA94 / MGA zone 55

0 1 2 km



NGH



20-618 Sensitive receivers

- Sensitive receptor
- 2 km buffer
- Subject land
- Development footprint
- Easement
- Existing solar farm
- Existing substation
- Lot
- Road
- Transmission easement



Data Attribution
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© Murrumbidgee Shire Council LGA

Ref: 20-618 Coleambally BESS 20210428 \ 20-618 Sensitive receivers
Author: Z Bradley
Date created: 09.06.2021
Datum: GDA94 / MGA zone 55

0 0.5 1 1.5 2 km



Project Information

- State Significant Development
- Battery Energy Storage System (~ 4 ha footprint)
- 100 – 400 MWh
- Up to 50 containers housing lithium-ion batteries and power conversion system (height 2.3 m)
- On-site substation
- Approximately 1 km of new 132 or 275 kV transmission line
- Construction phase approximately 12 months
- Subdivision

W: www.nghconsulting.com.au



Proposal Benefits

- Improve reliability and security of the electricity network by storing energy during periods of low demand and dispatching energy during periods of peak demand and emergency events.
- Direct employment opportunities during the construction period and up to one ongoing job during the 30-year operational life

W: www.nghconsulting.com.au



20-618 Proposal layout

-  Subject land
-  Development footprint
-  Easement
-  Existing solar farm
-  Existing substation
-  Road
-  Transmission easement

Transmission line options

-  Option 1
-  Option 2
-  Option 3



Data Attribution
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© ESRI 2021
© Murrumbidgee Shire Council LGA

Ref: 20-618 Coleambally BESS 20210428 \ 20-618 Proposal layout
Author: Z Bradley
Date created: 09.06.2021
Datum: GDA94 / MGA zone 55

0 100 200 m



NGH



Community and stakeholder engagement

- Strategy under development.
- We aim to engage early to share information on the project and gather information on community landscape values and potential concerns.
- Engagement is expected to be targeted initially, focusing on meetings with nearby stakeholders, ahead of broader engagement with the local community.
- Coordinating with Council on the engagement approach would be beneficial.

W: www.nghconsulting.com.au



C.3 Scoping Engagement Materials

23 June 2020



The landholder

[Address]

Coleambally

NSW 2707

To the landholder or resident

Re: Coleambally Battery Energy Storage System Scoping Assessment

Risen Energy is currently assessing the potential for a Battery Energy Storage System (BESS) at a site approximately 8.3 km north of Coleambally near the corner of Ercildoune and Kook Roads.

Battery energy storage can provide reliable and efficient energy by shifting the supply of electricity from times of high supply and low demand to times of low supply and high demand.

The proposed BESS system footprint would cover approximately 4 hectares (ha) and will generate approximately 100MW capacity, with 200 - 400 megawatt hours (MWh). The proposed site was chosen due to the proximity to the existing substation and solar farm.

We would like to discuss the details and planning stages for this proposal with you at your property.

Our team will be visiting this area on Monday 28 June, and we would appreciate the opportunity to discuss this proposal in person.

If you are available for a brief discussion on this day, please contact Ben Smith on 0414 943 326 to arrange a time to meet. If you are not around at this time, but would like to know more about the project, please contact one of Risen team members on the details below. Your help is greatly appreciated.

Lena Li

Project Development and Investment Director
0428 846 998

Sabina Scharfe

Project development manager
0448 147 447

About us

Risen energy is a renewable energy company delivering projects across a number of countries around the world including China, Germany, Australia, Mexico, India, Japan, and the United States of America.

Risen was founded in 1986 and established its presence in the Australian market in 2008 supplying solar PV panels and energy storage systems to the residential market, commercial market and utility-scale market. It is one of the pioneers in the solar industry and has committed to this industry as a R&D expert, an integrated manufacturer from wafers to modules, a manufacturer of off-grid systems, an investor, a developer and solution provider for large commercial and utility-scale projects.

Risen operates in Australia through office in Brisbane and Melbourne and on site operating in Merredin Solar Farm in Western Australia and Yarranlea Solar Farm in Queensland, each capable of generating enough energy to supply approximately 32,000 Australian homes.. Risen also has several Australian renewable energy projects under planning.



Unit 35, 15 Ricketts Road,
Mount Waverley, Victoria, 3149, Australia

Phone: +61 3 9021 7788

Fax: +61 3 9795 9601

Email: info@risenenergy.com.au

Web: www.risenenergy.com.au

28 June 2020



The landholder or resident
Coleambally
NSW 2707

Sorry we missed you!

We visited your property today to discuss the Coleambally Battery Energy Storage System Scoping Assessment.

Risen Energy is currently assessing the potential for a Battery Energy Storage System (BESS) at a site approximately 8.3 km north of Coleambally near the corner of Ercildoune and Kook Roads.

Battery energy storage can provide reliable and efficient energy by shifting the supply of electricity from times of high supply and low demand to times of low supply and high demand.

The proposed BESS system footprint would cover approximately 4 hectares (ha) and will generate approximately 100MW capacity, with 200 - 400 megawatt hours (MWh). The proposed site was chosen due to the proximity to the existing substation and solar farm.

We visited your property today to discuss the details and stages for this proposal, and in the coming months we will be seeking your feedback as the planning progresses.

If you would like to discuss this proposal, please contact Ben Smith on 0414 943 326. Otherwise, we will reach out to you again soon.

Best regards,

Lena Li

Project Development and Investment Director
Risen Energy
0428 846 998

About us

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Risen was founded in 1986 and established its presence in the Australian market in 2008 supplying solar PV panels and energy storage systems to the residential market, commercial market and utility-scale market. It is one of the pioneers in the solar industry and has committed to this industry as a R&D expert, an integrated manufacturer from wafers to modules, a manufacturer of off-grid systems, an investor, a developer and solution provider for large commercial and utility-scale projects.

Risen operates in Australia through office in Brisbane and Melbourne and on site operating in Merredin Solar Farm in Western Australia and Yarranlea Solar Farm in Queensland, each capable of generating enough energy to supply approximately 32,000 Australian homes. Risen also has several Australian renewable energy projects under planning.



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Golden Sigma



SU340U85K/SU340U170K

Outdoor Air-Cooling Cabinet BESS

System Controller



Short Circuit Protection



Rack Level Lockable Disconnect



Water-based suppression System



Intrusion Detect System

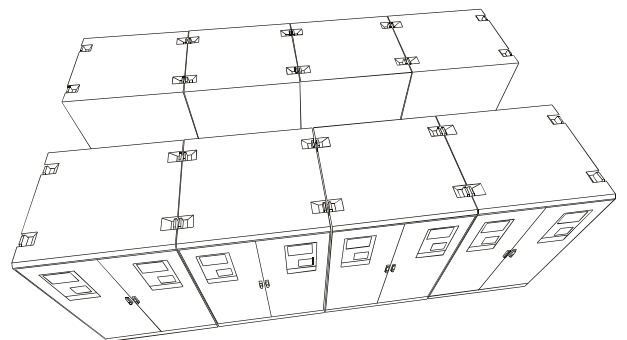


Fire Detection and Suppression



HIGHLIGHT

- Low Capex
- Plug and Play
- Low Field Labor Cost
- Pre-Populated With Batteries
- Flexible Deployment According to The Site Layout



Technical Specification

Item

Specification

System Model	SU340U85K	SU340U170K
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System Information

Nominal AC Power	85kW	170kW
Nameplate Capacity	340.48kWh	

Battery Information

Battery Chemistry	LFP
Capacity	280Ah
Configuration	380S1P
Nominal Voltage	1,216V
Voltage Range	1,064 ~ 1,368V

Working Conditions

Degree of Protection	NEMA 3R / IP54
Noise Emission	≤65dB @1m
Operating Temperature Range	-22° F ~ 113° F / -30° C ~ 45° C
Relative Humidity	0~95% (Non-condensing)
Max.Working Altitude	6,500/2,000m

System Information

Dimensions(W×H×D)	4.8'×7.6'×4.5' / 1,473×2,330×1,363mm	
Weight (with & without batteries)	7,750lbs / 3,700kg	7,950lbs / 3,800kg
Cooling	HVAC	
Fire Suppression System	Aerosol	
Certificate	IEC62619, UL1973, UL9540A	

Outdoor Air-Cooling Cabinet BESS

APPENDIX D LAND CATEGORY ASSESSMENT



NGH



risen
solar technology

LAND CATEGORY ASSESSMENT

Coleambally Battery Energy Storage System

June 2021

Project Number: 20-618



Document verification

Project Title: Coleambally Battery Energy Storage System

Project Number: 20-618

Project File Name: 20-618 Coleambally Land Cat Assessment

Revision	Date	Prepared by	Reviewed by	Approved by
Draft V1.0	21/05/2021	C. Vincent	J. Gooding	J. Gooding
Final V1.0	30/06/2021	C. Vincent	J. Gooding	J. Gooding
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Acronyms and abbreviations

ALUM	Australian Land Use and Management
BAM	Biodiversity Assessment Method
BC Act	<i>Biodiversity Conservation Act 2016 (NSW)</i>
BESS	<i>Battery Energy Storage System</i>
DPIE	Department of Planning, Industry and Environment (NSW)
FPC	Foliage Protective Cover
ha	hectares
km	kilometres
LCA	Land Category Assessment
LEP	Local Environment Plan
LLS	Local Land Services Act 2013
NSW	New South Wales
OEH	Office of Environment and Heritage (now DPIE)
PCT	Plant Community Type
PVP	Property Vegetation Plan
RISEN	RISEN ENERGY

1. Land Category Assessment

NGH were engaged by RISEN ENERGY (RISEN) to prepare a Land Category Assessment (LCA) for the proposed Battery Energy Storage System (BESS) located approximately 9km north east of Coleambally, NSW.

Section 6.8(3) of the Biodiversity Conservation Act 2016 (BC Act) determines that the Biodiversity Assessment Method (BAM) *is to exclude the assessment of the impacts of clearing of native vegetation on Category 1-exempt land (within the meaning of Part 5A of the Local Land Services Act 2013) other than any impacts prescribed by the regulations under section 6.3*. Boundaries mapping Category 1-exempt land on the Native Vegetation Regulatory Mapping are not yet publicly available. During the transitional period, accredited assessors may establish the categorisation of land for the agency head to consider, following the method utilised to develop the Native Vegetation Regulatory Map.

Category 1- Exempt land is defined under the Local Land Services Act 2013 (LLS) as;

- Land cleared of native vegetation as at 1 January 1990 or lawfully cleared after 1 January 1990.
- Low Conservation Grasslands (following commencement of the new framework on 25th August 2017)
- Land (not being grasslands) containing only low conservation groundcover (following commencement of the new framework on 25th August 2017)
- Native vegetation identified as regrowth in a Property Vegetation Plan under the repealed Native Vegetation Act 2003
- Land biodiversity certified under the BC Act.

Category 2 – Regulated Land is defined as:

- Land **not** cleared as at 1st January 1990 or unlawfully cleared after 1st January 1990;
- Native vegetation grown with the assistance of public funds;
- Land that is (or was previously) subject to a Private Native Forestry Plan or Private Native Forestry Property Vegetation Plan (PVP);
- Grasslands that are neither low nor high conservation grasslands;
- Travelling stock reserves;

Additionally, two subcategories of Category 2 – Regulated Land are also relevant and include;

- **Category 2 Vulnerable Regulated Land**
 - Steep or highly erodible land;
 - Protected riparian areas;
 - Land susceptible to erosion, or land that is otherwise environmentally sensitive.
- **Category 2 Sensitive Regulated Land**
 - Land subject to a private land conservation agreement;
 - A set aside under the Land Management Code;
 - Land subject to a bio-certification conservation measure;
 - Land comprising an offset under a Property Vegetation Plan or set aside under a code under the *Native Vegetation Act 2003*;
 - Coastal wetlands and littoral rainforests (*Coastal Management Act 2016*);
 - High conservation grasslands;
 - Core Koala habitat identified in a plan of management (Koala Habitat Protection SEPP)
 - Critically endangered plants and critically endangered ecological communities

- Ramsar wetlands (EPBC Act)
- Land subject to remedial action or conservation measures under the BC Act
- Land subject to a property, trust or conservation agreement
- Land recommended for listing as an Area of Outstanding Biodiversity Value
- Conservation Areas under the Southern Mallee Land Use Agreement
- Native vegetation that must be retained under the Plantation and Reafforestation Act 1999
- Land subject to a condition of development consent requiring the land to be set aside for conservation purposes under the Environmental Planning and Assessment Act 1979

This letter report establishes the methodology, results and conclusions to evaluate the land categorisation for the development site. It is anticipated that the Department of Planning, Industry and Environment (DPIE) (Biodiversity and Conservation Division) would support this approach and provide endorsement for the land categorisation of the proposal site for the Coleambally BESS.

1.1 Methodology

A desktop assessment, literature review of previous studies and field observations were undertaken over the proposal site - to determine the ecological constraints, native vegetation communities and land class category. A precautionary approach was used when identifying Category 2- Regulated Land. Where data was conflicting, land was mapped as Category 2 - Regulated Land.

1.1.1 Desktop Assessment

A desktop assessment of the development site as Category 1 – exempt and Category 2 – regulated land was undertaken using as a minimum, the following data sources and assessed in the listed order:

- 2017 Land Use Dataset (Australian Land Use and Management (ALUM) Classification version 7 (Office of Environment and Heritage (OEH) 2017).
- NSW Woody Vegetation extent and Foliage Projective Cover (FPC) 2011 (OEH 2015).
- Sensitive regulated and vulnerable lands on the Native Vegetation Regulatory Map Portal (LLS 2020).
- Aerial imagery of historical land use (sourced from spatial data services; Department of Finance, Services and Innovation 2020).
- Relevant State Vegetation Mapping (OEH).

1.1.2 Site Assessment

According to NSW State vegetation mapping and a preliminary site inspection (undertaken by an NGH ecologist on 11 December 2020), three Plant Community Types (PCTs) are present on the site. Detailed surveys would need to be conducted to confirm the species present and structure/diversity/condition characteristics.

- PCT 16: Black Box grassy woodland wetland of rarely flooded depressions in south western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion).
- PCT 26: Weeping Myall open woodland of the Riverina Bioregion and NSW South Western Slopes Bioregion.
- PCT 45: Plains Grass grassland on alluvial mainly clay soils in the Riverina Bioregion and NSW South Western Slopes Bioregion.

1.2 Results

The analysis of the above sources, in conjunction with historical aerial imagery, demonstrates evidence of broad vegetation modification resulting from agricultural land use within the proposal site prior to and post 1990. The following table (Table 1) demonstrates how the above mentioned layers were used in determining land category.

Table 1 Summary of data sources and interpretation.

Data Sources	Category 1 – Exempt Land	Category 2– Regulated Land	Excluded Land
2017 Land Use Dataset (Appendix A.2)	- Mapped as the following: - cropping	- Mapped as the following: - Grazing native vegetation.	N/A
NSW Woody vegetation extent, 2011 (Appendix A.3)	Areas with no woody vegetation	Woody vegetation present as at 1990 inclusive of paddock trees.	N/A
Native Regulatory Map, 2017 - Excluded land - Sensitive regulated land - Vulnerable regulated land (Appendix A.4)	N/A –	N/A – No Sensitive or vulnerable regulated land mapped.	N/A – No excluded land mapped.
1977 aerial imagery (Appendix A.5)	Areas with no woody vegetation	Woody vegetation present at 1990 demonstrated within woody vegetation extent layer.	N/A
1993 aerial imagery (Appendix A.6)	Areas with no woody vegetation	Woody vegetation present at 1990 demonstrated within woody vegetation extent layer.	N/A
Current aerial imagery	Areas with regenerating Weeping Myall not present in 1990	Woody vegetation and native grasslands present with no evidence of historical ground disturbance	N/A

Data Sources	Category 1 – Exempt Land	Category 2– Regulated Land	Excluded Land
Plant Community Types (NGH), (Appendix A.7)	Cropped areas.	- Woody vegetation present at 1990 demonstrated within woody vegetation extent layer. - PCT 16, PCT 26 & PCT 45 with no evidence of historic ground disturbance.	N/A

In summary, the analyses of the above sources identified the following:

- Most of the proposal site is mapped under the 2017 landuse dataset as ‘cropped’. Historic aerial imagery shows regular agricultural use until 2015. A determining feature of agricultural use is a lack of woody vegetation regrowth as represented in the aerial imagery. Historical imagery from 1977 and 1993 shows the area was disturbed but with scattered trees present. Cropping was evident in 2003 and 2009. The site visit shows there has been a lack of recent cropping due to the regrowth of Weeping Myall and native understory vegetation which is scattered throughout. As the Weeping Myall regrowth occurred post 1990, the land meets the definition of Category 1 Land. The area mapped as cropped, excluding the trees that were present pre 1990 have been mapped as Category 1- Exempt land.
- A small portion of the land north west of the proposal site is mapped under the 2017 landuse dataset as grazing native vegetation. Historical aerial imagery from 1977 and 1993 shows some evidence of woody regrowth here, continuing to increase over the next 25 years. There is no clear evidence of historic ground disturbance from aerial imagery. The site visit identified this area as PCT 26 Weeping Myall open woodland of the Riverina bioregion and NSW South Western Slopes Bioregion. This woodland was many years older than regrowth establishing in areas mapped as Category 1 - Exempt land.
- The 2011 Woody Vegetation extent identifies scattered paddock trees. From 1977 and 1993 historical imagery and current imagery there appears to be minimal if any clearing of these. These have been mapped as Category 2 - Regulated land.
- No areas are mapped as ‘excluded land’, ‘sensitive regulated land’ or ‘vulnerable regulated land’.
- The entire proposal site is zoned as Primary Production - RU1 (Appendix A.3).
- Areas that are part of the following PCTS are mapped as Category 2 – Regulated land.
 - PCT 16 Black Box grassy woodland wetland of rarely flooded depressions in south western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion).
 - PCT 26 Weeping Myall open woodland of the Riverina Bioregion and NSW South Western Slopes Bioregion.
 - PCT 45: Plains Grass grassland on alluvial mainly clay soils in the Riverina Bioregion and NSW South Western Slopes Bioregion.
- Field surveys were conducted on 11th December 2020.

1.3 Conclusion

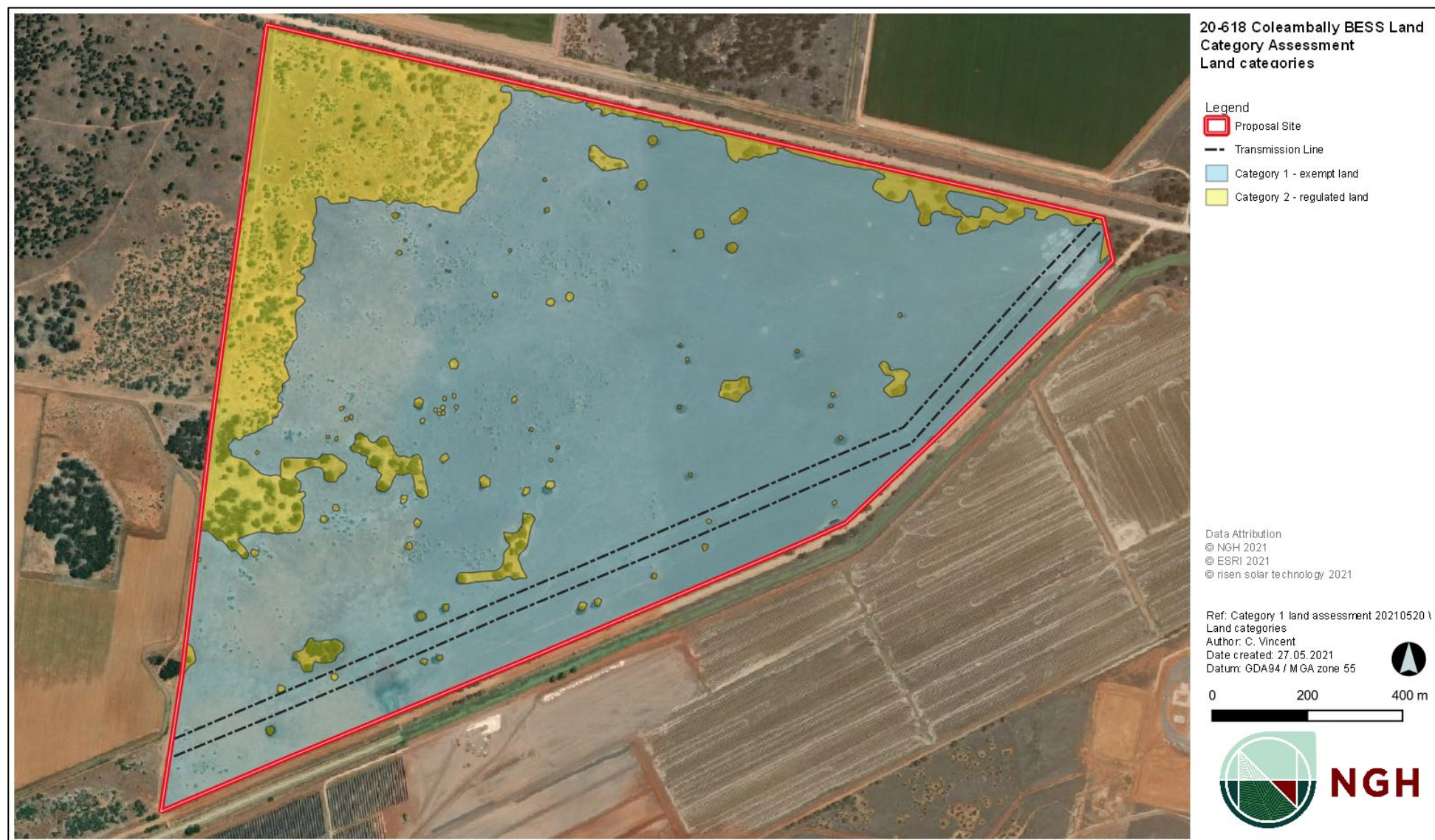
Based on the above data sources, there is evidence to suggest that a large portion of the proposal site had been used for cropping pre and post 1990. This is supported by the 2017 landuse datasets, historic aerial imagery and land zoning mapping data.

Areas of woody vegetation and scattered paddock trees have been mapped as Category 2 – Regulated land. Areas mapped as ‘grazing native vegetation’ in the 2017 land use dataset with no clear evidence of historic ground disturbance have been mapped as Category 2 – Regulated land.

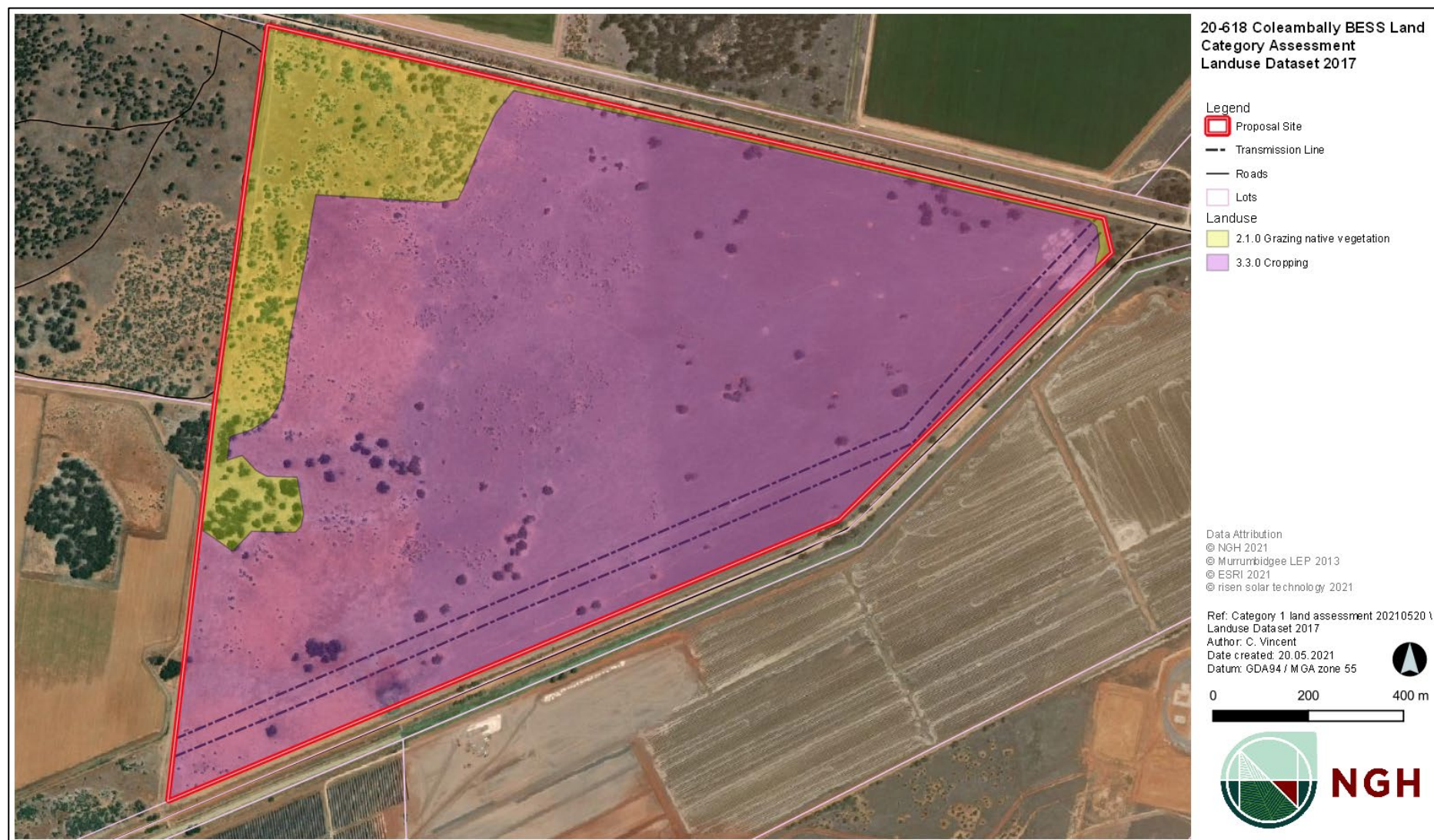
Based on our assessment, a draft map of areas considered to be Category 1 – Exempt Land and Category 2 – Regulated Land has been produced (Appendix A.1). The relevant datasets used in the assessment are in Appendix A.2 – Appendix A.8).

Appendix A Land Category Assessment Mapping

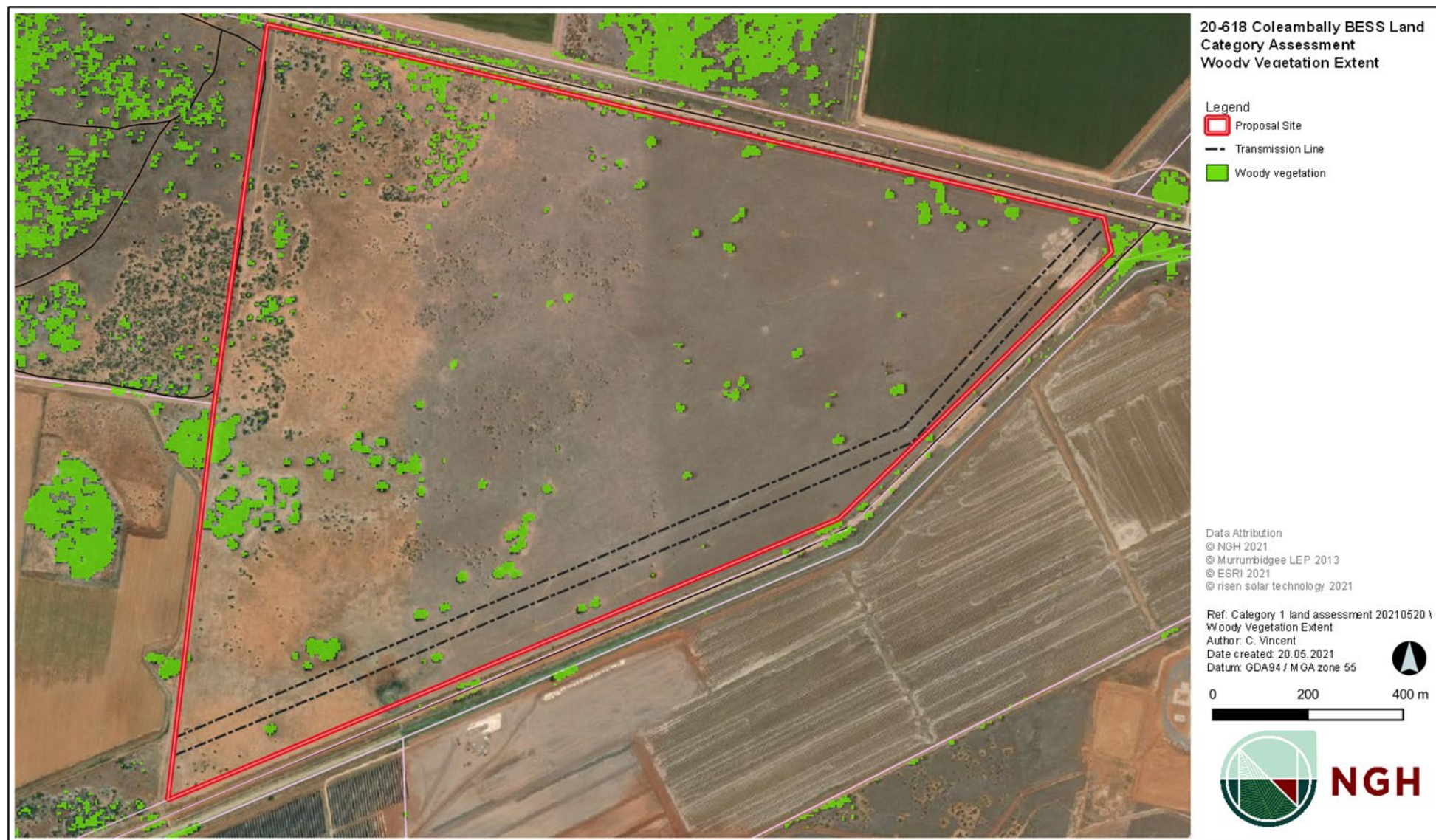
A.1 Development Site Overview and Land Categorisation



A.2 Landuse Dataset 2017



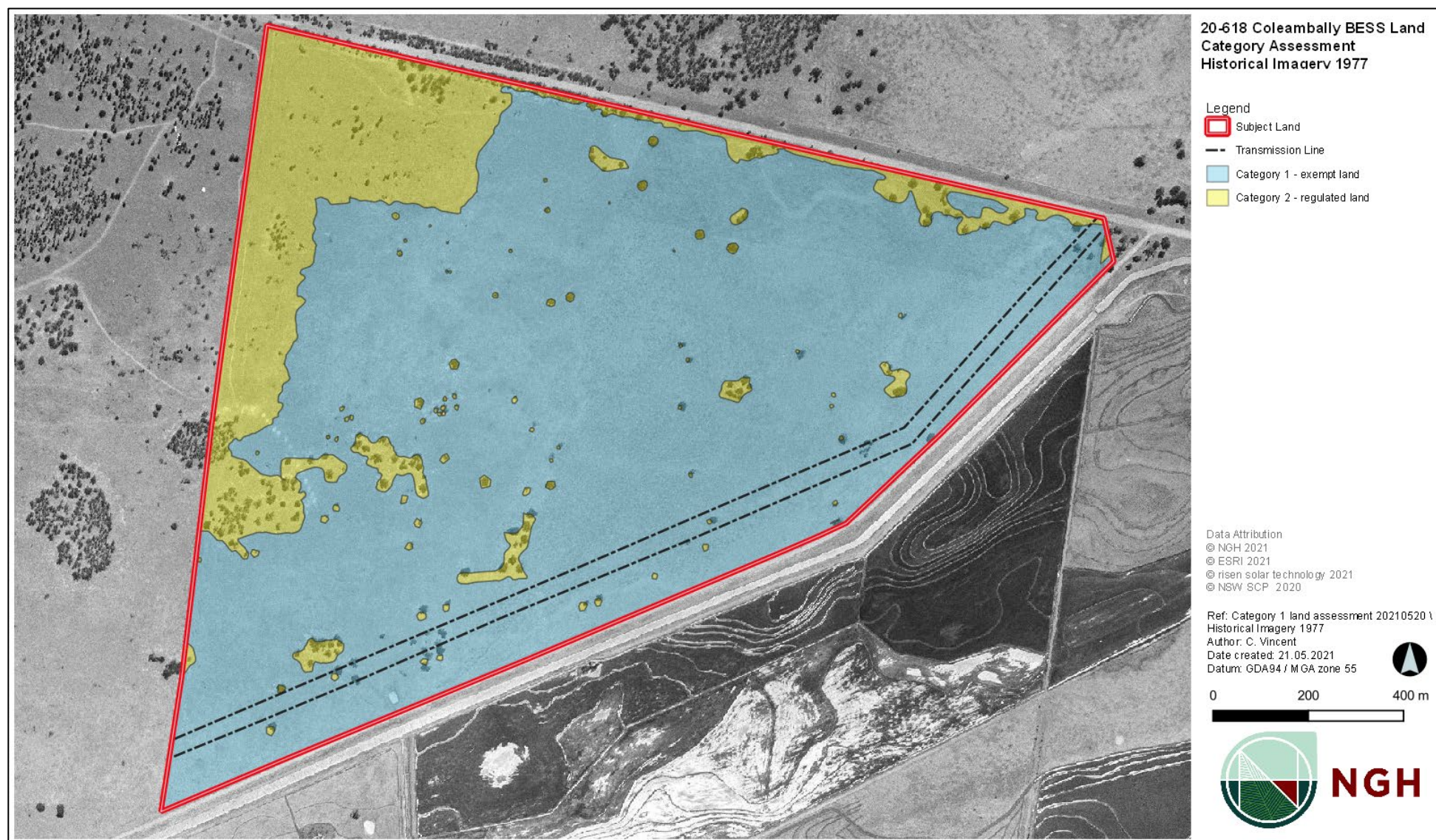
A.3 NSW Woody Vegetation Extent and FPC



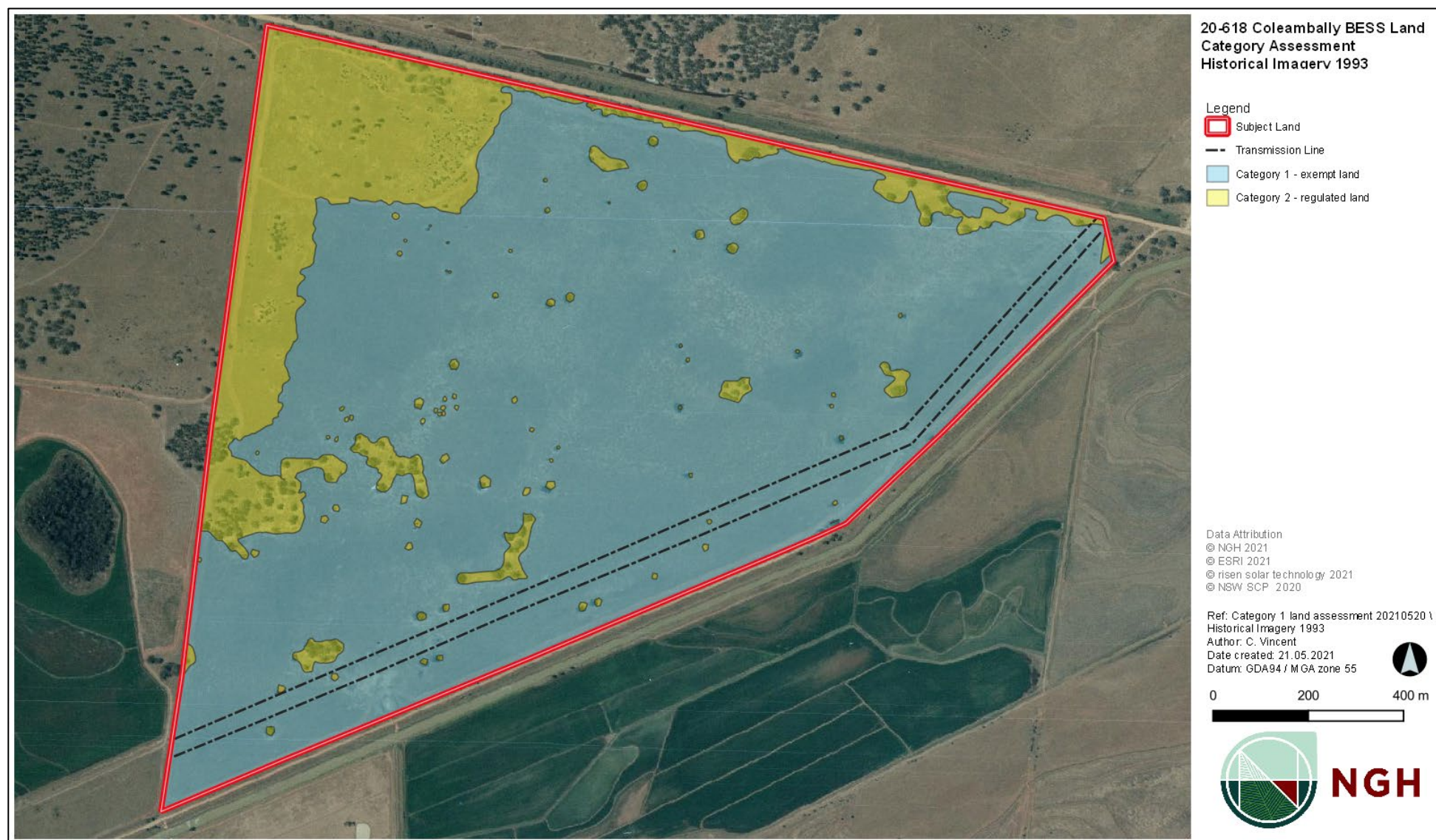
A.4 Native Vegetation Regulatory map



A.5 Aerial imagery 1977 (Spatial portal 2021)



A.6 Aerial Imagery 1993 (Spatial Portal 2021)



A.7 Plant Community Types (NGH)



A.8 Land Zoning Murrumbidgee LEP (2013)

