Premise

ACENERGY

Environmental Impact Statement

IN SUPPORT OF A DEVELOPMENT APPLICATION

Report No: 221106/EIS
Rev: 001E
23 August 2022

DOCUMENT AUTHORISATION					
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CERTIFICATION

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Project details	
Project name	Apsley Battery Energy Storage System (BESS)
Application number	SSD-13137914
Address of the land in respect of which the development application is made	Lot 3 DP1012686 9010 Mitchell Highway, Apsley
Applicant details	
Applicant name	ACEnergy
Applicant address	Suite 502, 689 Burke Road, Camberwell VIC 3124
Declaration	
Name	David Walker
Organisation registered with	Planning Institute of Australia (MPIA)
Declaration	The undersigned declares that this EIS: • has been prepared in accordance with Clause 192 of the *Environmental Planning and Assessment Regulation 2021*; • contains all available information relevant to the environmental assessment of the development, activity or infrastructure to which the EIS relates; • does not contain information that is false or misleading; • addresses the Planning Secretary's environmental assessment requirements (SEARs) for the project;

	• identifies and addresses the relevant statutory requirements for the project, including any relevant matters for consideration in environmental planning instruments; • has been prepared having regard to the Department's State Significant Development Guidelines - *Preparing an Environmental Impact Statement*; • contains a simple and easy to understand summary of the project as a whole, having regard to the economic, environmental and social impacts of the project and the principles of ecologically sustainable development; • contains a consolidated description of the project in a single chapter of the EIS; • contains an accurate summary of the findings of any community engagement; and • contains an accurate summary of the detailed technical assessment of the impacts of the project as a whole.
Signature	
Date	**23/08/22**

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GLOSSARY AND ABBREVIATIONS

Term	Definition
AADT	Annual Average Daily Traffic
ABS	Australian Bureau of Statistics
AC	Alternating Current
ACHAR	Aboriginal Cultural Heritage Assessment Report
ACHCRP	Aboriginal cultural heritage consultation requirements for proponents
AEMO	Australian Energy Market Operator
AEMC	Australian Energy Market Commission
AEP	Annual Exceedance Probability
AER	Australian Energy Regulator
AGO	Australian Greenhouse Office
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
ARI	Average Recurrent Interval
APZ	Asset Protection Zone
ARENA	Australian Renewable Energy Agency
ARPANSA	Australian Radiation Protection and Nuclear Safety Agency
ASRIS	Australian Soil Resource Information System
AV	Articulated Vehicle
BAL	Basic Left Turn
BAM	Biodiversity Assessment Methodology
BAR	Basic Right Turn
BC Act	*Biodiversity Conservation Act 2016*
BCSD	Biodiversity Conservation and Science Division (formally within Office of Environment and Heritage (OEH))
BDAR	Biodiversity Development Assessment Report
BFMC	Bush Fire Management Committee
BFSA	Bush Fire Safety Authority
BOM	(Australian) Bureau of Meteorology
BSAL	Biophysical Strategic Agricultural Land
CCP	Community Consultation Plan
CCTV	Closed-circuit television

Term	Definition
CEC	Clean Energy Council
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
CER	Clean Energy Regulator
CHMP	Cultural Heritage Management Plan
CIV	Capital Investment Value
CML	Concessional Mass Limit
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DA	Development Application
DAWE	(Commonwealth) Department of Agriculture, Water and the Environment (Formally Department of Energy and Environment (DoEE))
dB(A)	Decibels, a measure of A-weighted *(c.f.)* sound levels.
DC	direct current
DECC	Department of Climate Change (now DPE)
DECCW	Department of Climate Change and Water (now DPE)
DEMP	Decommissioning Environmental Management Plan
DoA	(NSW) Department of Agriculture
DP	deposited plan
DPE	Department of Planning and Environment
DPIE	Department of Planning, Industry and Environment
DPI	Department of Primary Industries
DRC	Dubbo Regional Council
EEC	Endangered Ecological Community
EES	(NSW) Environment Energy and Science
EIS	Environmental Impact Statement
ELF	Extremely low frequency, in relation to Hz *(c.f.)*
EMFs	Electric and magnetic fields
EMP	Environmental Management Plan
EMS	Environmental Management Strategy
EP&A Act	(NSW) *Environmental Planning and Assessment Act 1979*
EP&A Regulation	(NSW) *Environmental Planning and Assessment Regulation 2021*
EPA	(NSW) Environment Protection Authority
EPBC Act	(Commonwealth) *Environment Protection and Biodiversity Conservation Act 1999*

Term	Definition
EPC	Engineering Procurement and Construction
EPI	Environmental Planning Instruments
ERP	Emergency Response Plan
ESD	Ecologically sustainable development
GDE	Groundwater Dependent Ecosystems
GHG	Greenhouse gas
GML	General Mass Limit
GRP	gross regional product
GWh	Gigawatt hours
ha	hectares
HBT	Hollow Bearing Tree
Heritage NSW	The Heritage Council of NSW
IBRA	International Bioregions of Australia
ICNG	Interim Construction Noise Guideline
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IPA	Inner protection area
kl	kilolitres
km	kilometres
kV	kilovolts
kW	kilowatts
LALC	Local Aboriginal Land Council
LEMC	Local Emergency Management Committee
LEP	Local Environment Plan
LGA	Local Government Area
LSC	Land and Soil Capability
LUCRA	Land Use Conflict Risk Assessment
m	metres
mm	millimetres
ML	Megalitres
MNES	Matters of National Environmental Significance, under the EPBC Act (*c.f.*)
MSDS	Material and Safety Data Sheet
MW	Megawatt
MWh	Megawatt hours

Term	Definition
NEG	National Energy Guarantee
NEM	National Electricity Market
NML	Noise Management Level
NPfI	NSW Policy for Industry (2017)
NPW Act	National Parks and Wildlife Act 1974
NSW	New South Wales
NRET	National Renewable Energy Target
O&M	Office and Maintenance
OEMP	Operation Environmental Management Plan
PBFP	Planning for Bushfire Protection
PCT	Plant Community Type
PCU	Power Conversion Unit
PHA	Preliminary Hazard Analysis
Planning Systems SEPP	*State Environmental Planning Policy (Planning Systems) 2021*
PMF	Probable Maximum Flood Level
POEO Act	(NSW) *Protection of the Environment Operations Act 1997*
PV	Photovoltaic
RAPs	Registered Aboriginal Parties
RBL	Rating Background Level - the level of background noise
RE Act	(Commonwealth) *Renewable Energy (Electricity) Act 2000*
RET	Renewable Energy Target
REZ	Renewable Energy Zone
RFS	(NSW) Rural Fire Service
RNP	Road Noise Policy
Roads Act	(NSW) *Roads Act 1993*
SAII	Serious and Irreversible Impacts
SEARs	Secretary's Environmental Assessment Requirements
SEIFA	Socio Economic Indexes for Areas
SEPP	(NSW) State Environmental Planning Policy
SHI	State Heritage Inventory
SSD	State Significant Development
SWMP	Soil and Water Management Plan
TEC	Threatened Environmental Communities

Term	Definition
TfNSW	Transport for New South Wales
TIA	Traffic Impact Assessment
TMP	Traffic Management Plan
VIA	Visual Impact Assessment
V	Volts
WAD	Works Authorisation Deed
WAL	Water Allocation License
WARR Act	Waste Avoidance and Resource Recovery Act 2001
WMP	Waste Management Plan

SUMMARY

Introduction

ACEnergy (ABN: 89 628 883 447) specialises in Renewable Energy Development and Engineering Procurement and Construction (EPC). Their solution includes but is not limited to Site Acquisition, Development Application, Engineering Design, Grid Studies, Connection Application, Procurement Arrangement, International and Domestic Logistics, Civil, Mechanical and Electrical installation, HV Switching, SCADA control, and full Project Management from project planning to practical completion and handover.

ACEnergy seeks to establish an approximately 120 Megawatt AC (MW_{AC}), 240 Megawatt Hours (MWh) Battery Energy Storage System (BESS) and associated works over Lot 3 DP1012686 and Lot 107 DP756920, as well as the Crown road separating the two lots (hereafter referred to as '**the site**'). The site forms part of 9010 Mitchell Highway, Apsley NSW 2820 (hereafter referred to as '**the landholding**') in the Dubbo Regional Council (DRC) Local Government Area (LGA). The site has an area of approximately 18.34 hectares and the proposed project has a development area of approximately 6 hectares.

The proposed development represents state significant on the basis that the project entails the delivery of an electricity generating works with a capital investment value of more than $30 million (Clause 20 of Schedule 1 of the *State Environmental Planning Policy (Planning Systems) 2021*).

Subject to planning and approvals, and detailed design, the construction of the facility is expected to take approximately 5 months. The project will generate approximately 50 (FTE) jobs during construction and up to 5 full time jobs during operation.

Decommissioning would entail the removal of all project components with the exclusion of electricity infrastructure that would remain the property of the electrical authority and limited infrastructure of ongoing use to the farming operator, followed by rehabilitation to enable the land to return to an agricultural use.

Proposal

The primary components associated with the installation of the BESS are as follows:

- Groundcover clearing to provide a developable site;
- Levelling the site and constructing a bench on which to install the BESS unit;
- New driveway from Mitchell Highway leading to a gated entry to the BESS;
- Security fencing around the BESS with external landscaping including:
  - Four rows along the northern side of the security fence;
  - Two rows along the western and southern side of the security fence; and
  - Approximately 20 metre-deep tree planting zone for a length of 150 metres along the Mitchell Highway boundary, including native tree species to match roadside planting character north of the site.
- Permanent carpark and temporary (construction) loading zone adjacent to the western security fence;
- 40-foot battery containers, separated into blocks;
- 40-foot inverter and MPVS containers, separated into rows;
- A 132kV switching station in the north-eastern corner of the BESS site;
- Underground or overhead 132kV transmission line to connect the BESS to the existing powerline to the east;
- Installing a 132kV outdoor switchgear (bus bars and circuit breakers) within the subject property for separating the BESS from the electricity network if and when required;
- Constructing an earthing system for the BESS within the subject property;

- Ancillary high voltage equipment, such as circuit breakers, switching equipment, filters and other electrical protection equipment;
- Auxiliary power, protection, indication and control systems;
- Outdoor sensor lighting to provide illumination, when needed, at night;
- Storage enclosures for storing equipment and HVAC equipment for providing cooling and ventilation;
- Commissioning; and
- Routine maintenance, including monitoring, testing and maintenance of onsite equipment, receipt of goods, removal of waste and other general site maintenance (e.g., care of groundcover).

Environmental issues

An analysis of site constraints via an environmental risk assessment process has identified the following key environmental issues which it was deemed warranted quantitative assessment:

- Aboriginal heritage;
- Land and soil;
- Biodiversity;
- Traffic and access;
- Noise and vibration;
- Visual impacts;
- Technological hazards; and
- Social impacts.

ABORIGINAL HERITAGE

Two isolated stone artefacts (Apsley IF-1 and Apsley IF-2) were recorded during the archaeological survey within 20 metres of one another in a disturbed context as part of the Aboriginal Cultural Heritage Assessment (ACHA, Premise 2022) attached at **Appendix D**. The ACHA concludes that there will be no impacts or loss of harm to Aboriginal sites or places during the proposed works. Both sites are located outside of the impact area and will remain insitu with exclusion zones implemented around both of them to avoid impacts. Furthermore, there will be no impact to the cultural heritage values of the broader area. The study area has been assessed as having nil-low archaeological sensitivity.

LAND AND SOIL

The site contains Bodangora and Nanima soil landscapes, categorised as Class 3 and Class 6 land and soil capability. The Bodangora soil landscape/Class 3 land and soil capability land is mapped as Biophysical Strategic Agricultural Land (BSAL) under Chapter 2 of *State Environmental Planning Policy (Resources and Energy) 2021* (the Resources SEPP).

The Agricultural Land Utility Assessment (ALUA; Cadeema 2022) attached at **Appendix E** concludes that whilst the soils on this site are not particularly vulnerable to soil structural decline or erosion, there is potential for adverse soil impacts to occur. These impacts can be ameliorated through a range of measures recommended in the ALUA.

It is also determined in the ALUA that the portion of the site having BSAL is in fact substantially less than that which is mapped under the Resources SEPP. The loss of the confirmed area of BSAL is acceptable on the grounds that it is narrow (one kilometre in width), represents approximately 0.002% of the mapped Class 3 land in the DRC LGA, the land would be capable of being returned to agricultural activities following cessation of the use of the site for a BESS and the development doesn't fragment or alienate existing agricultural lands.

Furthermore, land within the locality is highly fragmented (LEP minimum lot size is 400 hectares). The site could be sold under current conditions however it would not be viable for independent use for agricultural purposes given its limited area of 18.34 hectares. Finally, the site is located within the Central West and Orana Renewable Energy Zone and is therefore strategically identified for the purposes of providing electricity generating infrastructure.

BIODIVERSITY

The site is currently used for grazing modified pastures and residential and farm infrastructure. There is no existing mapped native vegetation within or proximate to the site. Nevertheless, a Biodiversity Development Assessment Report (BDAR; Premise 2022; refer to **Appendix G**), concluding that the site is dominated by exotic grasses Cocksfoot (*Dactylis glomerata*) and Paspalum (*Paspalum dilatatum*). However, native species Queensland Bluegrass (*Dichanthium sericeum*), Red Grass (*Bothriochloa macra*) and Common Couch (*Cynodon dactylon*) were also prevalent. Native Windmill Grass (*Chloris truncata*) was present in small patches. *Oxalis perennans* was the only other native species noted. Two High Threat Weeds were recorded including Great Brome (*Bromus diandrus*) and Paspalum (*Paspalum dilatatum*). Many of the threatened fauna species identified by BAM-C as potentially occurring on the site were eliminated from consideration due to the absence of suitable habitat.

The BDAR concludes that the development will result in the loss of 0.03 ha of native vegetation to provide safe access to the site from the highway. The native vegetation does not provide habitat for any threatened flora or fauna and does not require offsetting under the Biodiversity Offsets Scheme.

TRAFFIC AND ACCESS

A Traffic Impact Assessment (TIA; Traffic Works 2021) is provided at **Appendix I**. It includes an assessment of sight distance, turn provisions, the Mitchell Highway / site access intersection, access location and operation, queueing and parking based on estimated peak traffic generation during the construction phase. It concludes that the proposed access point provides compliant sight distances, the setback of the security fence is sufficient to ensure queued vehicles do not impact traffic and parking provision adequate to accommodate construction and operation traffic. It is also concluded that provision of a rural Basic Left (BAL) type treatment is not necessary given the intention to require all construction vehicles to enter and exit the site via a left turn movement. This avoids conflict with other vehicles on the road network and would not lead to any significant impacts.

NOISE AND VIBRATION

The Noise and Vibration Impact Assessment (NVIA; Assured Environmental 2022) provided at **Appendix K** includes an assessment of construction noise, operational noise, road traffic noise and vibration impacts. It concludes that predicted noise levels at all receptors are compliant with relevant standards during the construction and operation phase, subject to the implementation of an acoustic wall as recommended in the NVIA.

The NVIA concludes that the road traffic noise during the operational phase will be negligible. Whilst traffic will be greater during the construction phase, predicted noise levels are compliant with relevant standards for all potential routes. Predicted vibration impacts are also compliant with the relevant standards during the construction and operation phase.

VISUAL IMPACTS

A Visual Impact Assessment (VIA; IRIS 2022) has been prepared as part of this application and is attached in **Appendix J**. It includes an assessment of public domain views and views from nearby private dwellings.

With respect to public domain views, five viewpoints are assessed. The view impact of the proposed development from each of the five locations in the public domain is determined to be negligible or low in the

short term, with the exception of Viewpoint 3 which is determined to be moderate and negligible in the medium to long term.

With respect to private dwelling views, the VIA concludes that the development will not impact views from existing dwellings to the north, west or south of the site. There is potential for impact to a planned house at 9091 Mitchell Highway and to an existing house at 9092 Mitchell Highway.

Impacts to the planned house at 9091 Mitchell Highway (not yet submitted to Council or a certifier) are likely to be minor give the future dwelling would likely have living and entertaining areas orientated to the north to maximise views towards the Bell River valley and the Catombal Range, away from the highway (away from the proposal). Impacts to the existing house at 9092 Mitchell Highway and from the public domain are mitigated by the proposed 20 metre-wide screening vegetation along the northern side of the external security fence and western side boundary and five metre-wide screening vegetation along the western and southern side of the external security fence, located within the project site.

TECHNOLOGICAL HAZARDS

A Preliminary Hazard Analysis (PHA; Riskcon Engineering 2022) has been prepared as part of this application and is attached in **Appendix L**. It provides an assessment of potential hazards including Li-ion battery fault, thermal runaway and fire, Li-ion battery fire and toxic gas dispersion, electrical equipment failure and fire, transformer internal arcing, oil spill, ignition and bund fire, transformer electrical surge protection failure and explosion and electromagnetic field impacts. It concludes that the risks at the site boundary are not considered to exceed the acceptable risk criteria; hence, the project would only be classified as potentially hazardous.

SOCIAL IMPACTS

A Social Impact Assessment (SIA; Mara 2022) has been prepared as part of this application and is provided at **Appendix M**. The SIA provides an assessment of the social impacts of the proposed development during the construction, operation and decommissioning phases, categorised as *way of life, community, accessibility, culture, health and wellbeing, surroundings, livelihoods* and *decision-making systems* impacts. It concludes that the proposed development will have pre-mitigation impacts negative impacts ranging between low and medium and positive impacts ranging between low and high. Post-mitigation negative impacts are reduced whilst positive impacts are retained.

Environmental Management and Monitoring

Throughout construction, management measures will be implemented through the adoption of a construction environmental management plan, which will consist of a range of supporting studies, including but not limited to the following:

- Traffic Management Plan
- Bushfire Management Plan
- Construction Noise and Vibration Management Plan
- Landscape Implementation Plan
- Soil and Water Management Plan
- Emergency Response Plan
- Community Engagement Plan
- Waste Management Plan
- Incident Management Procedures

Operation and monitoring of the facility would be governed by an adopted operational environmental management and monitoring plan that would clearly identify any residual matters requiring ongoing attention during operation, with particular emphasis on bushfire management, risk management, landscape

implementation and monitoring and ongoing noise monitoring to ensure ongoing compliance with adopted criteria.

The site is expected to operate for a period of approximately 30 years, after which it would be decommissioned, in accordance with the measures outlined in a decommissioning management plan.

Justification

The assessments presented in the EIS indicate that the proposed Apsley BESS should be approved on the basis that it provides a range of benefits to the local region, the region, the state and the country, in the context of meeting renewable energy targets.

The technical studies supporting the EIS confirm that the proposed development would not lead to any significant or detrimental impacts to the environment and that residual impacts are manageable through the implementation of standard measures.

The Proposal is consistent with the objects and matters for consideration in the EP&A Act and with the principles of Ecologically Sustainable Development.

The Project will contribute to the provision of renewable energy in NSW and facilitate private investment in the state's electricity system over the next decade and beyond, a key consideration of the NSW Electricity Strategy. The BESS has an anticipated lifespan in the order of 20 years and will contribute to the NSW Government's three objectives for the electricity system: reliability, affordability and sustainability.

The project would support the electricity supply market shift from a centralised power generation system, overly reliant on fossil fuels, to a dispersed and smaller scale system. The project provides firming capacity to the market by filling supply gaps when renewable energy sources are not producing, a particularly important outcome within the renewable energy zone.

The EIS concludes that the Proposal would not significantly affect environmental, cultural, social and economic values at the local or regional scale and is therefore considered to be in the public interest.

The Project has been sited and designed to minimise environmental impacts, where impacts cannot be avoided, mitigation measures have been proposed.

1. INTRODUCTION

1.1 Overview

Premise has been commissioned by ACEnergy (the Applicant) to prepare an Environmental Impact Statement (EIS) to support a State Significant Development Application (SSDA) for an approximately 120 Megawatt AC (MW_{AC}), 240 Megawatt Hours (MWh) Battery Energy Storage System (BESS) and associated works. The site is in the Dubbo Regional Council (DRC) Local Government Area (LGA) (former Wellington LGA) within the Central West-Orana Renewable Energy Zone, approximately ten kilometres south of the town of Wellington (refer to **Figure 1**). The project is to be known as the Apsley BESS.

The BESS development and associated works are to occur over Lot 3 DP1012686 and Lot 107 DP756920, as well as the crown road separating the two lots (hereafter referred to as '**the site**'). The site forms part of 9010 Mitchell Highway, Apsley NSW 2820 (hereafter referred to as '**the landholding**'). The site has an area of approximately 18.34 hectares and the proposed project has a development area of approximately 6 hectares.

As described in **Section 2.5** of this report, the project area is located in the north-western portion of the site. The facility will include battery containers, MVPS containers, site facility containers, 132/33kV transformers, control room, inbuilt HV switchgear, switching station, overhead powerline connection to the existing overhead transmission lines running north-south in Lot 107 DP756920, security fence around the perimeter of the facility and landscape screening around the security fence. Proposed landscape screening includes:

- Four rows along the northern side of the security fence (within the property);
- Two rows along the western and southern side of the security fence (within the property); and
- Approximately 20 metre-deep tree planting zone for a length of 150 metres along the Mitchell Highway boundary, including native tree species to match roadside planting character north of the site.

This EIS follows a Scoping Report prepared by Premise, submitted to the Department of Planning and Environment (DPE) on 28 January 2022. This EIS has been prepared pursuant to Part 5, Division 5.1, Subdivision 3 of the *Environmental Planning and Assessment Act 1979* (the EP&A Act), Part 8, Division 2 of the *Environmental Planning and Assessment Regulation 2021* (the EP&A Regulation), *State Significant Development Guidelines – Preparing an Environmental Impact Statement* (DPIE 2021) and SEARs issued by DPIE on 3 March 2022 in response to the Scoping Report (refer to **Appendix A**).

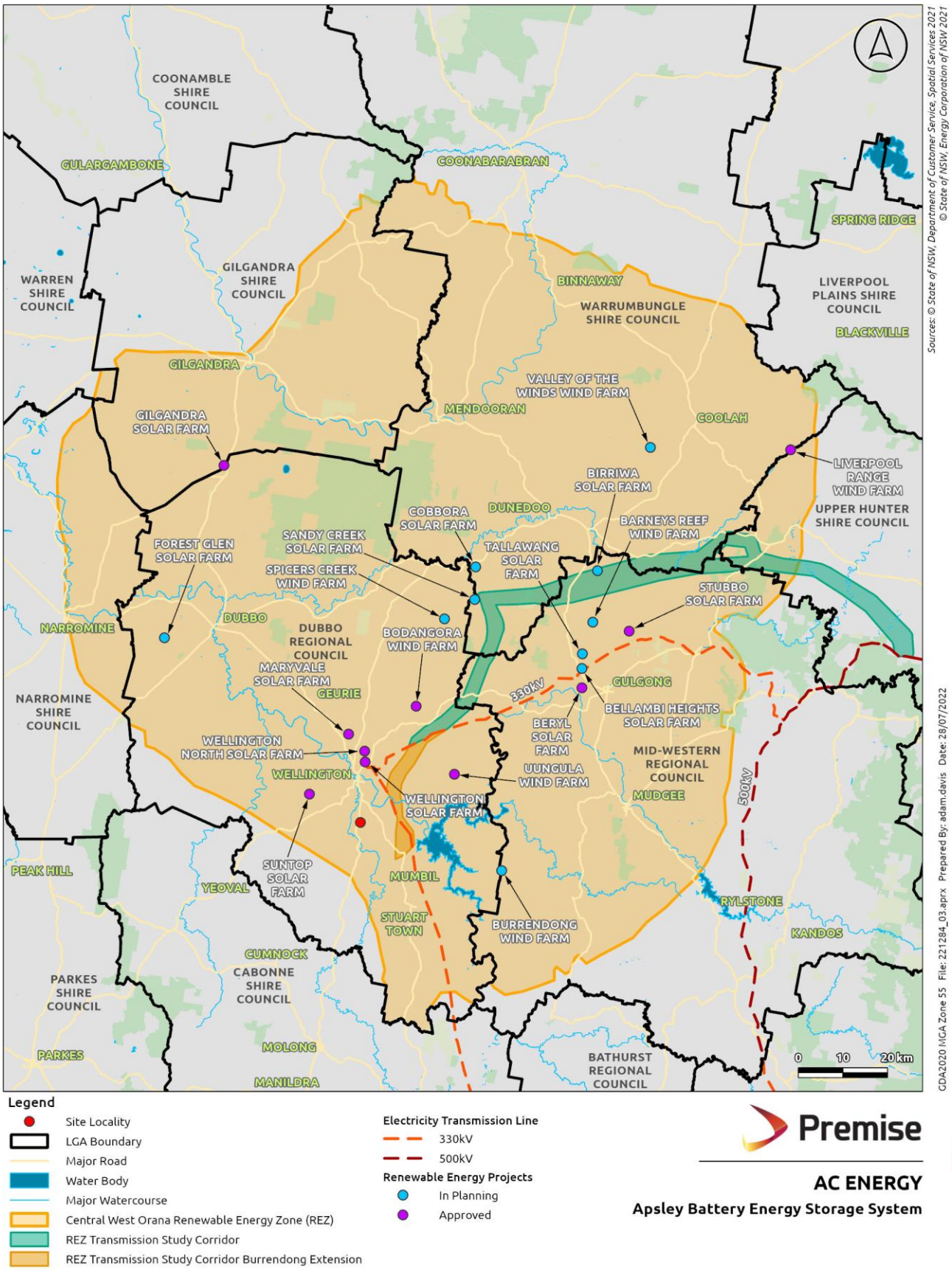
1.2 The Applicant

The proponent for the Apsley BESS is ACEnergy Pty. Ltd (ABN: 89 628 883 447). The address of ACEnergy is Suite 502, 689 Burke Road, Camberwell VIC 3124. ACEnergy specialises in Renewable Energy Development and Engineering Procurement and Construction (EPC).

Their solution includes but is not limited to Site Acquisition, Development Application, Engineering Design, Grid Studies, Connection Application, Procurement Arrangement, International and Domestic Logistics, Civil, Mechanical and Electrical installation, HV Switching, SCADA control, and full Project Management from project planning to practical completion and handover.

ACEnergy has delivered a number of solar farm projects, predominantly in Victoria. These include solar farms at Stanhope, Girgarre, Numurkah, Katamatite, Echuca, Robinvale and Derby. ACEnergy has recently received approval from the Victorian Department of Environment, Land, Water and Planning (DELWP) for two BESS sites in the Barwon South West Region of Victoria, including one 100MW BESS and one 250MW BESS.

Figure 1 – Regional Context



1.3 Background

Review of DRC's DA tracker did not find any approvals pertaining to the site. Besides the Scoping Report which precedes this EIS, no other approvals are known to apply to the site.

1.4 Planning Framework

The proposed BESS is consistent with the definition of 'electricity generating works', defined under the applicable LEP, the *Dubbo Regional Local Environmental Plan 2022* (the DLEP 2022) as:

> *a building or place used for the purpose of—*
>
> *(a) making or generating electricity, or*
>
> *(b) electricity storage.*

Under the DLEP 2022, development for the purposes of electricity generating works is prohibited in the RU1 Primary Production zone in which the site is located. Nevertheless, the development is permitted with consent on the following grounds:

- Under clause 2.7(1) of *State Environmental Planning Policy (Transport and Infrastructure) 2022* (the Infrastructure SEPP), where there is an inconsistency between the Infrastructure SEPP and another environmental planning instrument, the Infrastructure SEPP prevails (with few exceptions, none of which are relevant to this application); and
- Clause 2.36(1)(b) of the Infrastructure SEPP provides that electricity generating works may be carried out by any person with consent in a prescribed rural, industrial or special use zone (the RU1 Primary Production zone is a prescribed rural zone).

The proposed development is State Significant Development (SSD) on the following grounds:

1. Section 4.36(2) of the EP&A Act provides that a State Environmental Planning Policy (SEPP) may declare any development, or any class or description of development, to be SSD.
2. Section 2.6(1) of *State Environmental Planning Policy (Planning Systems) 2021* (the Systems SEPP) provides that development is declared to be State significant for the purposes of the EP&A Act if:
   a. the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the EP&A Act; and
   b. the development is specified in Schedule 1 or 2 of the SEPP.

In relation to 2(a) above: The proposed development satisfies Section 2.6(1)(a) of the Systems SEPP on the grounds that it is permitted with consent under Section 2.36(1)(b) of the Infrastructure SEPP.

In relation to 2(b) above: The proposed development satisfies Section 2.6(1)(b) of the Systems SEPP on the grounds that it is for the purposes of electricity generating works that has a capital investment value of more than $30 million in accordance with clause 20 of Schedule 1 of the SEPP.

The applicable statutory context is considered in greater detail in **Section 4**.

1.5 Related Development

A review of the Dubbo Regional Council DA tracker confirms no other consents applying to the land.

1.6 Restrictions or covenants

No restrictions or covenants are known to affect the site.

1.7 Report Structure

In accordance with the *State Significant Development Guidelines – Preparing an Environmental Impact Statement* (DPIE 2021), this EIS has been prepared and is provided in the following format.

- **Section 1** of this report sets the context for detailed assessment of the project in the following sections of the EIS and includes a description of the applicant, the project, the background to the project, any related development and any restrictions or covenants that apply to the site.
- **Section 2** of this report provides the strategic context and includes any supporting strategies, policies or plans, key features of the site and surrounds, likelihood of generating cumulative impacts any agreements entered into with other parties.
- **Section 3** outlines the proposed development, including the project area, physical layout and design, uses and activities and timing.
- **Section 4** details the statutory context relevant to the justification and evaluation of the project.
- **Section 5** identifies the key stakeholders for the project and describes what actions were taken with respect to community engagement in accordance with *Undertaking Engagement Guidelines for State Significant Projects* and SEARs.
- **Section 6** identifies the impacts of the proposed development, including the condition of the existing environment, the ability to avoid, mitigate and/or offset the impacts of the development, the scale and nature of the predicted impacts, key uncertainties associated with the assessment and proposed measures to deal with these uncertainties.
- **Section 7** provides the justification for the proposed development, including impact avoidance or minimisation measures, consistency with the strategic context, compliance with any relevant statutory requirements, outcomes of community engagement, the scale and nature of the impacts of the project, how compliance will be monitored and how key uncertainties will be addressed.

2. STRATEGIC CONTEXT

2.1 Policy

2.1.1 NSW ELECTRICITY STRATEGY (NSW GOVERNMENT 2019)

The NSW Electricity Strategy 2019 is a state-wide plan to ensure a reliable, affordable and sustainable electricity future. The purpose of the NSW Electricity Strategy is to:

> *Improve the efficiency and competitiveness of the NSW electricity market and encourage investment in new price reducing generation and energy saving technology.*

The strategy is underpinned by the following four important principles:

- *New market-driven electricity generation should drive down prices and help protect the environment. This is because firmed renewables are the cheapest form of new reliable generation and cheaper than the current wholesale price*

- *As electricity is an essential service, state and Commonwealth governments are ultimately responsible for reliable electricity*
- *Government action should limit costs to households, businesses and taxpayers*
- *Government action should be consistent with the nature of the national electricity system and NSW policy objectives.*

In relevance to meeting the State's Energy Security Target the Electricity Strategy also states that:

> *NSW is projected to experience its tightest reserve conditions in 2023-2024 after the Liddell power station closes in April 2023.*

The proposed BESS project supports the objectives of NSW Electricity Strategy, improving the reliability and affordability of electricity through its ability to balance electrical supply and demand. Large-scale energy storage is a core component of the NSW Electricity Strategy due to its ability to enhance the dispatchability of renewable energy generation and provide firming capacity to the broader NSW market.

2.1.2 NSW ELECTRICITY INFRASTRUCTURE ROADMAP (DPIE 2020)

The NSW Electricity Infrastructure Roadmap 2020 is a state-wide plan to transition the existing electricity sector to be cheaper, cleaner and more reliable. Enabled by the Electricity Infrastructure Investment Act 2020 (NSW) the roadmap compliments the objectives of the NSW Electricity Strategy 2019 through planning a reliable affordable and sustainable electricity future. The roadmap builds on the NSW Transmission Infrastructure Strategy 2018 and supports the implementation of the Australian Energy Market Operators Integrated System Plan, setting out a plan to deliver five Renewable Energy Zones (REZ) in the Central-West Orana, New England, South-West, Hunter-Central Coast and Illawarra regions. Establishing REZ's will be vital for delivering affordable and reliable energy generation, helping to replace the states existing power stations as they reach the end of their operation and scheduled closure.

The roadmap identifies five foundational pillars:

1. Driving investment in regional NSW: supporting our regions as the State's economic and energy powerhouse.
2. Delivering energy storage infrastructure: supporting stable, long-term energy storage in NSW.
3. Delivering Renewable Energy Zones: coordinating regional transmission and renewable generation in the right places for local communities
4. Keeping the grid secure and reliable: backing the system with gas, batteries or other reliable sources as needed.
5. Harnessing opportunities for industry: empowering new and revitalised industries with cheap, reliable and low emissions electricity.

The NSW Government is in the early development phase for the State's first REZ in the Central-West Orana region, around Dubbo and Wellington on the land of the Wiradjuri, Wailwan and Kamilaroi people in which the site is located (refer to **Figure 1**). The Central-West Orana REZ, expected to be shovel-ready by the end of 2022, will unlock a significant pipeline of large-scale renewable energy and storage projects delivering up to 3,000 MW of new network capacity by the mid-2020s, powering up to 1.4 million homes while supporting up to $5.2 billion of private sector investment and around 3,900 construction jobs.

The NSW Government chose the Central-West Orana region because the region benefits from relatively low transmission build costs due to its proximity to the existing backbone transmission network. It also has a strong mix of energy resources and there is significant investor interest.

2.1.3 ENERGY SECURITY SAFEGUARD (NSW GOVERNMENT) 2020

The Energy Security Safeguard is part of the NSW Electricity Strategy and legislation to establish the Safeguard was passed by Parliament in May 2020 with an objective to improve the affordability, reliability and sustainability of energy through the creation of financial incentives for energy activities.

Under the Electricity Supply Amendment (Peak Demand Reduction Scheme) Regulation 2021, the Government will establish a new Peak Demand Reduction Scheme (PDRS) to support activities that reduce demand at peak times, including flexible demand response.

Coupled with the Energy Saving Scheme (ESS), the PDRS is expected to deliver a net economic benefit for New South Wales of $1.2 billion.

The proposed BESS project supports the objectives of the Energy Security Safeguard by providing capacity to reduce peak demand during summer periods and assists NSW in meeting its peak demand reduction targets, especially with the scheduled closure of Liddell Power Station in 2023.

2.1.4 CENTRAL WEST AND ORANA REGIONAL PLAN 2036 (DPE 2016)

The Central West and Orana Regional Plan 2036 is the NSW Government's strategy for guiding land use planning decisions for the Orana Region for the next 20 years. The plan sets the vision for the region as *The most diverse regional economy in NSW with a vibrant network of centres leveraging the opportunities of being at the heart of NSW*. The vision is supported by four regionally focussed goals and associated directions. The following directions are relevant to the proposed development:

- *Goal 1 – The most diverse regional economy in Australia*
  - *Direction 9 – Increase renewable energy generation*
  - *Direction 12 - Plan for greater land use compatibility*
- *Goal 2 – A stronger, healthier environment and diverse heritage*
  - *Direction 13 – Protect and manage environmental assets*
  - *Direction 15 – Increase resilience to natural hazards and climate change*
  - *Direction 16 – Respect and protect Aboriginal heritage assets*
- *Goal 3 – Quality freight, transport and infrastructure networks*
  - *Direction 21 – Coordinate utility infrastructure investment*
- *Goal 4 – Dynamic, vibrant and healthy communities*
  - *Direction 23 – Build the resilience of towns and villages*

The project supports renewable energy generation in the region and is considered to be generally consistent with Goal 1, and particularly Direction 9, of the Regional Plan.

2.1.5 DUBBO LOCAL STRATEGIC PLANNING STATEMENT (DRC 2020)

In accordance with Section 3.9 of the EP&A Act, the DRC adopted the Dubbo Local Strategic Planning Statement (LSPS) in June 2020. It establishes 20 Planning Priorities under the themes of Infrastructure, Economy, Housing, Liveability and Sustainability. The following are relevant to the proposed development:

- *Planning Priority 1: Plan for the delivery of infrastructure to support growth*
- *Planning Priority 3: Promote renewable energy generation*
- *Planning Priority 18: Develop resilience to climate change*
- *Planning Priority 19: Create an energy, water and waste efficient city*

The project will support planning priorities 1, 3, 18 and 19 through the provision of improved resilience and reliability within the energy network.

2.2 Regional Context

As shown in **Figure 1**, the site is located approximately 10 kilometres to the south of the town of Wellington in the Central-West REZ. Wellington is one of the two major population centres within the DRC LGA. As per the 2016 census, it has a population of 4,519 persons as compared to Dubbo's 33,339. People residing in the town of Wellington are employed across a range of industries, with the community and personal services workers sector being the largest employment industry.

The site connects to Wellington via the Mitchell Highway which runs from Bathurst (150 kilometres to the south-east) via Orange (90 kilometres to the south), Molong (55 kilometres to the south), Wellington (ten kilometres to the north of the site), Dubbo (60 kilometres to the north-west) and Bourke (430 kilometres to the north-west) to southern Queensland.

Numerous renewable energy projects are under various stages of development within the REZ in response to government investment in the area, presence of existing infrastructure and natural attributes of the land which make it suitable to electricity generation from renewable sources. These include:

- Proposed Mumbil Solar Farm, a 140 MW solar farm, to be located on land to the west of the village of Mumbil, approximately 7 km from the Apsley BESS site. The Mumbil Solar Farm has had SEARs issued and an EIS is currently under preparation.
- Suntop Solar Farm, a 189 MW solar farm to be located on land south of Suntop Road, approximately 13 km from the subject site. The Suntop Solar Farm has received development approval and construction is (in November 2021) complete. Commissioning activities are currently taking place.
- Suntop Solar Farm Stage 2, a 165 MW solar farm to located on land to the west of the Suntop Solar Farm. The project has had SEARs issued and is currently in the prepare EIS phase.
- Uungula Wind Farm proposes the development of up to 97 wind turbines, generating approximately 400 MW of energy, and including a 150 MW (150 MWhour) BESS. The Uungula Wind Farm is located on land to the west of Wellington and approximately 17 km from the subject site. The project is approved, and construction is expected to commence in early-mid 2022.
- Wellington South BESS is a proposed 500 MW (1000 MWhours) BESS to be located on land north of Wellington (approximately 12 km from the subject site). The Wellington BESS has received SEARs and is currently in the prepare EIS phase.
- Wellington Solar Farm, a 200 MW solar farm at Goolma Road, Wuulman, located approximately 12 km from the subject site. Approval for the project has been received and construction commenced in December 2019.

- Wellington North Solar Farm, a 400 MW solar farm to be located adjacent to the Wellington Solar Farm. The project has been approved and construction is due to begin shortly. Wellington North Solar Farm is located approximately 14 km from the subject site.

2.3 Local Context

As shown in **Figure 2**, the site's local context comprises predominantly agricultural land used for grazing modified pastures and grazing native vegetation. Other major land uses in the locality include the Wellington Caves, Osawano Japanese Gardens and Wellington Golf Club approximately four kilometres to the north-west of the site respectively.

Approximately nine (9) non-associated residential receivers are located within two kilometres of the project site. The closest developed non associated receiver is approximately 400 metres to the north. Intervening land is currently in use for grazing purposes. There are no other large scale land uses in the immediate locality.

The Apsley BESS site is well separated from sensitive natural features such as rivers or other forms of sensitive landscape. As noted, the surrounding environment contains limited surrounding infrastructure, generally limited to the adjacent Mitchell Highway and the adjacent 132 kV electricity transmission line.

The site is adjacent to an unconstructed Crown road reserve, which will be crossed by the proposed connecting electricity transmission line. Initial contact with NSW Crown Lands has occurred to confirm application submission landowner approval and ongoing licence requirements (refer to **Section 5**).

2.4 Site Description

2.4.1 OVERVIEW

As shown in **Figure 3**, the site has a rectangular shape with a frontage of 404.21 metres to Mitchell Highway and depth of 451 metres for a total area of 18.34 hectares. The site has undulating topography with local highpoint at 392 metres in the south-eastern corner and low point at 365 metres in the north-western corner.

No access points are available directly into the site from the Mitchell Highway under current conditions. The site is currently used for grazing and cropping. A single dwelling house is located in the northern portion of Lot 2 DP 1012686 and a shed in the eastern portion of Lot 3 DP 1012686. A north-south electrical easement runs to the east of the site. There are no existing approvals applying to the site.

Two Exploration and Mining Titles apply to the site, held by Colossus Metals Pty Ltd and Silver City Minerals Ltd. There are no known existing Aboriginal Sites within the site. Nearest groundwater boreholes indicate a standing water level of 20 metres. No watercourses are present within the site, other than an isolated farm dam in the north-eastern corner. Land and soil capability varies between Class 3 and 6.

No native trees or shrubs are present on the site. The land is not impacted by bushfire prone land.

2.4.1 ACCESS

The site does not have access under existing conditions to the Mitchell Highway (Classified Road 7) which runs from Bathurst (approximately 150 kilometres to the south-east) via Orange (approximately 90 kilometres to the south), Molong (approximately 55 kilometres to the south), Wellington (approximately ten kilometres to the north of the site), Dubbo (approximately 60 kilometres to the north-west) and Bourke (approximately 430 kilometres to the north-west) to southern Queensland.

Figure 2 – Local Context

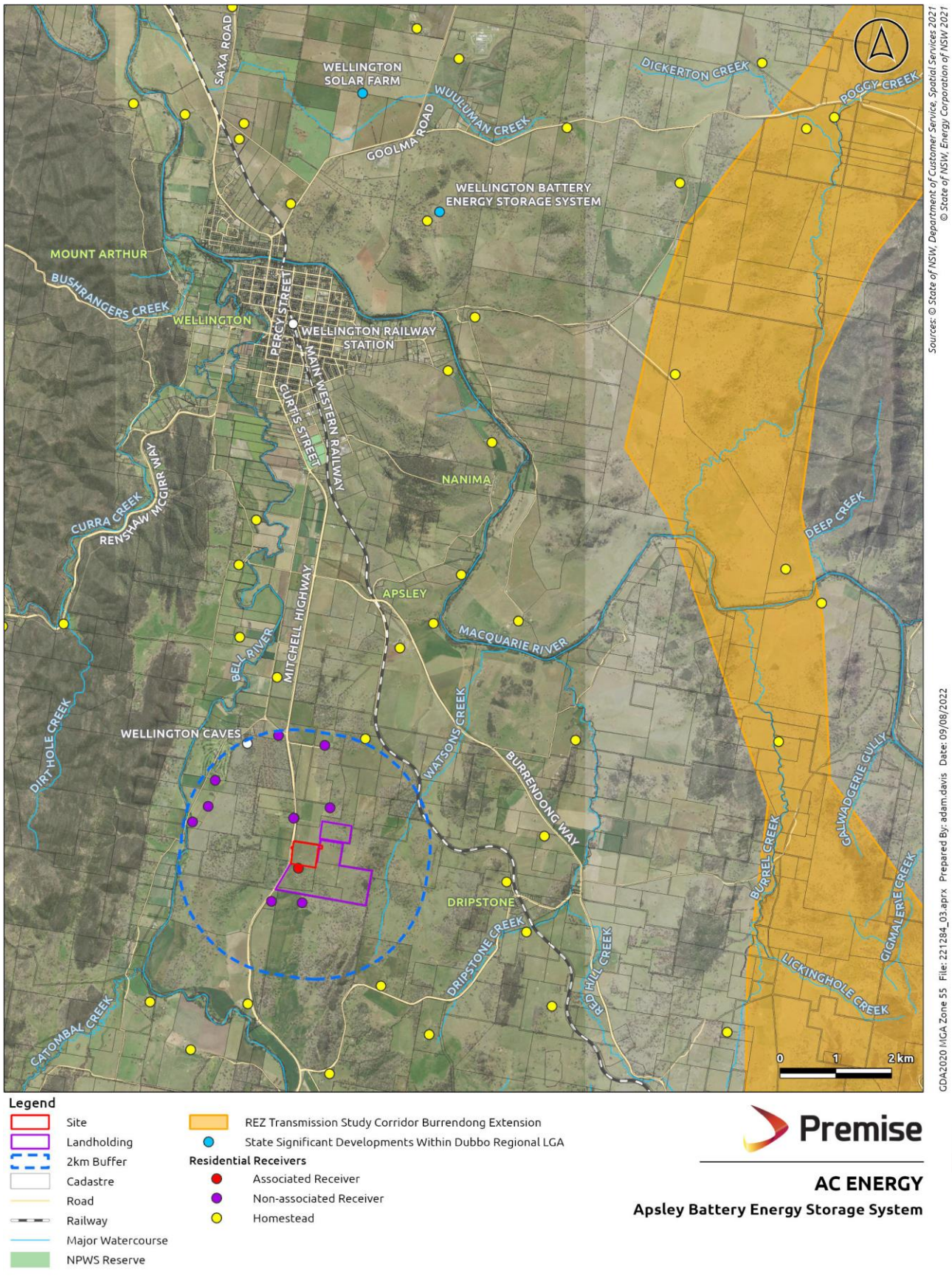
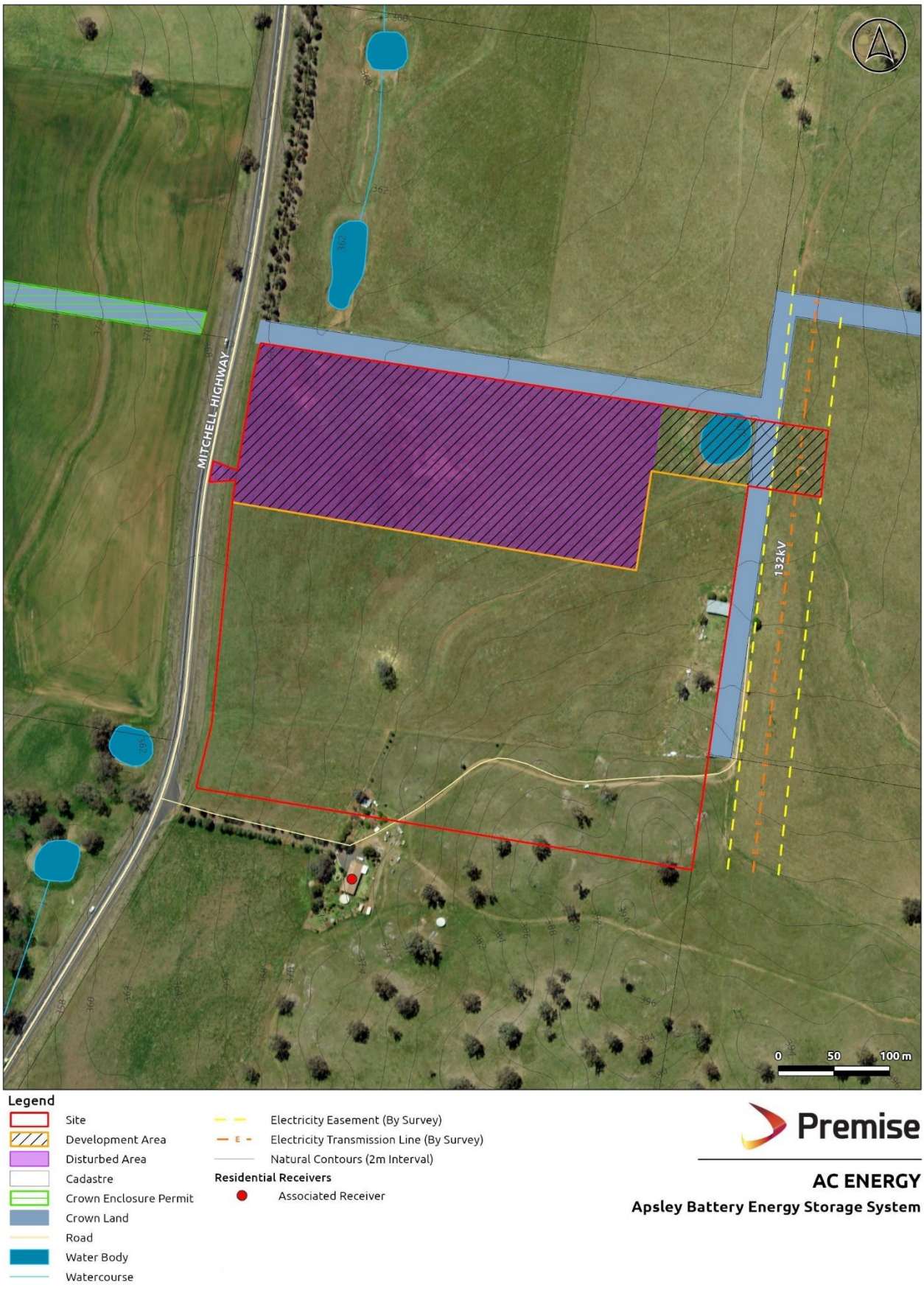


Figure 3 – Site analysis and proposed development



In the vicinity of the site, the Mitchell Highway runs north-south along the site's western frontage with a single lane in both directions and a sign posted speed limit of 100 km/hour in the vicinity of the site. Under current conditions, no access directly into the site is available from the Mitchell Highway. Access to the site under current conditions is via a 160 metre-long driveway leading to the dwelling house in Lot 2 DP 1012686 which forms part of the landholding.

DRC is the roads authority for Mitchell Highway, noting that some of the maintenance functions of the roads authority are adopted by Transport for NSW (TfNSW) due to the classified road status.

2.4.2 EXISTING IMPROVEMENTS

As shown in **Figure 3**, the site is vacant with the exception of farm structures located along the site's eastern boundary, associated with the single storey dwelling house in Lot 2 DP 1012686. A 132kV transmission line runs in a north-south alignment to the east of Lot 3, traversing Lot 107.

2.4.3 MINING AND EXPLORATION

The site is not located within a Mine Subsidence District. However, as shown in **Figure 5**, the site is located at the intersection of two NSW Exploration and Mining Titles, including:

- EL8735 over the eastern portion of the site, held by Colossus Metals Pty Ltd; and
- EL8971 over the western portion of the site, held by Silver City Minerals Ltd.

Engagement with both entities is discussed in **Section 5**.

2.4.4 HERITAGE

2.4.4.1 Aboriginal Heritage

As shown in **Figure 6**, AHIMS Basic Search on 30 September 2021 did not identify any Aboriginal Sites or Places within the site. However, four Aboriginal Sites were identified in close proximity including two near Mitchell Highway in 9092 Mitchell Highway adjoining the site to the north (#36-4-0082 and #36-4-0083) and two in 385 Dripstone Road to the east.

An archaeological survey was undertaken by Premise Archaeologist Latisha Ryall accompanied by WVWAC RAP Murray Clines and ACEnergy Pty Ltd Project Development Manager Danny Wilkinson on 1 December 2021. Overall, the study area and site access had been heavily modified through historical cropping and grazing and construction of the Mitchell Highway and road reserve, dense ground coverage and evidence of introduced fills. The survey did not indicate a high potential for archaeological significance in the proposed development area.

During the archaeological survey, two isolated stone artefacts (Apsley IF-1 and Apsley IF-2) were recorded within 20 metres of one another in a disturbed context on exposed areas associated with farm access tracks on a relatively flat landform. Apsley IF-1 (refer to **Figure 7** to **Figure 10**) measured 4 x 5 x 2 mm in size with a tertiary stage of reduction whilst Apsley IF-2 (refer to **Figure 11** to **Figure 14**) measured 13 x 13 x 3 mm in size with a tertiary stage of reduction representing a microlith. Both artefacts had likely been moved from their original location through stock or vehicle movement representing a secondary context. Both artefacts are determined to be located out of the proposed development area.

2.4.4.2 Non-Aboriginal Heritage

As shown in **Figure 6**, the site is not identified as being or adjoining an item of heritage significance or within a heritage conservation area under the WLEP or State Heritage Register. The site is substantially separated from nearest locally listed heritage items as to not cause any impact on their heritage significance. These include:

Figure 4 – Development site and constraints

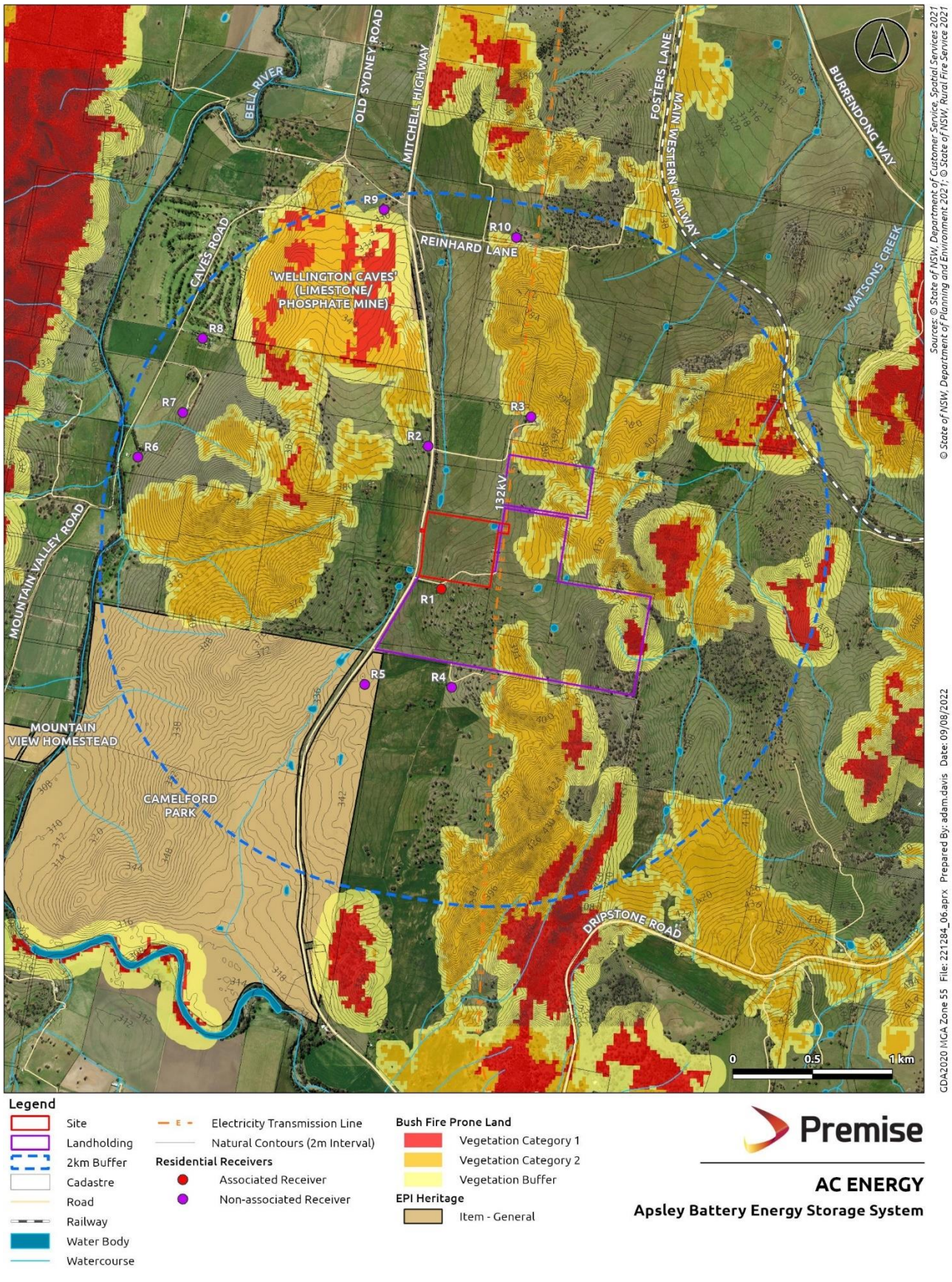


Figure 5 – Exploration and mining titles

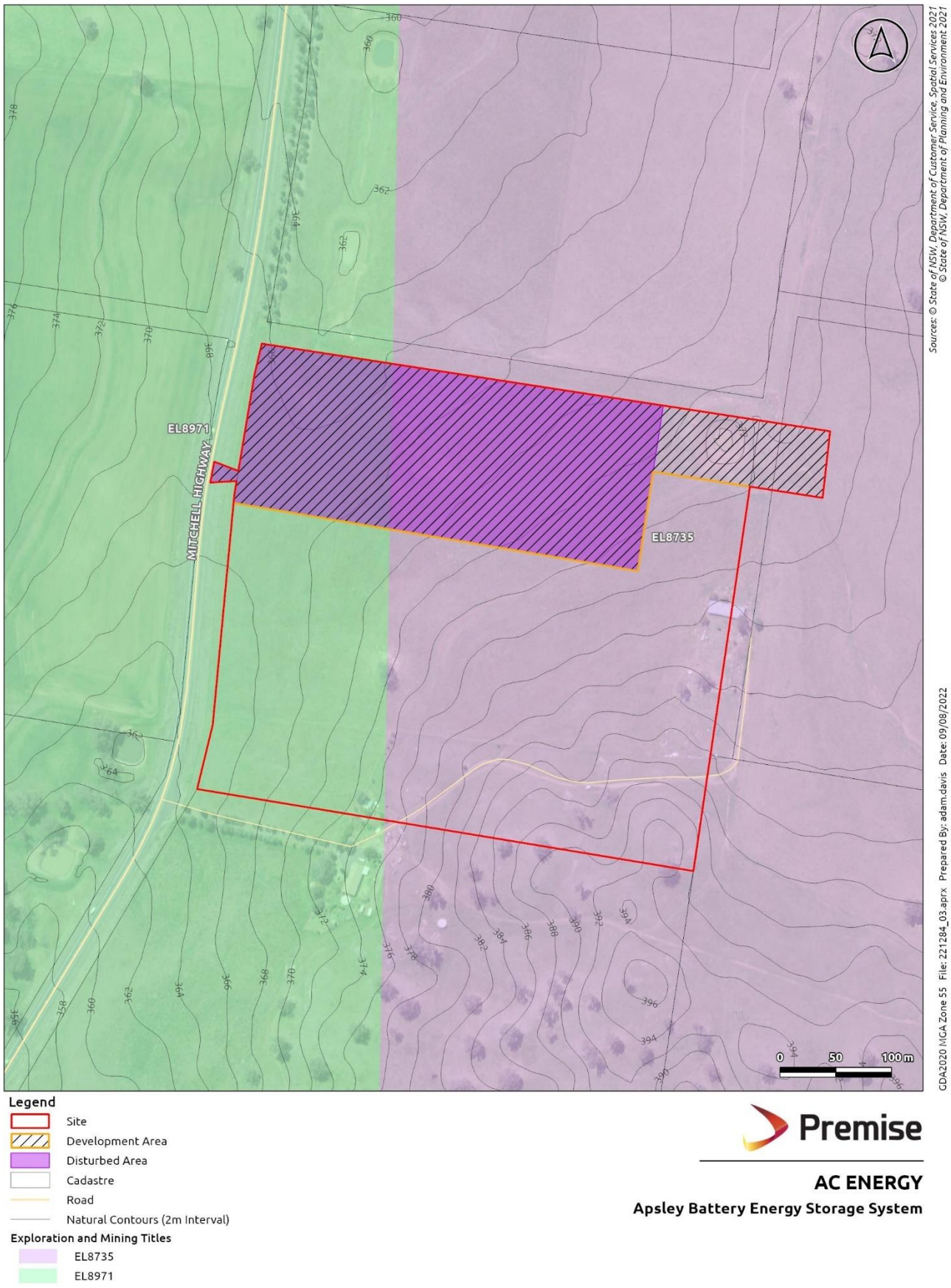


Figure 6 – Heritage

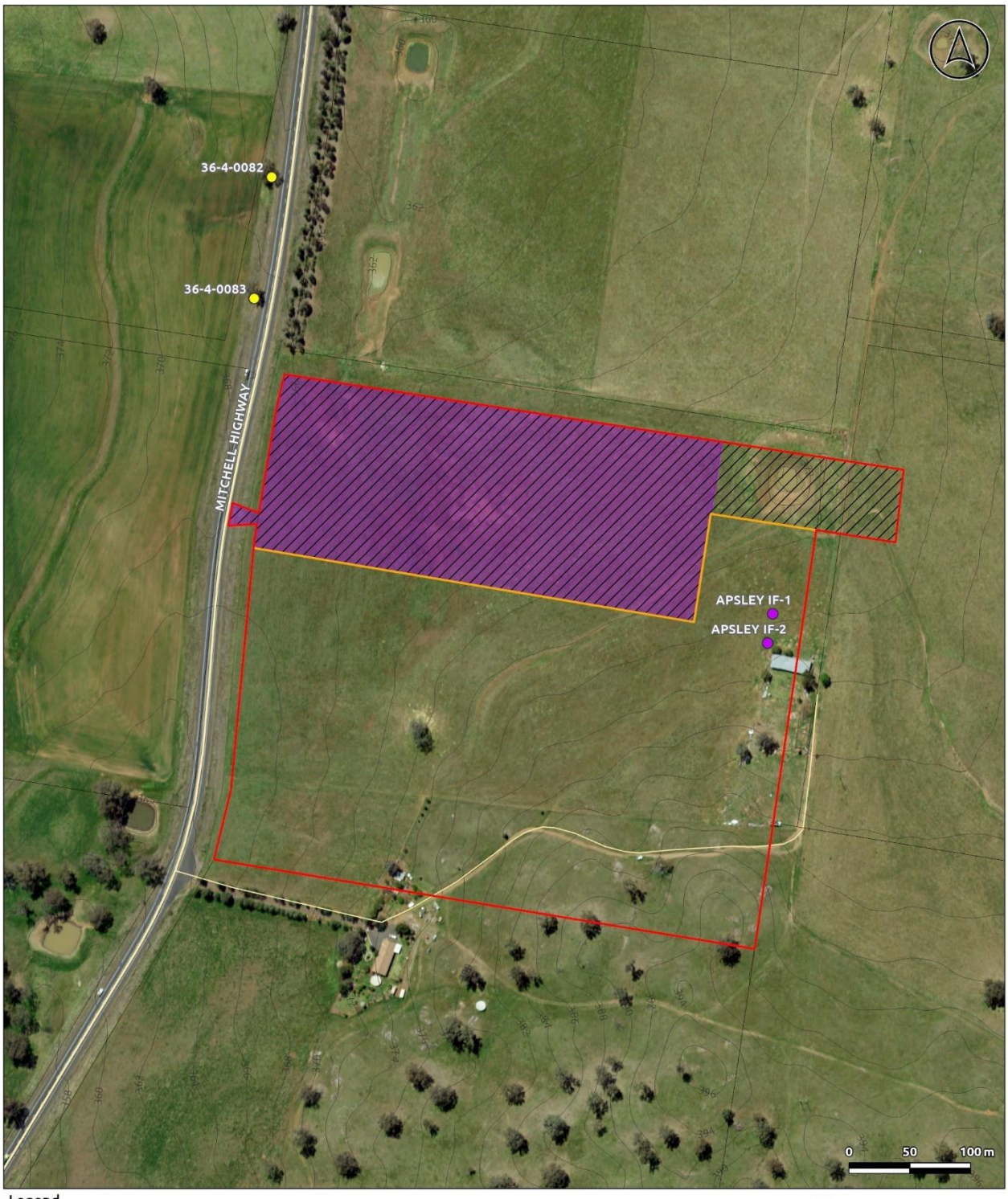


Figure 7 - Apsley IF-1 quartz microlith

Figure 8 - Apsley IF-1 location view north

Figure 9 - Apsley IF-1 location view south

Figure 10 - Apsley IF-1 overview context

Figure 11 - Apsley IF-2 quartz microlith

Figure 12 - Extant Structure view west

Figure 13 - Apsley IF-2 location view east

Figure 14 - Apsley IF-2 location view north

The geology of the entire site is mapped as Ordovician sedimentary and mafic volcanic and volcaniclastic rocks (Osv). The site investigation indicated colluvium derived from Ordovician sedimentary rock along with variable and sporadic Ordovician sedimentary rock fragments and areas of Ordovician sedimentary bedrock outcrops.

- Locally heritage listed I1 "Wellington Caves" (Limestone/ Phosphate Mine) is located at 97 Caves Road, approximately 880 metres to the north of the site;
- Locally heritage listed I67 "Camelford Park" is located at 8745 Mitchell Highway, Neurea, approximately 570 metres to the south of the site (actual house located approximately 2.6 kilometres to the south of the site); and
- Locally heritage listed I68 "Mountain View" homestead is located at 646 Mountain Valley Road, Neurea, approximately 2.3 kilometres to the south-west.

2.4.5 HYDROGEOLOGY

2.4.5.1 Geology

As shown in **Figure 16**, the site is located within the Oakdale Formation, forming part of the Cabonne Group. The Oakdale Formation, formed in the Palaeozoic Era and in the Ordovician system, is described as Basalt, basaltic andesite, latite lava and intrusions, volcaniclastic breccia, conglomerate, sandstone and siltstone, minor allochthonous limestone.

The Agricultural land Utility Assessment (Cadeema 2022; refer to **Appendix E**) includes the following comments with respect to the geology of the site (p. 9):

2.4.5.2 Groundwater

The site is located within the "Groundwater vulnerability" area under clause 7.5 of the DLEP 2022, requiring the consent authority to consider the following before granting development consent:

(a) whether the development, including on-site storage or disposal of solid or liquid waste chemicals, will cause groundwater contamination or an adverse effect on groundwater dependent ecosystems, and

(b) the cumulative impact, including the impact on nearby groundwater extraction for potable water supply or stock water supply, of the development and other existing development on groundwater.

As shown in **Figure 15**, the entirety of the site is mapped as being Moderately High groundwater vulnerability. The nearest groundwater borehole with a known standing water level is GW801235, located approximately 365 metres to the north at 9092 Mitchell Highway. It has a standing water level of 20 metres.

2.4.5.3 Soil Landscape

As shown in **Figure 17** (Murphy & Lawrie 1998):

- The majority of the site is mapped as being within the Bodangora soil landscape, described as follows:
  - Existing land degradation: Slight to moderate sheet erosion and areas of moderate gully erosion, although many of these are now stabilised. A few areas of previously severe gully erosion have been stabilised. The long history of cropping has led to erosion in the past.
  - Erosion hazard: Soils are only slightly to moderately erodible, but slopes are 3 to 10% and relatively long (1000 to 3000 m), so there is a high erosion hazard under cropping, especially if soils are in a cultivated condition and surface cover is low. This is seen in the remnants of severe erosion that has occurred in the past. Soil conservation earthworks and or conservation farming practices are necessary to control erosion.
  - Urban capability: The moderate to high shrink-swell potential of the subsoils of the Euchrozems are the main limitation to urban development.
  - Rural capability: This landscape has highly productive agricultural land with most of the area being Class Ⅱ or Class Ⅲ cropping land. Small areas of Class Ⅳ land are associated with upper slopes and ridges or crests.
- The remainder of the site is mapped as being within the Nanima soil landscape, described as follows:
  - Existing land degradation: Minor to moderate sheet erosion; minor gully erosion.
  - Erosion hazard: Soils are only slightly to moderately erodible, but slopes are 5 to 20% and 300 to 1000 m long. There is a high erosion hazard under cropping, especially if soils are in a cultivated condition and surface cover is low. This is seen in the remnants of severe erosion that has occurred in the past. Soil conservation earthworks and/or conservation farming practices are necessary to control erosion.
  - Urban capability: The moderate to high shrink-swell potential of the subsoils of the Euchrozems are the main limitation to urban development. Rock outcrop and steep slopes may also affect urban land use.
  - Rural capability: Most of the area is only suitable for grazing because of slopes and rock outcrop (Class Ⅳ, Ⅵ). Small areas of footslopes may be used for cropping (Class Ⅱ, Ⅲ).

The Agricultural Land Utility Assessment (Cadeema 2022; refer to **Appendix E**) includes the following with respect to soil types within the site (p. 9):

The soil physical characteristics in the upper 50 cm of the soil profile across the site readily facilitated segregation of the soils into 3 distinct Soil Types. These characteristics include those most likely to influence agricultural production and the growth and function of typical horticultural or agricultural crop roots. Whilst a range of soil physical characteristics were considered (Appendix D - Soil Profile Descriptions), the most pertinent include amount of rock and the depth (thickness), texture, structure and drainage of the topsoil (A Horizon), of the initial (transitional) subsoil (B1 Horizon) and of the main subsoil (B2 Horizon) layers. This facilitated segregation of the soils into the three Soil Types:

Figure 15 – Groundwater vulnerability

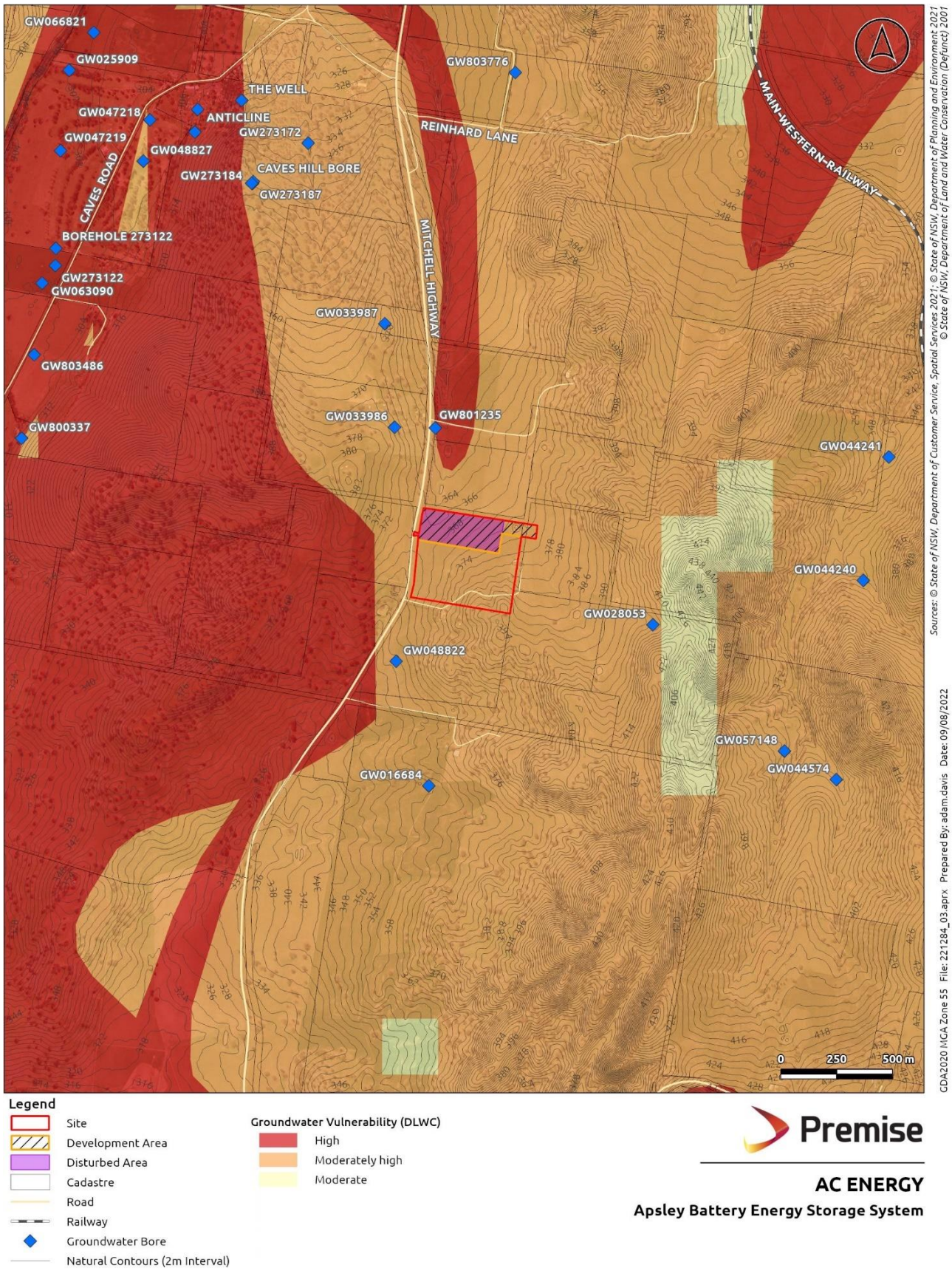


Figure 16 –Geology

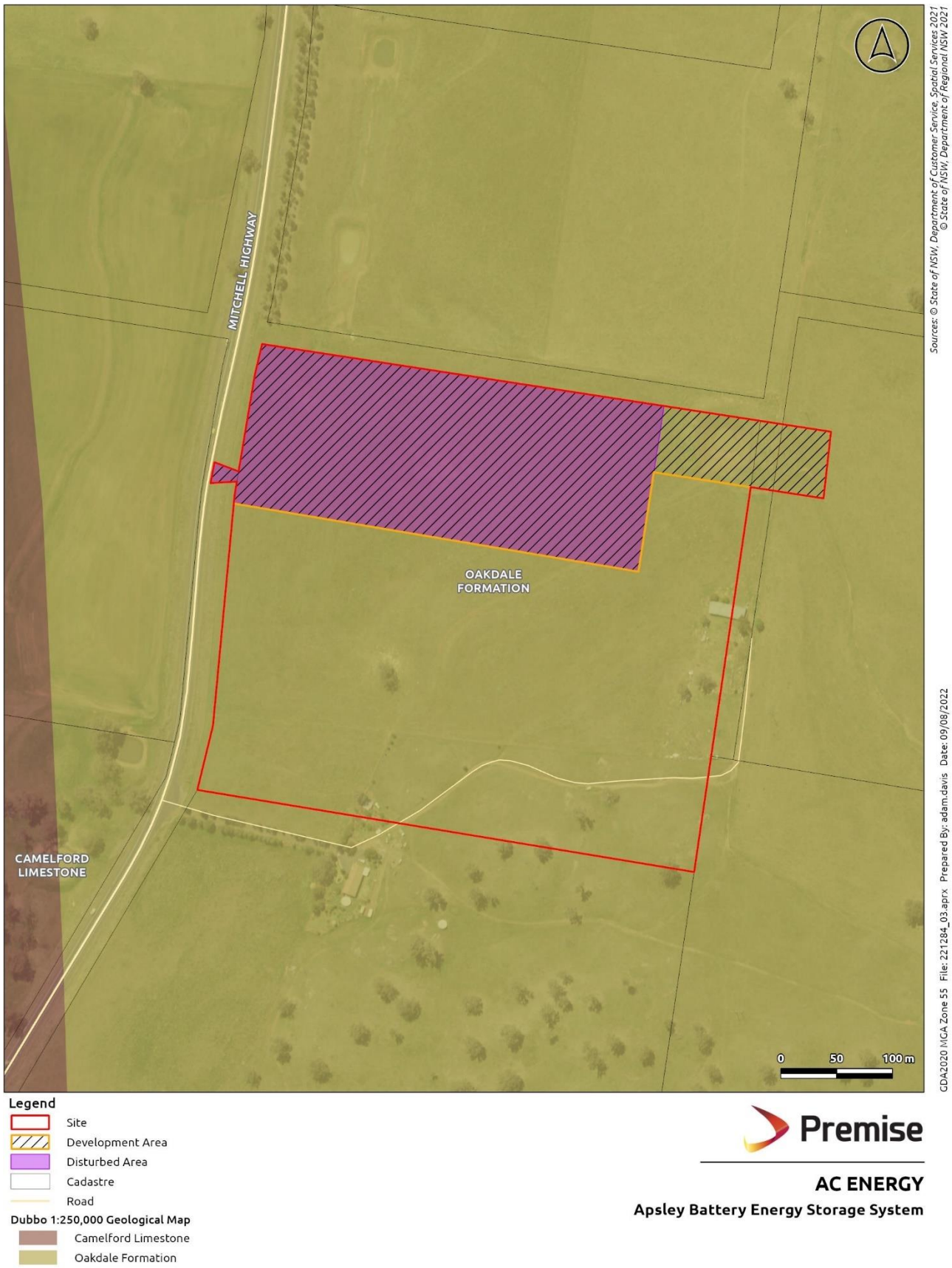
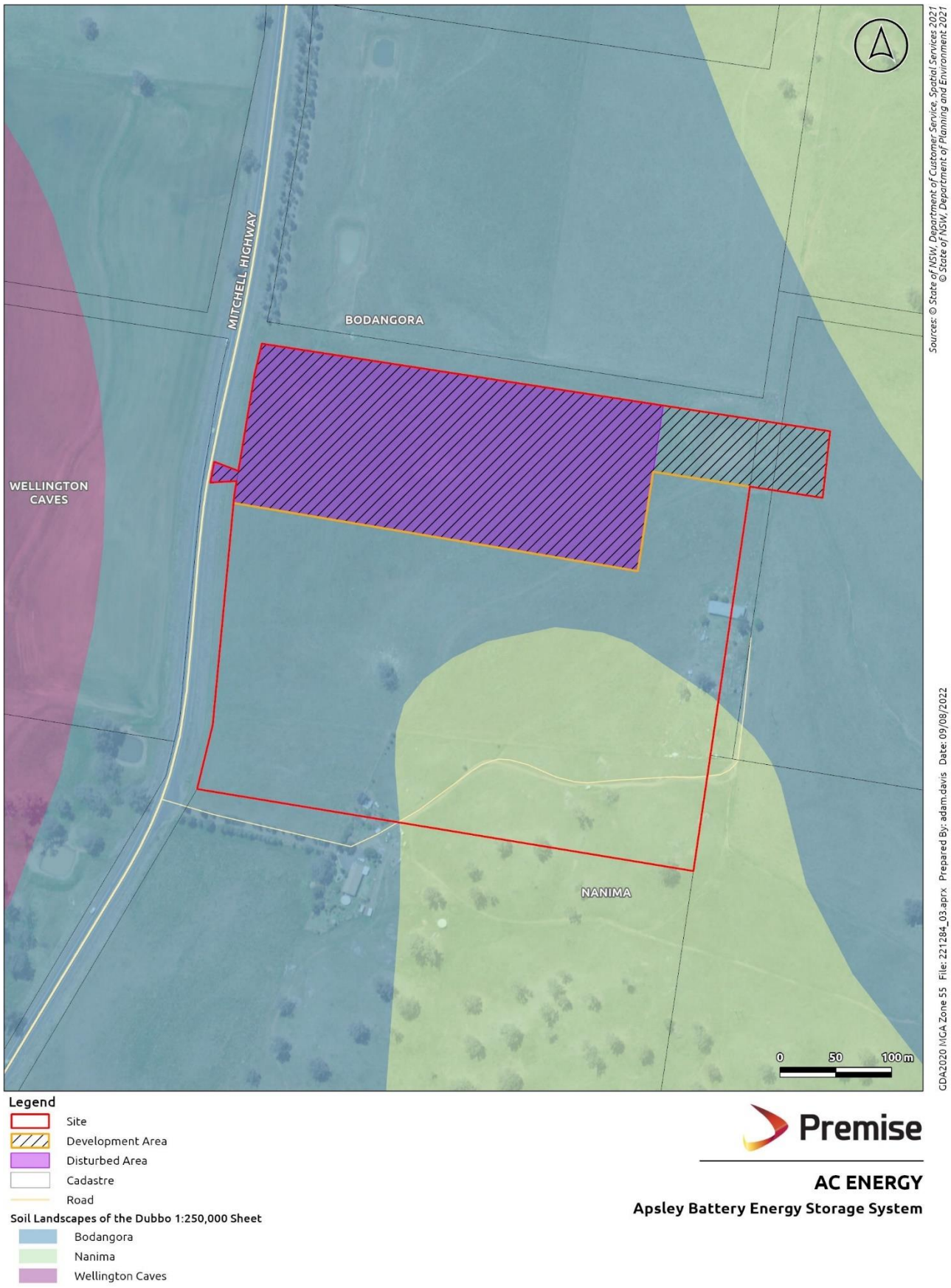


Figure 17 –Soil landscapes



- *Rocky Soil = < 30 cm of rock and red clay loam overlying bedrock*
- *Red Friable Soil = 30 cm of gradational, friable red clay loam to light clay overlying medium clay*
- *Brown Plastic Soil = <10 cm of brown clay loam overlying dense, plastic, medium to heavy clay*

2.4.5.3.1 Rocky Soil

The Agricultural Land Utility Assessment (Cadeema 2022; refer to **Appendix E**) includes the following with respect to the key soil features of Rocky Soil covering approximately 10% of the site area (p. 12):

> *The Rocky Soil is a Leptic Rudosol (Isbell 2021) which occurs on an exposed gentle sloping hill (2% slope). Soil pH levels (CaCl2) are likely to approximate 5.0 to 7.0 and the soils are likely to have low salinity and sodicity levels. This Soil Type is well drained with a moderately permeable profile (NCST 2009) and the surface consists of 35% rock. Leptic Rudosols (Isbell 2021) are classified as having a relative fertility ranking of 1 which is low (Office of Environment and Heritage 2013).*
>
> *The Rocky Soil has limited agricultural utility due to a large proportion of rock (including bedrock) occurring on the surface and within 0.3 m of the surface. This rock precludes tillage and limits the volume of soil available for plant root exploitation. The Rocky Soil potentially facilitates groundwater recharge. This Soil Type is not suitable for cropping and is only suitable for limited dryland grazing.*

2.4.5.3.2 Red Friable Soil

The Agricultural Land Utility Assessment (Cadeema 2022; refer to **Appendix E**) includes the following with respect to the key soil features of the Red Friable Soil covering approximately 60% of the site area (p. 15):

> *The Red Friable Soil is a Red Ferrosol (Isbell 2021) which occurs on an exposed gentle sloping hill (2% slope). Soil pH levels (CaCl2) ranged from 5.1 to 7.0 and increased with depth. Both soil salinity and soil sodicity were very low. This Soil Type does not contain bedrock within 1.0 m of the soil surface and the soil profile contains minimal rock (< 5%). Upper soil layers (< 50 cm depth) are likely to be moderately permeable whilst deeper soil layers are likely to be slowly permeable (NCST 2009). This soil type is considered to be moderately well drained (NCST 2009). Red Ferrosols (Isbell 2021) are classified as having a relative fertility ranking of 4 which is moderately high (Office of Environment and Heritage 2013).*
>
> *Because this Soil Type has a good depth of soil suitable for plant root exploitation, the Red Friable Soil has a relatively high productivity potential and is suitable for a range of agricultural uses and a range of crops. The Red Friable Soil as an adequate depth of surface soil with a medium soil texture, adequate structure and acceptable drainage. The initial subsoil layers to a depth of 50 cm below the surface, whilst increasing in clay content, also have adequate structure and acceptable drainage. This provides a good depth of adequately drained soil to facilitate plant root proliferation and function. Whilst dependent on management and climatic variables, this Soil Type is likely to be suitable for fodder crops, field crops, pastures, forest trees, and for some vegetable and horticultural tree/vine crops.*

2.4.5.3.3 Brown Plastic Soil

The Agricultural Land Utility Assessment (Cadeema 2022; refer to **Appendix E**) includes the following with respect to the key soil features of the Brown Plastic Soil covering approximately 30% of the site area (pp. 18-19):

> *The Brown Plastic Soil is a Brown Sodosol (Isbell 2021) which occurs on an exposed gentle sloping hill (2% slope). Soil pH levels (CaCl2) ranged from 5.1 to 8.2 and increased with depth. Soil salinity was low in the surface soil layers and was slightly to very elevated in the subsoil layers. Soil sodicity was slightly elevated in the surface soil layers and was extremely elevated in the subsoil layers. This Soil Type does not contain bedrock within 1.0 m of the soil surface and the soil profile contains minimal rock (< 5%). The soil profile is very slowly permeable and is poorly drained (NCST 2009). Brown Sodosols (Isbell 2021) are classified as having a relative fertility ranking of 2 which is moderately low (Office of Environment and Heritage 2013).*
>
> *The limited depth of surface soil and high clay content, poorly structured, sodic and poorly drained subsoils limit the utility of this Soil Type for agricultural production and limit the productivity potential of the soil. However, this Soil Type has low to moderate productivity potential for a limited range of agricultural crops and pastures. Physical restrictions and impeded drainage, combined with salinity and sodicity, limit the volume of soil available for effective plant root proliferation and function. Whilst dependent on management and climatic variables, this Soil Type is likely to be suitable for fodder crops, field crops and pastures only.*

2.4.5.4 Contamination

A search of the NSW EPA Contaminated Land Record on 23 August 2022 identified two contaminated sites within the DRC LGA; both located within the city of Dubbo and well removed from the subject site. A search of the List of contaminated sites notified to the EPA as of 08 August 2022 did not identify any contaminated sites within Apsley. The site is sufficiently separated from the six known contaminated sites identified in Wellington as to not warrant further assessment:

- Former Caltex Service Station at 123-128 Lee Street: 10.7 kilometres to the north.
- BP Wellington Service Station at 35A Maxwell Street: 9.6 kilometres to the north.
- Woolworths Petrol Wellington at 79 Lee Street: 10.9 kilometres to the north.
- The Wash Shed (Laundromat) at 67 Gobolion Street (former Gasworks). 9.9 kilometres to the north.
- The Police Citizens Youth Club (PCYC) at 69 Gobolion Street (former Gasworks). 9.9 kilometres to the north.
- J&J Mechanical at 1 Warrawee Street (former Gasworks). 9.8 kilometres to the north.

The site is agricultural land and discussions with the current land owner have confirmed cyclic grazing and cropping activities across the subject site. A review of historic aerial imagery (in the LUCRA - **Appendix F**) confirms ongoing agricultural use of the land, with no other notable infrastructure identifiable.

Common contaminants that are associated with agricultural land uses can include pesticides, fertilisers, livestock treatment chemicals (such as from sheep dips/shearing sheds) and petroleum products (associated with the use of farm machinery).

From site visits and surveys it is notable that the site does not contain any items of agriculture infrastructure (such as shearing or machinery storage sheds, chemical storage sheds or sheep dips). Given the absence of agriculture site infrastructure within the project footprint, the assessed likelihood of contamination from these sources is low.

Pesticides, such as insecticides, fungicides, herbicides and soil fumigants (where used), are considered to have the most likelihood of persisting on site. Pesticides have limited application with traditional forms of broadacre

agriculture and are more commonly associated with use in orchards and market gardens in NSW; these can include both organic and inorganic compounds. Pesticides derived from organic compounds are likely to have decomposed within the soil within a year of application (DEC, 2005). Whilst inorganic compounds can persist in the soil, the absence of activities traditionally associated with the use of pesticides suggests that residual quantities in the soil requiring remediation is low. Thus, given their nature and the low likelihood of use, the likelihood of contamination from these types of activities is considered low.

Based on site observations and database checks, it is therefore considered that the site is unlikely to be contaminated and no further assessment is required.

2.4.5.5 Surface Water

As shown in **Figure 3**, there are no watercourses within the site. A single farm dam is located in the north-eastern corner of the site. The site is not expected to be flood prone given its location at a local high point.

2.4.6 LAND RESOURCES

As shown in **Figure 18**, the Bodangora soil landscape is categorised as Class 3 land and soil capability whilst the Nanima soil landscape is categorised as Class 6 land and soil capability. As shown in **Figure 19**, the Bodangora soil landscape/Class 3 land and soil capability land is mapped as Biophysical Strategic Agricultural Land (BSAL) under Chapter 2 of *State Environmental Planning Policy (Resources and Energy) 2021*. Assessment of the loss of BSAL is provided in **Section 6.3.2**.

Figure 18 – Land resources

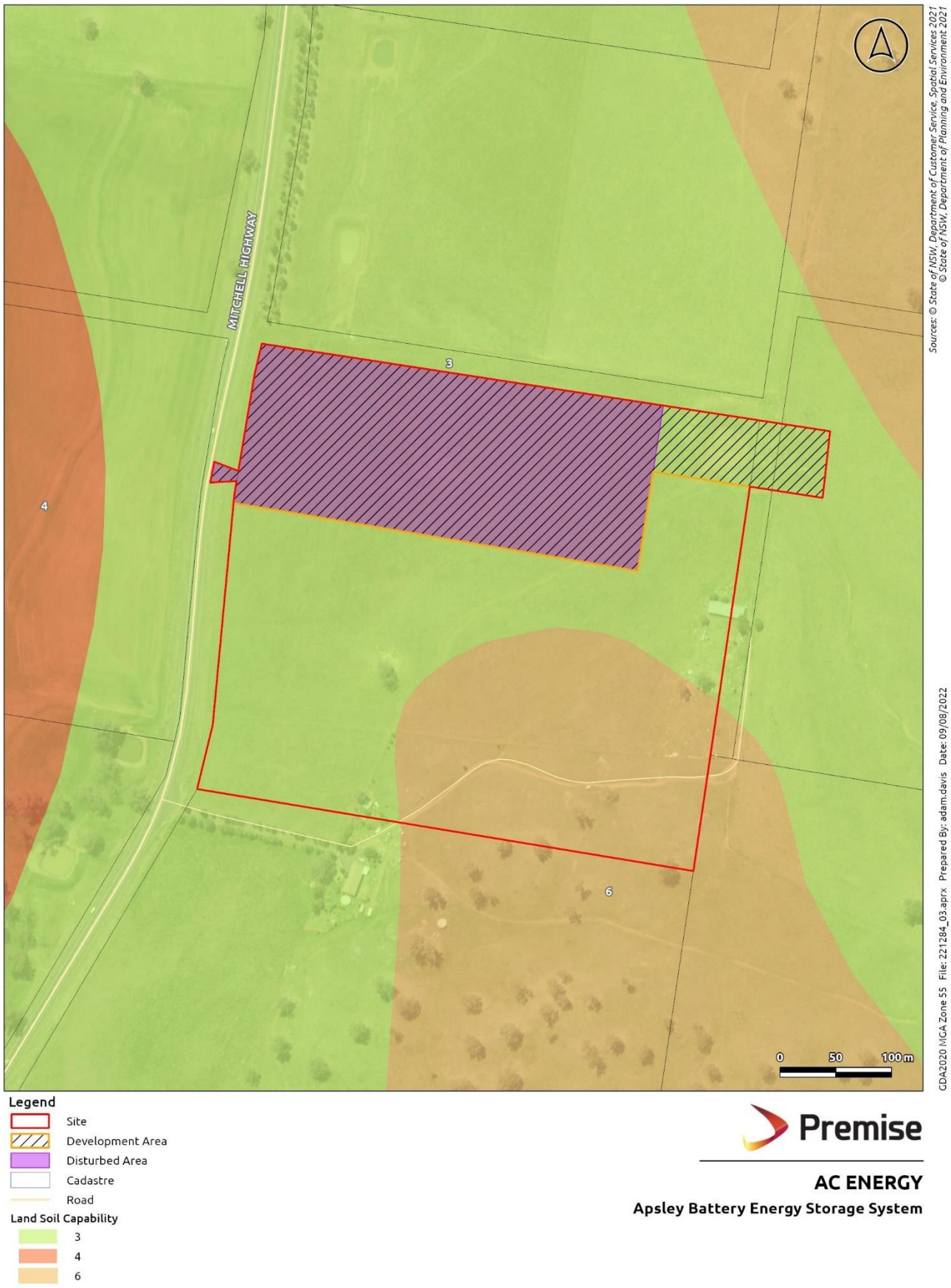


Figure 19 – Biophysical strategic agricultural land

2.4.7 FLORA & FAUNA

The site is currently used for grazing modified pastures and residential and farm infrastructure. As shown in **Figure 20**, there is no existing mapped native vegetation within or proximate to the site. Nevertheless, a Biodiversity Development Assessment Report (BDAR; Premise 2022; refer to **Appendix G**) has been provided in accordance with the requirements of Section 7.9 of the *Biodiversity Conservation Act 2016* (the BC Act). The BDAR includes the following with respect to the presence of native vegetation (p. 7):

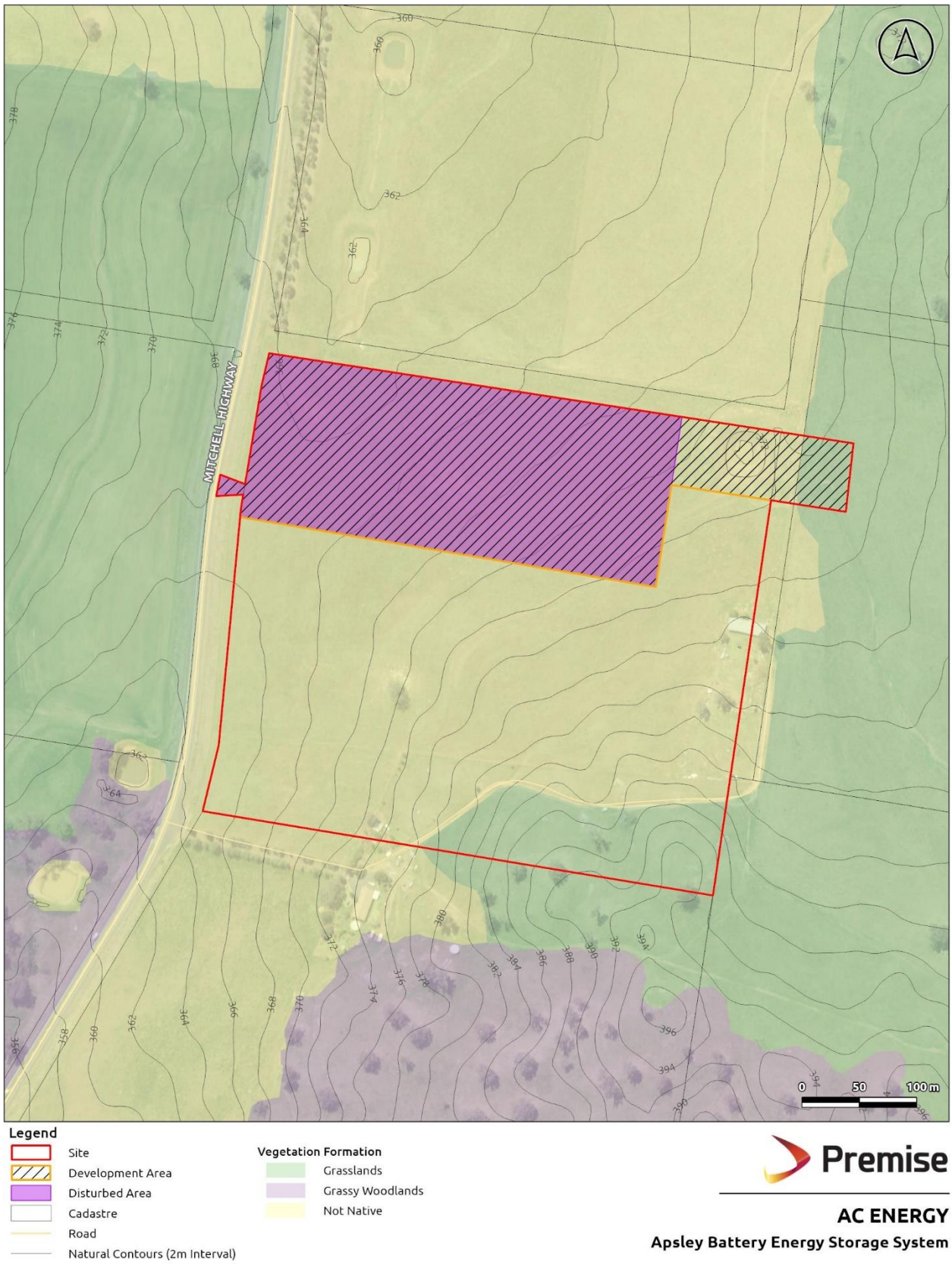
> *Two BAM quadrats were undertaken on 1 November 2021 to provide floristic and structural data, as well as to calculate the Vegetation Integrity (VI) Score. Rapid Assessment Spot Samples were also undertaken in adjacent areas to describe the floristic diversity in the surrounding landscape …. BAM quadrat WELG1 was located on Category 1 Land and is not considered further in this BDAR. BAM quadrat WELG2 was located along the Mitchell Highway at the access point to the proposed BESS. Due to the linear nature of the vegetation, a 40 m x 10 m quadrat was undertaken for safety and practical application of the BAM. WELG2 is the representative plot for the Subject Land. WELG2 was dominated by exotic grasses Cocksfoot (Dactylis glomerata) and Paspalum (Paspalum dilatatum), however native species Queensland Bluegrass (Dichanthium sericeum), Red Grass (Bothriochloa macra) and Common Couch (Cynodon dactylon) were also prevalent. Native Windmill Grass (Chloris truncata) was present in small patches. Oxalis perennans was the only other native species noted in the 400 m^2 quadrat. Two High Threat Weeds were recorded at WELG2, Great Brome (Bromus diandrus) and Paspalum (Paspalum dilatatum) (DPIE, 2021b).*

The BDAR includes the following with respect to the presence of native fauna (pp. 18-19):

> *Threatened fauna species identified by BAM-C as potentially occurring on the Subject Land include one insect, 26 birds and five mammals. The Subject Land contains minimal habitat value as it is an isolated patch of roadside vegetation which has been subject to a long history of disturbance with agricultural land use and road construction, contains no shrubs or trees, no water bodies, rocks or culverts. No threatened species were recorded on the Subject Land at the time of survey and none are considered likely to occur.*
>
> *Many of the threatened fauna species were eliminated from consideration due to the absence of suitable habitat constraints from the Subject Land. Golden Sun Moth require Wallaby Grass to be present or other tufted perennial grasses like Serrated Tussock or Chilean Needle Grass. These grasses are not present and the insect is not considered further. Similarly, the Large Bent-winged Bat requires caves, tunnels or culverts for roosting. As these features are absent from the Subject Land this species is not considered further. The Regent Honeyeater and Swift Parrot are associated with particular habitat which has been identified by DPIE as Important Mapped Areas. The Subject Land does not contain Important Mapped Areas and these species are not considered likely to occur. Glossy Black Cockatoos require Casuarina or Allocasuarina trees to be present, Painted Honeyeater requires a high density of mistletoe, and the White-bellied Sea-Eagle requires living or dead mature trees, all of which are absent from the Subject Land. As a result these threatened fauna are not considered further in the BDAR.*
>
> *Twenty-seven ecosystem species were retained in the BAM-C as they do not have specific habitat constraints. It is very unlikely that any of these species occur on the Subject Land due to the lack of trees or shrubs for shelter, rocks or logs for refuge, and the constant disturbance of passing Highway traffic.*

An assessment of the impact of the development on flora and fauna is provided in **Section 6.5**.

Figure 20 – Vegetation



2.4.8 BUSHFIRE

As shown in **Figure 21** the site is not mapped as bushfire prone land. The nearest mapped bushfire prone land (Vegetation Buffer) is located over 100 metres to the east with Vegetation Category 2 located a further 30 metres to the east. Nevertheless, a range of measures are recommended to mitigate grassfires in **Section 6.6**.

2.5 Agreements with other parties

No agreements have been reached with land owners or receivers with respect to agreed impacts.

3. PROJECT DESCRIPTION

3.1 Project Objectives

The Apsley BESS will be designed to provide grid flexibility services and will support the efficiency of the electrical network by charging from the grid during periods of low demand and discharging back to the grid during periods of higher demand. It would also have the capacity to charge or discharge when power system services are required to maintain the stability of the broader electricity grid.

Power would transition to and from the BESS switching station via a new 132 kV line connected to the existing power lines to the east. The power conversion systems rectify the power into a form that is suitable for storage in the facility's batteries. The BESS strengthens the power network by providing greater flexibility in grid management.

3.2 Project Area

The positioning of the project area in the north-western portion of the site is mainly driven by the following key factors:

1. Access to existing Transgrid owned electricity infrastructure;
2. Proximity to the Mitchell Highway which provides access to Sydney (350 kilometres to the south-east) via Bathurst (150 kilometres to the south-east), Orange (90 kilometres to the south) and Molong (55 kilometres to the south) and provides access to Wellington (ten kilometres to the north), Dubbo (60 kilometres to the north-west and Bourke (430 kilometres to the north-west); and
3. Avoidance of alienation or fragmentation of agricultural land within the landholding through positioning in the corner of the site and suitably unconstrained project area with minimal environmental constraints.

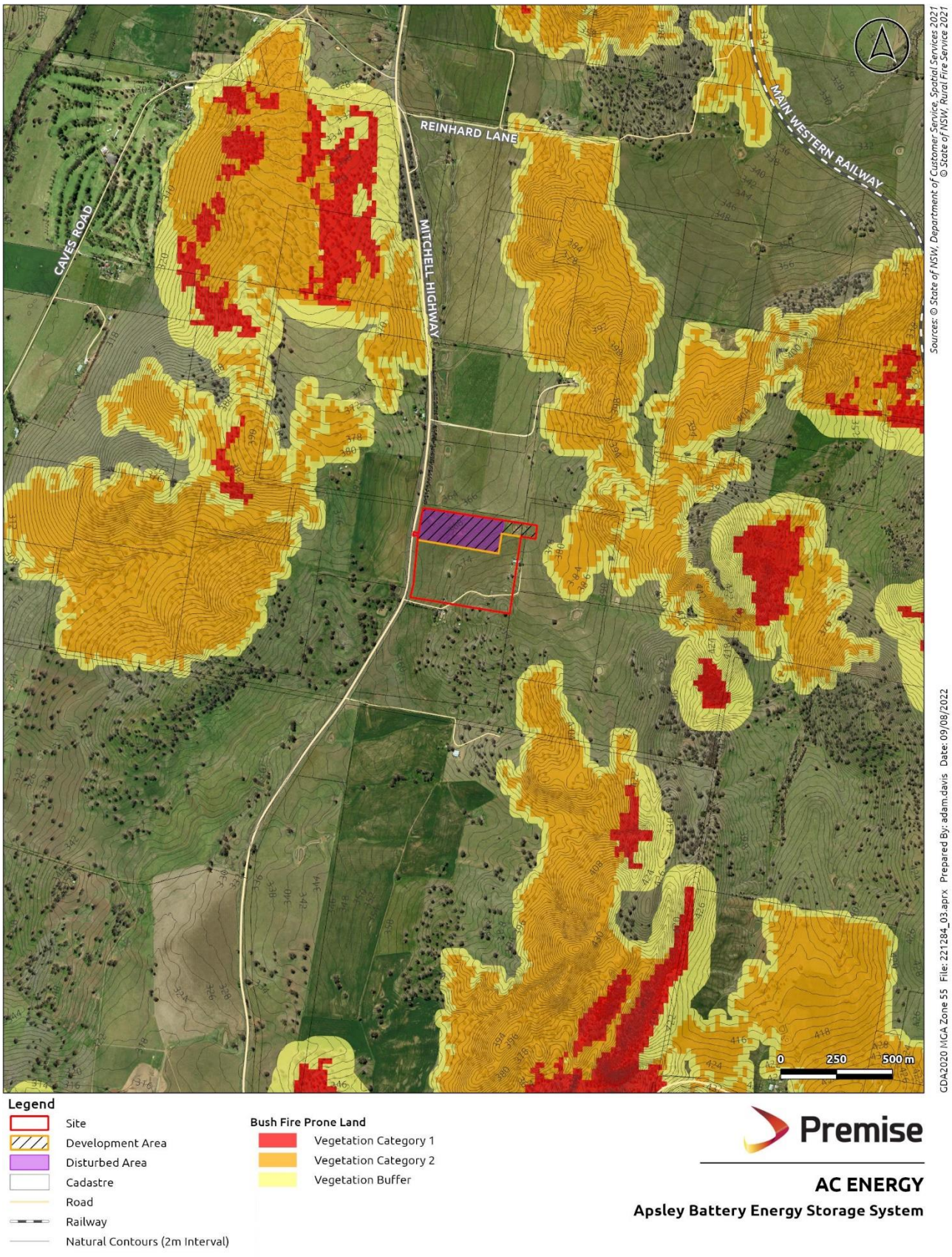
The total area occupied by the proposed BESS is driven by two competing factors:

1. The area required to accommodate batteries and associated equipment to enable a capacity of up to 120 MW_{AC}, 240 MWh, itself driven by the capacity of connecting infrastructure and demand for grid flexibility given an increasingly variable supply as the Central West REZ is established; and
2. Avoidance of unnecessary land-take and visual and acoustic impact.

Consequentially, the portion of the area to be physically disturbed as a result of the BESS infrastructure and ancillary project components is approximately 6 hectares. As shown in **Figure 3**, the area includes:

- New driveway from Mitchell Highway leading to a gated entry to the BESS; and
- Security fencing around the BESS with external landscaping ;including:
  - Four rows along the northern side of the security fence;
  - Two rows along the western and southern side of the security fence; and

Figure 21 – Bushfire prone land



  - Approximately 20 metre-deep tree planting zone for a length of 150 metres along the Mitchell Highway boundary, including native tree species to match roadside planting character north of the site.
- Permanent carpark and temporary (construction) loading zone adjacent to the western security fence;
- 40-foot battery containers, separated into blocks;
- 40-foot inverter and MPVS containers, separated into rows;
- A 132kV switching station in the north-eastern corner of the BESS site; and
- 132 kV transmission line to connect the BESS to the existing powerline to the east.

3.3 Physical Layout and Design

The primary components associated with the installation of the BESS are as follows:

- Groundcover clearing to provide a developable site;
- Levelling the site and constructing a bench on which to install the BESS unit;
- New driveway from Mitchell Highway leading to a gated entry to the BESS;
- Security fencing around the BESS with external landscaping including:
  - Four rows along the northern side of the security fence;
  - Two rows along the western and southern side of the security fence; and
  - Approximately 20 metre-deep tree planting zone for a length of 150 metres along the Mitchell Highway boundary, including native tree species to match roadside planting character north of the site.
- Permanent carpark and temporary (construction) loading zone adjacent to the western security fence;
- 40-foot battery containers, separated into blocks;
- 40-foot inverter and MPVS containers, separated into rows;
- A 132kV switching station in the north-eastern corner of the BESS site;
- Underground or overhead 132kV transmission line to connect the BESS to the existing powerline to the east;
- Installing a 132kV outdoor switchgear (bus bars and circuit breakers) within the subject property for separating the BESS from the electricity network if and when required;
- Constructing an earthing system for the BESS within the subject property;
- Ancillary high voltage equipment, such as circuit breakers, switching equipment, filters and other electrical protection equipment;
- Auxiliary power, protection, indication and control systems;
- Outdoor sensor lighting to provide illumination, when needed, at night;
- Storage enclosures for storing equipment and HVAC equipment for providing cooling and ventilation;
- Commissioning; and
- Routine maintenance, including monitoring, testing and maintenance of onsite equipment, receipt of goods, removal of waste and other general site maintenance (e.g., care of groundcover).

3.3.1 GROUND DISTURBANCE

There will be concrete foundation work required to support the containerized battery and inverter. Foundation depth will be subject to the detail structural design at EPC stage.

There will be underground cable trenches between Battery and MVPS, and between MVPS and the switching station.

The construction of the internal access driveway and the internal perimeter road (from entrance to the switching station), will require the stripping of approx. 200mm-300mm topsoil.

Ground disturbance will include:

- Grass slashing, and removal of rock and timber debris as required in preparation for construction;
- Construction of internal access tracks;
- Concrete foundations for the inverter stations, BESS, substation componentry and O&M building;
- Trenches for the installation of cables;
- Establishment of temporary staff amenities and offices for construction; and
- Construction of perimeter security fencing.

Aside from the footprint of permanent infrastructure, any disturbed areas would be restored to pre-development or improved conditions post-construction.

3.3.2 INVERTER STATIONS

Inverter stations would be installed and located at regular intervals across the site. Each would contain an inverter and a transformer. The inverter stations (containerised) would measure up to approximately 13 metres-long by 3 metres-wide by 3 metres-high. Underground cabling

Underground cabling would be designed in accordance with the relevant Australian and international standards and manufacturer's specifications and installed in trenches.

3.3.3 TRANSMISSION LINE

The electrical connection from the BESS would be via two runs of approximately 100 metres of 132kV powerline running entirely within the site to the existing 132kV line running approximately north-south in the eastern portion of the site. If overhead, the powerline would be installed on 15 to 35 metre-high steel, wood or concrete poles. Any future vegetation growth within the easement would be maintained to mitigate fire risk and allow safe operation of the powerline.

3.3.4 SWITCHING STATION

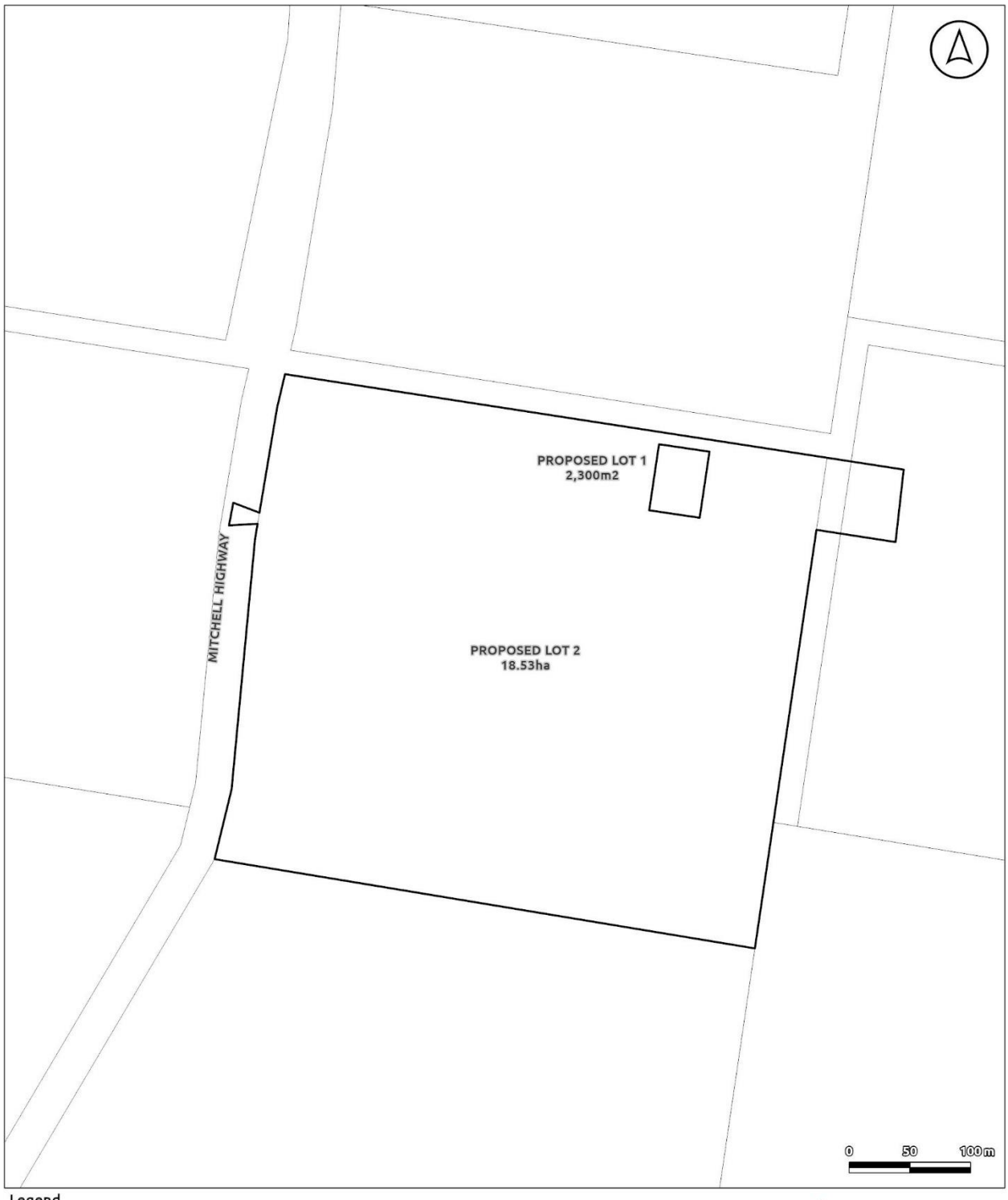
A switching station would be located in the eastern extent of the site.

3.3.5 SUBDIVISION

In order to facilitate the dedication of the switching station to Transgrid it may be required to subdivide the land to create a separate land parcel hosting the switching station. As such, subdivision of the land to create an infrastructure lot (switching station) is proposed, together with a residue lot, which would host the BESS and residue land. The indicative area of the switching station lot is approximately 2,300 square metres and approximately 18.1 hectares for Lot 2 (the residue/BESS lot) – refer **Figure 22**. Access to the switching station lot would be provided via an easement from the main entrance to the Mitchell Highway.

It is also possible that the management of these areas could be progressed as a lease of premises, which would negate the need for subdivision. As the final delivery method has not yet been determined, both project pathways are proposed as part of this application, thus ensuring that all potential project impacts are clearly identified and assessed.

Figure 22 – Proposed subdivision layout



3.3.6 ACCESS AND INTERNAL TRACKS

An approximately four (4) metre wide compacted gravel internal access track would be constructed from the Mitchell Highway frontage, to enable access throughout the site during construction and operational life of the project.

3.3.7 ANCILLARY FACILITIES AND CONSTRUCTION COMPOUND

Ancillary facilities include:

- Material laydown areas;
- Temporary construction site offices;
- Vehicle parking areas for construction workers' transportation;
- Staff amenities including sanitary modules with chemical toilets, water tank, changing rooms, eating area, administrative office, undercover storage area, emergency muster point, and genset for electricity supply, providing capacity to accommodate up to 50 staff on-site; and
- Parking for staff and visitors.

3.3.8 SECURITY FENCING

The perimeter of the site is to be fenced with up to three (3) metre-high security fencing along the site boundaries. It is expected that chain-link fencing with strands of barbed wire at the top would be used. Double gates are to be installed at the access point to the site.

3.3.9 WATER DEMAND

Water demand during construction would be limited to that required for dust mitigation and/or moisture conditioning of material, as well as a potable supply for construction staff. The former will be sourced from a legal supply source, including farm dams on-site (if available) and/or commercial water suppliers.

There is no intent or need for any volumetric water licencing requirement. No water entitlement is needed or required to be purchased.

The quantity of water required for dust mitigation during construction can only be roughly estimated. Ultimately, it will be determined by the detailed design, the EPC contractor's approach to the construction program and the climatic conditions experienced at the time the works are undertaken. Assuming a maximum daily use, in excessively dry and windy conditions, would be 20 kL, and that these conditions are experienced 50% of the time during the peak 2 month construction when trenching and excavation occurs, this equates to 0.5 ML. This requires approximately 18 x 27 kL bulk tankers. By reference to the traffic assessment and the 13 week peak construction program, , this equates to just under 1.5 trucks per week. This is less than one per day and will be accommodated within the projected maximum traffic movements.

Potable supply will be provided through bottled water.

Dry port-a-loos would be provided for amenities throughout construction minimising water demand and negating the need for on-site domestic sewage treatment.

3.4 Sequencing

The project does not propose staging or phasing, with the full extent of the project to be developed via a single construction program.

The construction program is anticipated to occur over an approximately 5 month period, with approximately two (2) week shoulder mobilisation and demobilisation periods, and a peak 3 month construction period.

3.4.1 CONSTRUCTION

3.4.1.1 Construction Activities

As noted above, it is anticipated that the construction and commissioning phase will last approximately 5 months. The main construction activities include:

- Transport of construction personnel, vehicles, and materials to and from site on a day-to-day basis, depending on construction schedule;
- Establishing works including vegetation clearing, minor earthworks, construction of temporary construction compound, Mitchell Highway crossover, and access roads;
- Installation of underground cabling (trenching) and installation of batteries and inverter stations;
- Constructions of the 132kV transmission line and switching station to facilitate interconnection with the existing Transgrid owned 132kV lines in the eastern portion of the site; and
- Removal of temporary construction facilities, and rehabilitation of disturbed areas.

3.4.1.2 Hours of Operation

Works are to be undertaken during standard working hours:

- Weekdays: 7am to 6pm
- Saturday: 8am to 1pm
- Sundays and public holidays: no work

Relevant authorities would be consulted in the unlikely event that construction is required to be undertaken outside of the above-described hours. If a permit to conduct work outside of the above hours is granted, neighbouring residents will be notified in advance to minimise the impact.

Any night lighting required during construction would be directed away from native vegetation, surrounding streets, and neighbouring properties.

3.4.1.3 Personnel

It is anticipated that up to 50 construction personnel would be required on site during the peak construction period (approximately 5 months). Construction supervisors and the construction labour force, made up of construction labourers and technicians, are to be hired locally where possible. Workers would be accommodated in existing third party owned accommodation in Wellington, Dubbo and Orange where possible.

Equipment used during construction is anticipated to include earth-moving equipment for civil works, diesel generators, trucks, and cranes.

3.4.1.4 Materials and Equipment

The following materials will be transported to site (quantities are approximate):

- Gravel for work and service tracks, inverter stations, peripheral backfill and compaction;
- Sand for inverter stations and burying of cables into 500 metres of trenches;
- Metal for the inverters and containers;
- Concrete for the inverters, substation, and maintenance building foundations;
- Water for dust suppression, depending on weather conditions; and
- Drinking water , which would be sourced locally and stored using a suitable food grade water-tank.

3.5 Operation

Once operational, activities are to include daily routine operations and maintenance by up to four (4) personnel, including:

- Routine visual inspections, general maintenance and cleaning operations;
- Vegetation management within the compound;
- Site security; and
- Replacement of equipment and infrastructure as required.

During operation, it is likely that no vehicles will be present on the site on a permanent basis with only occasional visits by standard vehicles.

Any maintenance operations are to be undertaken during standard working hours (unless emergency works are urgently required):

- Weekdays: 7am to 6pm
- Saturday: 8am to 1pm
- Sundays and public holidays: no work

Night lighting used through the BESS during operation for security and safety purposes is to be directed away from surrounding road network, and neighbouring properties.

3.6 Decommissioning

After an anticipated 30 years of operation, all above ground infrastructure would be removed. Key elements of decommissioning include:

- Removal of site amenities and equipment for recycling or reuse;
- Removal of battery containers and inverters for offsite reuse or disposal;
- Removal of fencing including small concrete footings; and
- Rehabilitation of disturbed soils in consultation with the landowner with the aim of meeting pre-construction land capability.

The transmission line connecting to the 132kV switching station will be decommissioned if owned by the project, or may continue to be operated by the electricity supply authority for public power supply if owned by Transgrid. In the event that the decision is made to decommission the transmission line above ground infrastructure and posts would be removed and the land would be returned to its pre-construction condition. As the switching station will be constructed by the project, but gifted to Transgrid and will form an integral part of their holistic network, it is very likely that the switching station will remain in situ at the end of the project life.

In consultation with the landowner, above ground concrete slabs would be left in place where they do not impact agricultural viability. Cables deeper than 500mm may also be left in place to reduce impact on land capability.

Traffic required for decommissioning would be similar in type but of shorter duration than that anticipated during the construction phase.

4. STATUTORY CONTEXT

In accordance with Section 3.5 of the *State Significant Development Guidelines – Preparing an Environmental Impact Statement* (DPIE 2021), the statutory requirements for the development are set out in **Table 1**.

Table 1 – Statutory requirements

Category:	Guidance:	Comment:
Power to grant approval	*Identify the legal pathway under which consent is sought, why the pathway applies, and who the consent authority is. If permissibility is relevant to this section, the discussion here should be cross-referenced rather than repeated.*	**The legal pathway under which consent is sought** Section 4.36(2) of the EP&A Act provides that a SEPP may declare any development, or any class or description of development, to be SSD. Clause 2.6(1) of *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP) provides that development is SSD for the purposes of the EP&A Act if: *(a) the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the EP&A Act; and* *(b) the development is specified in Schedule 1 or 2 of the SEPP.* **Why the pathway applies** Under the DLEP 2022, development for the purposes of electricity generating works is prohibited in the RU1 Primary Production zone in which the site is located (refer to **Figure 23**). Nevertheless, the development is permitted with consent on the following grounds: • Under clause 2.7(1) of *State Environmental Planning Policy (Transport and Infrastructure) 2022* (the Infrastructure SEPP), where there is an inconsistency between the Infrastructure SEPP and another environmental planning instrument, the Infrastructure SEPP prevails (with few exceptions, none of which are relevant to this application); and • Clause 2.36(1)(b) of the Infrastructure SEPP provides that electricity generating works may be carried out by any person with consent in a prescribed rural, industrial or special use zone (the RU1 Primary Production zone is a prescribed rural zone).

		The proposed development is State Significant Development (SSD) on the following grounds: 1. Section 4.36(2) of the EP&A Act provides that a State Environmental Planning Policy (SEPP) may declare any development, or any class or description of development, to be SSD. 2. Section 2.6(1) of *State Environmental Planning Policy (Planning Systems) 2021* (the Systems SEPP) provides that development is declared to be State significant for the purposes of the EP&A Act if: a. the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the EP&A Act; and b. the development is specified in Schedule 1 or 2 of the SEPP. In relation to 2(a) above: The proposed development satisfies Section 2.6(1)(a) of the Systems SEPP on the grounds that it is permitted with consent under Section 2.36(1)(b) of the Infrastructure SEPP. In relation to 2(b) above: The proposed development satisfies Section 2.6(1)(b) of the Systems SEPP on the grounds that it is for the purposes of electricity generating works that has a capital investment value of more than $30 million in accordance with clause 20 of Schedule 1 of the SEPP. The applicable statutory context is considered in greater detail in **Section 4**. **Who the consent authority is** Section 4.5(a) of the EP&A Act provides that the consent authority for SSD is the Minister unless the development is of a kind which the IPC is declared by an environmental planning instrument to be the consent authority. Clause 2.7 of the Planning Systems SEPP provides that the IPC is the consent authority for SSD for any of the following that is not carried out by or on behalf of a

		public authority and that is not State Significant Infrastructure (SSI): • Development to which the local council has objected to during the public exhibition of the proposal; • Development which has received at least 50 unique objecting submissions other than from Council during the public exhibition of the proposal; and • Development the subject of a DA made by a person who has disclosed a reportable political donation in connection with the DA. On the basis that reportable political donations have not been made in connection with the DA to the knowledge of Premise, the consent authority will be the Minister in accordance with Section 4.5(a) of the EP&A Act unless objecting submissions of the type or number described in clause 8A of the Planning Systems SEPP are received during the public exhibition of the SSDA.
Permissibility	*Identify the relevant provisions affecting the permissibility of the project, including any land use zones. If there are inconsistencies in these provisions, identify the inconsistencies and explain which provisions prevail to the extent of any inconsistency.* *If the project is partly or wholly prohibited, identify any provisions or actions being taken that would allow the project to be considered on its merits (e.g. making a concurrent amendment to the relevant environmental planning instrument). The rationale for allowing the project to be carried out on this land should be discussed in more detail in the justification and evaluation sections of the EIS.*	Refer to **Section 1.3**.
Subdivision	Permissibility of subdivision and heads of consideration.	The proposal includes subdivision of the land to provide create a lot of the switching station and create a residue lot. Subdivision is permissible within the RU1 zone pursuant to clause 2.6 of the LEP, subject to satisfying the applicable minimum lot size (MLS),

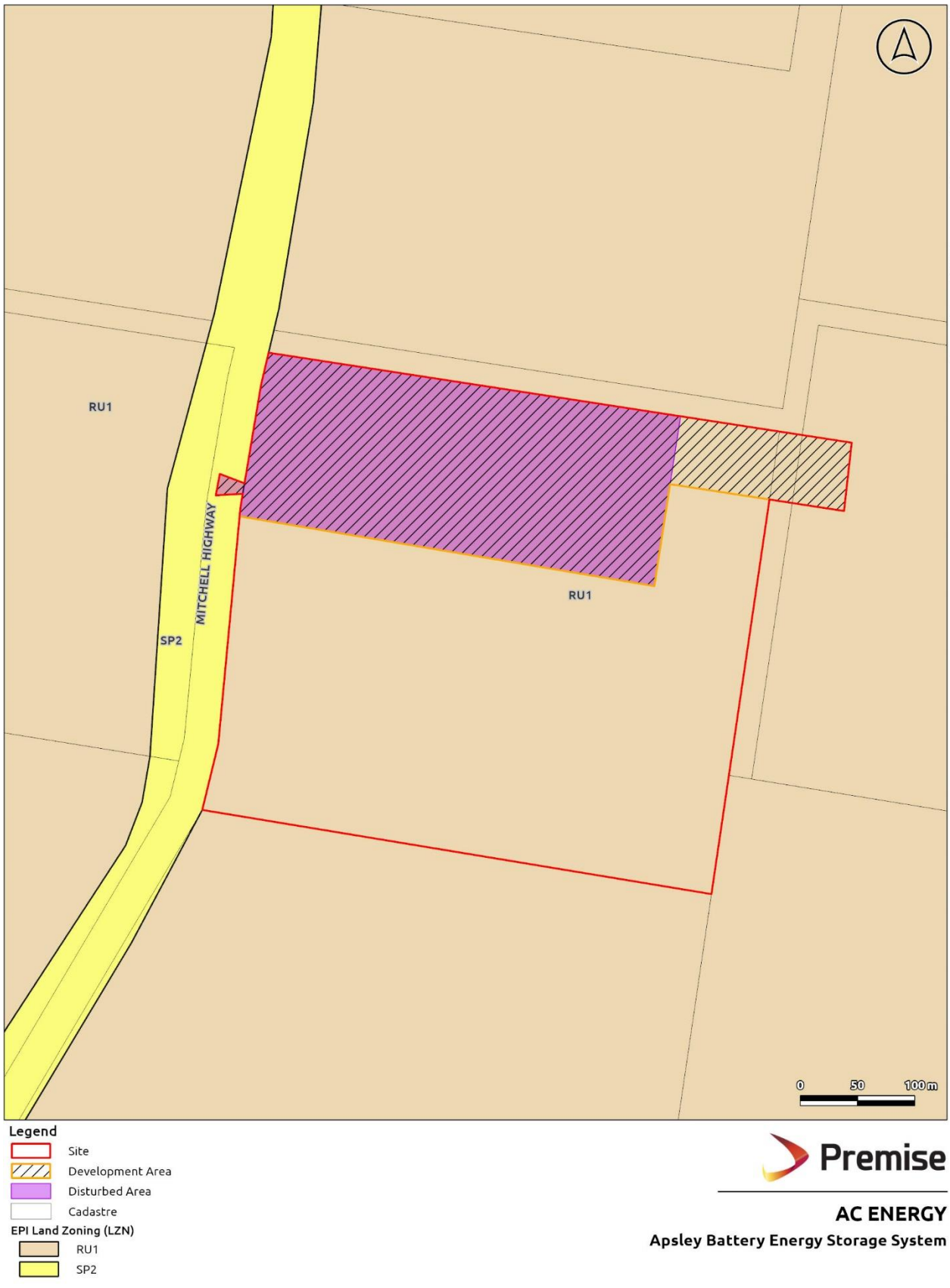
		pursuant to LEP clause 4.2. In this instance, the applicable MLS is 400 hectares. Proposed Lot 1 has an of 2,300 square metres and is therefore inconsistent with the MLS. Proposed Lot 2 has a lot size of approximately 18.1 ha and is also inconsistent with the MLS. The proposed subdivision is considered to be acceptable by reference to the objectives of the RU1 zone on the basis that: • The proposed subdivision is associated with the carrying out of a permissible activity in the RU1 zone and does not prejudice the carrying out of primary industry production; • The existing lot is small in size and only viable in conjunction with adjacent land held in the same ownership. It could be sold in its current form (as an 18 ha lot). The excision of 2,300 m2 does not materially affect the viability of the land to be used for agricultural purposes in isolation of the remainder of the holding. • Proposed lot 1 is small in size and facilitates the carrying out of an electricity generating project, which is permissible in the zone, and will host permanent electrical infrastructure that will be managed and retained by Transgrid in the discharge of their functions as an electricity authority; • The lot is adjacent to a Crown Road, but is separated from property boundaries. It is not considered likely that the proposed subdivision will lead to conflict with adjacent land uses. The proposed use of the land for housing electricity infrastructure is compatible with the use of the adjacent land for the purposes of primary production and for the purposes of electricity generating works. • The proposed lot is well separated from sensitive environments and would not lead to unacceptable impacts to watercourses or groundwater. Clause 5.16 of the DLEP is not relevant on the basis that the proposal does not seek to create a lot for the purposes of the erection

		of a dwelling and does not facilitate the future erection of a dwelling.
Other approvals	*Identify any other approvals that are required to carry out the project and why they are required. These approvals should be grouped into the following categories:* • *Consistent approvals: approvals that cannot be refused if the project is approved and must be substantially consistent with the approval22* • *EPBC Act approval, and whether the bilateral agreement23 applies* • *Other approvals: approvals that are not expressly integrated into the SSD assessment under the EP&A Act (e.g. water access licences under the Water Management Act 2000, leases under the National Parks and Wildlife Act 1974).* *Also identify the approvals that would have been required if the project was not an SSD project24.*	The following consistent approvals are required: • A licence under Section 48 of the *Protection of the Environment Operations Act* 1997 (the POEO Act) to perform an activity listed under Schedule 1 of the POEO Act, including the general electricity works with capacity to generate more than 30 megawatts of electrical power as specified in Section 17, Schedule 1 of the POEO Act; and • A consent to connect a road to Mitchell Highway or any of the other listed activities under Section 138 of the *Roads Act 1993* (the Roads Act). Commonwealth approvals are not required for the following reasons: • A search for potential matters of national environmental significance (MNES) that may trigger the need for referral to the Australian Department of Agriculture, Water and the Environment (DAWE) via the online Protected Matters Search Tool (PMST), conducted with a 10 kilometre buffer of the site on 30/05/2022: – Did not identify any World Heritage Properties, National Heritage Places, Great Barrier Reef Marine Park or Commonwealth Marina Area protected by the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act); and – Identified four Wetlands of International Importance (RAMSAR Wetlands), none of which are likely to be impacted due to their separation from the site: – Bankrock Station, located 800-900 kilometres from the site; – Riverland, located 700-800 kilometres from the site; – The Coorong and Lakes Alexandrina and Albert Wetland,
Pre-condition to exercising the power to grant approval	*Identify any pre-conditions to exercising the power to grant approval for the project. These will include mandatory conditions that must be satisfied before the consent authority may grant approval.* *Each pre-condition should be summarised in a table with cross-references to the relevant sections of the EIS where it is addressed in more detail (see example in Appendix D).*	

		located 900-1,000 kilometres from the site; and – The Macquarie Marshes, located 200-300 kilometres from the site. – Identified four listed threatened ecological communities, 33 listed threatened species and 11 migratory species with the potential to occur in proximity to the site but are unlikely to occur due to the substantially altered landscape and lack of extant vegetation. A review of National Native Title Tribunal's Native Title Register did not identify any Native Title claims or applications, or Indigenous Land Use Agreements at or near the site under the *Native Title Act 1993* (the Native Title Act).
Mandatory matters for consideration	*Identify the matters that the consent authority is required to consider in deciding whether to grant approval.* *Each mandatory matter should be summarized in a table with cross-references to the relevant sections of the EIS where it is addressed in more detail (see example in Appendix E).*	Pursuant to Section 1.7 of the EP&A Act, the *Biodiversity Conservation Act* 2016 (the BC Act) is a mandatory matter for consideration. Section 7.9 of the BC Act provides that any application under Part 5 of the EP&A Act for SSD must be accompanied by a biodiversity development assessment report (BDAR) unless the Planning Agency Head and Environment Agency Head determine that the development is not likely to have any significant impact on biodiversity values. Ongoing engagement with DAWE has indicated that EPBC referral is prudent, and this process is to occur concurrently to the EIS assessment process. Pursuant to Section 4.15 of the EP&A Act, the following mandatory matters for consideration apply: • Relevant environmental planning instruments, including: – *State Environmental Planning Policy (Resilience and Hazards*) 2021; – *State Environmental Planning Policy (Transport and Infrastructure) 2021*; – *State Environmental Planning Policy (Planning Systems) 2021*;

		– *State Environmental Planning Policy (Biodiversity and Conservation) 2021*; and – *Dubbo Regional Local Environmental Plan 2021*. • The relevant development control plan, being the *Wellington Control Plan 2013* (noting that the application of development control plans is excluded from SSD under Section 2.10 of the Planning Systems SEPP); • The likely impacts of the development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality; • The suitability of the site for the development; and • The public interest.

Figure 23 – Land Use Zoning (DRLEP 2021)



5. ENGAGEMENT

Consultation during the EIS preparation and public exhibition phase focussed on:

- Ensuring engagement is undertaken to, as a minimum, satisfy the SEARS (outlined below)
- Informing the community regarding the project through targeted engagement, to help inform the preparation of the EIS

5.1 Objectives

The objectives of the consultation phase are set out below:

- Provide clear and transparent information about ACEnergy and the project
- Explain the project goals, approvals pathway and the range of assessments to be completed
- Provide a forum/mechanism to share information about the project
- Confirm and understand the motivations, needs and interests of stakeholders
- Be adaptable and responsive to changes in the public health environment, such as with respect to COVID-19, and being capable of adapting the approach to consultation accordingly
- Understand and address any concerns raised by the community and other stakeholders

5.2 Consultation Approach

A comprehensive Community and Stakeholder Engagement Plan (CSEP) was developed to ensure the above consultation objectives would be achieved. The plan outlines several techniques to ensure that all relevant stakeholders and community members were reached and were afforded an opportunity to be informed and provide feedback on the EIS.

5.3 Key Findings

Throughout the project consultation the following themes were raised. This is discussed in more detail in **Section 5.4**.

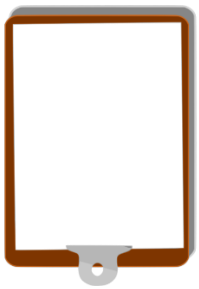
Table 2 – Key findings

Theme	Summary	Approach to address
Community benefits	Generally, persons spoken to about the project during letter box drops and property visits ahead of the EIS lodgement were comfortable with what ACEnergy is proposing for the Apsley BESS. Many recognise the positive impacts that the renewable energy project will have in the region. Main areas of feedback and concern focused on aspects such as visual amenity, noise, safety and site access.	The EIS will provide an assessment of all impacts together with the outcomes of a range of specialist studies to consider these areas.
Visual amenity	Some local residents raised questions regarding the impact of the BESS on visual amenity. Local landowners sought a greater understanding of where the proposed infrastructure will be situated on site, how the visual amenity assessment will be	A detailed Landscape and Visual Impact Assessment will be provided with the EIS to consider the potential for all forms of visual amenity

Theme	Summary	Approach to address
	carried out and how this would impact views from their property.	impact, and recommend appropriate mitigation measures.
Noise impacts	Residents questioned operating hours and the potential for noise impacts as a result of BESS operation.	A detailed Noise and Vibration Impact Assessment will be provided with the EIS and will consider the impacts of the construction and operation of the project against the relevant criteria.
Safety	Due to recent media about BESS operations, queries about site safety and the potential for risk to neighbouring properties was raised by a number of respondents.	The EIS will be accompanied by a detailed Preliminary Hazard Analysis to consider risk associated with the BESS and any required mitigation measures.
Site access	Like other properties in the area, access will be directly from the highway. Some residents sought to clarify that access during construction can be managed safely for all road users.	A detailed traffic impact assessment is provided to support the EIS to consider issues around site access and construction traffic.

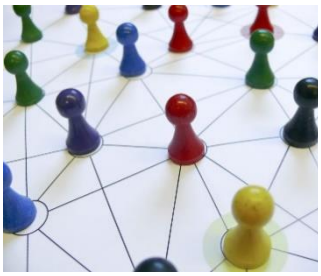
5.4 Consultation Feedback

5.4.1 INTERACTIONS

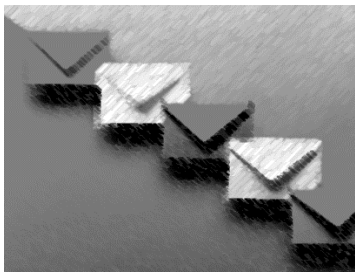


- 1 response to the project survey

- Two community information sessions
- Ongoing face to face and online meetings with neighbours



- Numerous visits to the webpage (analytics unavailable)
- 1 telephone enquiry to the project 1800 number
- 3 email enquiries to the project email address



- 41 letters delivered to surrounding and nearby landowners during the EIS phase providing project details

A summary of interactions is provided in **Table 3** overleaf.

Table 3 – Consultation outcomes – local community, residents and businesses

Receiver	Date Visited				Address	Comments raised	Response
	Doorknock 1	Doorknock 2	Community Info Session Letters - Letter Box Drop	Social Impact Assessment - Letter Box Drop			
R10	03/11/2021	13/12/2021	06/04/2022	13/04/2022	205 Caves Road Apsley	Owner Not Home/Locked Gate/Guard Dog. Letter Left in Mailbox.	No contact information attained. Concerns anticipated to be addressed via EIS.
R3	03/11/2021	13/12/2021	06/04/2022	13/04/2022	9091 Mitchell Highway Apsley	Owner Not Home/Locked Gate/Guard Dog. Letter Left in Mailbox.	No contact information attained. Concerns anticipated to be addressed via EIS.
R2	03/11/2021	13/12/2021	06/04/2022	13/04/2022	9230 Mitchell Highway Apsley	No objections or concerns for the project raised.	No contact information attained. Concerns anticipated to be addressed via EIS.
R4	03/11/2021	13/12/2021	06/04/2022	13/04/2022	9092 Mitchell Highway Apsley	Visual (screening), Traffic (access arrangements), Project Layout, Mining and Geology, Watercourse (Catchment impacts to residents dam)	Visual description of battery provided and informed of preparation of a visual impact assessment . No access via 9092 Mitchell Highway is proposed. Overview of applicable mining titles provided. Geology is to be accessed within the Scoping Report and EIS. Face to Face site meeting

Receiver	Date Visited				Address	Comments raised	Response
	Doorknock 1	Doorknock 2	Community Info Session Letters - Letter Box Drop	Social Impact Assessment - Letter Box Drop			
							attended by ACEnergy Premise and resident to address project concerns.
R7	03/11/2021	13/12/2021	06/04/2022	13/04/2022	8950 Mitchell Highway Neurea	Owner Not Home/Locked Gate/Guard Dog. Letter Left in Mailbox.	No contact information attained. Concerns anticipated to be addressed via EIS.
R1	03/11/2021	13/12/2021	06/04/2022	13/04/2022	9 Caves Road Apsley	Owner Not Home/Locked Gate/Guard Dog. Letter Left in Mailbox.	No contact information attained. Concerns anticipated to be addressed via EIS.
R9	03/11/2021	13/12/2021	06/04/2022	13/04/2022	275 Caves Road Apsley	Owner Not Home/Locked Gate/Guard Dog. Letter Left in Mailbox.	No contact information attained. Concerns anticipated to be addressed via EIS.
R6	03/11/2021	13/12/2021	06/04/2022	13/04/2022	8958 Mitchell Highway Neurea (land is occupied by abandoned metal shed).	Owner Not Home/Locked Gate/Guard Dog. Letter Left in Mailbox.	No contact information attained. Concerns anticipated to be addressed via EIS.
R8	03/11/2021	13/12/2021	06/04/2022	13/04/2022	275 Caves Road Apsley	No objections or concerns for the project raised.	No contact information attained. Concerns anticipated to be addressed via EIS.

Receiver	Date Visited				Address	Comments raised	Response
	Doorknock 1	Doorknock 2	Community Info Session Letters - Letter Box Drop	Social Impact Assessment - Letter Box Drop			
AR1	-	-	06/04/2022	13/04/2022	91 Caves Road, Apsley	Letter Left in Mailbox.	No contact information attained. Concerns anticipated to be addressed via EIS.
AR2	-	-	06/04/2022	13/04/2022	93 Caves Road Apsley	Letter Left in Mailbox.	No contact information attained. Concerns anticipated to be addressed via EIS.
AR3	-	-	06/04/2022	13/04/2022	64 Caves Road Apsley	Letter Left in Mailbox.	No contact information attained. Concerns anticipated to be addressed via EIS.
AR4	-	-	06/04/2022	13/04/2022	9228 Mitchell Highway Neurea	Letter Left in Mailbox.	No contact information attained. Concerns anticipated to be addressed via EIS.
AR5	-	-	06/04/2022	13/04/2022	9232 Mitchell Highway Neurea	Letter Left in Mailbox.	No contact information attained. Concerns anticipated to be addressed via EIS.
(B1) Wellington Caves	03/11/2021	13/12/2021	06/04/2022	13/04/2022	101 Caves Road Apsley	Traffic, Noise, Access to Community Information Session	Invitation to meeting to discuss project further. Response received indicating interest in potential for vibration impacts to caves. Formal

Receiver	Date Visited				Address	Comments raised	Response
	Doorknock 1	Doorknock 2	Community Info Session Letters - Letter Box Drop	Social Impact Assessment - Letter Box Drop			
							Response to operators of Wellington Caves provided on 30/05/2022.
(B2) Caravan Park	03/11/2021	13/12/2021	06/04/2022	13/04/2022	101 Caves Road Apsley	Under management by B1.	Under management by B1.
(B3) Japanese Garden (Osawano Japanese Garden)	03/11/2021	13/12/2021	06/04/2022	13/04/2022	94 Caves Road, Apsley	Owner Not Available. Left Letter in Mailbox.	No contact information attained. Concerns anticipated to be addressed via EIS.
(B4) Wellington Golf Club	03/11/2021	13/12/2021	06/04/2022	13/04/2022	158 Caves Road, Apsley	Owner Not Available. Left Letter in Mailbox.	No contact information attained. Concerns anticipated to be addressed via EIS.
(B5) Wellington Bottle House	03/11/2021	13/12/2021	06/04/2022	13/04/2022	87 Caves Road, Apsley	Owner Not Available. Left Letter in Mailbox.	No contact information attained. Concerns anticipated to be addressed via EIS.
(B6) Caves Wood Gallery and Gifts	03/11/2021	13/12/2021	06/04/2022	13/04/2022	85 Caves Road, Apsley	Owner Not Available. Left Letter in Mailbox.	No contact information attained. Concerns anticipated to be addressed via EIS.

Table 4 – Agency and mining companies

Impact area	Agency	Consultation dates					Response
Heritage	Heritage NSW	23/09/2021					ACHAR Engagement Agency Consultation Identification of Potential Interested Parties
Heritage	National Native Title Tribunal (NNTT)	23/09/2021					ACHAR Engagement Agency Consultation Identification of Potential Interested Parties
Heritage	Wellington Local Aboriginal Land Council (LALC)	23/09/2021					ACHAR Engagement Agency Consultation Identification of Potential Interested Parties
Heritage	Office of the Registrar (ORALRA)	23/09/2021					ACHAR Engagement Agency Consultation Identification of Potential Interested Parties
Heritage	Native Title Services Corporation Limited	23/09/2021					ACHAR Engagement Agency Consultation Identification of Potential Interested Parties
Heritage	Central West Local Land Services (CWLLS)	23/09/2021					ACHAR Engagement Agency Consultation Identification of Potential Interested Parties
Heritage	Wellington Local	23/09/2021					ACHAR Engagement Agency Consultation Identification of Potential Interested Parties

Impact area	Agency	Consultation dates					Response
	Aboriginal Land Council						
Heritage	Dubbo Regional Council	23/09/2021					ACHAR Engagement Agency Consultation Identification of Potential Interested Parties
Water	NRAR	05/11/2021	09/12/2021				Introduction to project and feedback on development proposal. Development in proximity to farm dam.
Land	Dubbo Regional Council	07/05/2021	05/08/2021				Introduction to project and feedback on development proposal.
				12/11/2021	09/12/2021		Notification for tourist facility management associated with Wellington Caves, Caravan Park and Japanese Osawana Garden. No response received.
		23/04/2022	27/04/2022				Opportunity to brief Councillors on the project.
				07/07/2022	11/07/2022	15/07/2022	Landowner consent for SSD application on basis that works are proposed to create an access driveway constructed within Council's Road Reserve (Mitchell Highway). Council does not view that it has a landowner consent role with respect to road reserves and would prefer that these sorts

Impact area	Agency	Consultation dates					Response
							of matters to be dealt with via the S.138 Roads Act approval process.
Land	TfNSW	05/11/2021	09/12/2021				Introduction to project and feedback on development proposal.
				11/07/2022	15/07/2022		Landowners consent involving works to road reserves. TfNSW does not typically provide landowners consent for the making of applications involving works to road reserves, on the basis that this land is not land that is held in an ownership sense.
Land	Crown Lands	24/11/2021	06/12/2021				Introduction to project and Introduction to project and feedback on development proposal. Response received identifying impacted crown land.
		16/02/2022					Agency Advice provided on 16/02/2022 noting impacts to crown land.
		26/05/2022	10/05/2022				Landowners consent application for impacted Crown Land. Consent provided on 10/05/2022

Impact area	Agency	Consultation dates					Response
Due Diligence	EPA	05/11/2021	09/12/2021				Introduction to project and feedback on development proposal. No response received.
Land	DPI	17/02/2022	10/03/2022	25/05/2022			Agency Advice provided on 17/02/2022 noting impacts to BSAL, Agriculture, Land and Soil Capability. Responses to consultation provided on 10/03/2022 and 25/05/2022. Impacts on agricultural land is detailed within the EIS.
Traffic	TfNSW	28/10/2021	04/07/2022	11/07/2022	15/07/2022		Draft TIA provided. Response received and TIA updated to reflect TfNSW comments. Confirmation that further review of TIA will occur when TFNSW receive formal referral from the consent authority.
Fire	RFS	05/11/2021	09/12/2021				Draft BFA provided. Response received confirming that the assessment provided suitable coverage of the relevant issues.
Fire	F&RNSW	05/11/2021	09/12/2021				Introduction to project and feedback on development proposal. No response received.
Social impacts	Councillor - Dubbo	17/05/2022	30/05/2022				Concerns regarding community engagement. Response detailing scope of engagement provided.

Impact area	Agency	Consultation dates					Response
	Regional Council						
Mining Licence	Colossus Metals Pty ltd	05/11/2021	09/12/2021	20/05/2022	26/05/2022		Mining Exploration Licence (EL8735) applies to the land. No response received.
Mining Licence	Silver City Minerals Limited	05/11/2021	09/12/2021	23/05/2022	26/05/2022	27/05/2022	Mining Exploration Licence (EL8971) applies to the land. Stakeholder noted general support for BESS projects in Wellington and identified no conflict or objections with the proposed development.
Mining Licence	Sultan Resources	27/05/2022					Acquisition of Collosus Minerals Pty Ltd and Exploration Licence EL8735.

Table 5 – Community groups

Community group	Consultation dates		Reasons for engagement	Comments
NSW Farmers Association Wellington Branch	05/11/2021	09/12/2021	Site is located on BSAL designated land and has a land capability of Class 3.	No response received. Concerns anticipated to be addressed via EIS.
Dubbo Field Naturalist & Conservation Society	05/11/2021	09/12/2021	Local Environmental Responsibility and Conservation Group.	No response received. Concerns anticipated to be addressed via EIS.
Mid Macquarie Landcare	05/11/2021	09/12/2021	Local Land Care Group	No response received. Concerns anticipated to be addressed via EIS.
Transition Dubbo	05/11/2021	09/12/2021	BESS project related to groups interest in Climate Change Action.	No response received. Concerns anticipated to be addressed via EIS.

Community group	Consultation dates		Reasons for engagement	Comments
Dubbo Environmental Group	05/11/2021	09/12/2021	Local Environmental Group.	No response received. Concerns anticipated to be addressed via EIS.
Central West Environment Council	05/11/2021	09/12/2021	Umbrella group with network of district environment groups throughout the Central West of NSW.	No response received. Concerns anticipated to be addressed via EIS.

5.4.2 ONLINE COMMUNITY INFORMATION SESSIONS

Two project online information sessions were scheduled and advertised. Advertising for the sessions included three letter drops to neighbours, a newspaper advertisement and details included in the project community newsletter.

One attendee registered for the first session but was unable to log in. A subsequent face to face meeting with this attendee was held.

No parties registered for the second session.

5.4.3 SURVEY RESULTS

As a component of the Social Impact Assessment, a survey was open to local residents between 11 April and 22 May 2022 and advertised via a letterbox drop, email and on the project website. A single submission was received, summarised as follows in the Social Impact Assessment (SIA; Mara 2022, p. 16):

The respondent

- *was not supportive of the project and was neutral in terms of how important the proposal was to the local economy*
- *indicated the project would have a negative impact on noise, dust, visual impact, transport and traffic*
- *indicated there would be positive benefits for jobs and business through construction and operation*
- *concerns were raised about lowering the value of their property and water runoff from the site.*

5.4.4 NEIGHBOURING LANDOWNERS

Residential properties within 2 kilometres of the project were visited with project introduction letters and opportunities to discuss the project with Premise and ACEnergy. All landowners were offered the opportunity to contact the project team to discuss the project. During the EIS phase, a total of 60 Letters were delivered to surrounding and nearby landowners (an additional 5 residents/landowners outside of the 2km radius of the project were added), including:

- 20 Letters associated with the 1st Community Information Session
- 20 Letters associated with the Social Impact Assessment.
- 20 Letters associated with the 2nd Community Information Session

As no responses to the above were received, direct contact was made with the closet landowners to discuss the projects and understand any concerns or questions. Discussions with these neighbours were initially held by phone with representatives of ACEnergy and then either face to face or online, at the request of the neighbour.

Neighbours identified a range of matters that were of importance to them and sought clarification on matters that may impact them. These discussions will continue throughout the life of the project. ACEnergy is committed to building a strong relationship with the local community and ensuring engagement is of value to all parties.

Keys issues raised by neighbours are discussed as follows:

- Contamination/biosecurity – concerns were identified with respect to potential for leakage and contamination associated with the battery units. Explanations were provided about the self-bunded nature of the battery units with details of the specific LFP technology explained.
- Fire risk and impact to adjacent land – concerns were identified about the risk of fire from the facility and impacts to adjacent land. Explanations were provided about the range of studies being completed with respect to risk and future studies that were recommended as design progresses to ensure that fire risks were mitigated and control strategies were implemented to address residual impacts.
- Noise impacts – concerns about the potential for night time noise and how this would be managed. Explanations were provided about the nature of the noise and vibration study prepared to support the project and the future studies that are recommended as design progresses. The project preference is to provide mitigation on site in the form of noise walls to ensure that receiver locations achieve compliance with the adopted criteria. This is achieved with a single wall around the grid transformer.
- Vibration impacts – the operator of the Wellington Caves contacted the project with a question about vibration impacts to the caves. Explanation was provided that any impacts would be limited to the construction period, and that the carrying out of appropriate vibration assessment was underway to ensure that the likelihood of impacts is understood and appropriate controls implemented via a Construction Environmental Management Plan (CEMP) to ensure that impacts are limited.
- Visual impacts – concerns about visual impacts associated with the project and any noise attenuation walls that may be required. Explanation provided of the detailed landscape plan that would be provided and the range of measures, including timing of landscaping, painting of walls, materials to be used, etc that would be adopted in delivering the project.
- Traffic impacts – concerns about the potential for traffic conflict during the construction stage. Explanations were provided about the level of assessment being completed and the low level of movements predicted during the construction phase, and the very low level of movements during the operational phase.

5.4.5 LOCAL COUNCIL

ACEnergy engaged with Dubbo Regional Council planning staff via email at the commencement of the project and have also reached out with an offer to brief Councillors.

Matters raised for consideration by Council planning staff are summarised in

Table 6 – Council comments.

Council comment	Response
Access to the property would be via the Mitchell Highway, a classified road. Envisaged there would be significant heavy vehicle movements into the site during construction phase. Transport for New South Wales would be the jurisdiction here with regards to road treatments into the property. This area is controlled by the Western Region office in Parkes. I suggest consultation be undertaken with them with regards to their requirements;	• Engagement with TfNSW has occurred – refer **Section 5.4.7.1** • A traffic impact assessment has been prepared
The land is mapped as groundwater vulnerability according to the Wellington LEP 2012. Application to consider impacts on the groundwater below the	The potential for impacts to groundwater is addressed within the EIS.

Council comment	Response
site in terms of impacts on water table level and pollution of groundwater;	
Impacts on native fauna and flora to be considered, in particular native flora and the Biodiversity Conservation Act 2016. Impacts on native flora include native grasses;	A Biodiversity Development Assessment Report has been prepared to support the EIS
Consider impacts of bushfire protection (grassland risk) and matters of consideration or this type of development under the Planning for Bush Fire Guidelines 2019;	A bushfire assessment has been prepared to support the ESI
Consider any EME impacts on nearest residential development;	EME impacts are considered in the Preliminary Hazard Analysis and the EIS
Consider Aboriginal Archaeology impacts;	An Aboriginal Cultural Heritage Assessment Report has been prepared to support the EIS, including engagement with local Aboriginal parties.
Visual impacts of the development need to be considered. Plans should demonstrate screening of the development such as landscaping around the sites perimeter.	A Landscape and Visual Impact Assessment has been prepared to support the EIS. Screening is proposed, to be wholly contained within the subject site.

ACEnergy also briefed Councillor via an online session on the 12 May 2022. The presentation provided an overview of the project, actions to date and timing moving forward.

The following matters were raised by Councillors:

- The extent of consultation that had been completed, particularly in Wellington.
- Why this site was selected.
- Whether any form of planning agreement was proposed with Council.

In response to the above, the following is noted:

- Engagement with the community is set out in this report and includes the measures taken to open discussions and respond to points raised.
- It was explained that the site was chosen for a variety of reasons, including but not limited to:
  - The generally flat nature of this parcel of land;
  - The accessibility to the road network, from a construction perspective, and the suitability of the land to provide a safe site access;
  - The proximity of the site to the state energy grid;
  - An analysis of available environmental constraint information confirmed that the site is relatively unconstrained, ie, contains no mapped waterways, is not mapped as bushfire prone, contains no significant native vegetation and is well separated from adjacent unrelated dwellings.
  - Other areas of the holding were considered, however were discounted due to the extent of vegetation clearing that would be required and the more undulating nature of the land, requiring more extensive bulk earthworks.

  - In summary, the site is preferred as it meets the project objectives with the minimum of impact to the environment and to nearby receivers;
- An agreement is not proposed, however ACEnergy has initiated a community benefit scheme (currently advertised on the project website) allowing community groups to apply for funding for local projects.

5.4.6 MINERALS TITLE HOLDERS

The site is located at the intersection of two NSW Exploration and Mining Titles, including:

- EL8735 over the eastern portion of the site, held by Colossus Metals Pty Ltd; and
- EL8971 over the western portion of the site, held by Silver City Minerals Ltd.

The following attempts were made to seek feedback from the mineral title holders:

- Colossus Metals Pty Ltd:
  - Emails on 5 November 221, 9 December 2021 and 20 May 2022; and
  - Phone call on 26 May 2022.
- Silver City Minerals Limited:
  - Emails on 5 November 2021, 9 December 2021 and 23 May 2022; and
  - Phone calls on 26 May 2022 and 27 May 2022.
- Sultan Resources (acquired Colossus Metals Pt Ltd in 2020):
  - Email sent 27 May 2022.

An email response from the Cicero Group was received on the 27 May 2022 on behalf of Silver City Minerals who raised no objections and noted no conflict between the project and the existing EL. The response also noted general support for BESS projects in the outer Wellington area.

No response was received from Colossus Metals or Sultan Resources. During project assessment, continued efforts will be made to contact Colossus/Sultan to ensure they remain informed of the project.

5.4.7 REGULATORY AGENCIES

5.4.7.1 Transport for NSW

ACEnergy sought advice from TfNSW early in the project (refer **Appendix O**) and has taken this advice into account in the preparation of the Traffic Impact Assessment to support the EIS. Key issues raised include:

- Ensure the proposed access achieves appropriate safe sight distance
- Ensure the proposed access location takes account of curve alignments in either direction, the fall of the road, pavement of the road, the design vehicle (largest vehicle accessing the site during construction), vegetation, signage and opposing accesses etc.
- A strategic design considering the warrants as per Figure 3.25 of Part 6 of Austroads Guide to Traffic Management
- Be accompanied by a Traffic Impact Assessment.

The above matters are addressed by the Traffic Impact Assessment (TIA) supporting the EIS (**Appendix I**).

5.4.7.2 Fire and Rescue Service

The site is not mapped as being located within a bushfire prone area, however engagement with RFS during the scoping phase of the project identified the expectation of an appropriate bushfire assessment to consider the site having a grassland hazard.

A draft bushfire assessment has been provided to NSW Rural Fire Service and Fire and Rescue NSW. No direct response from F&RNSW was received however RFS confirmed the bushfire assessment provided suitable coverage of the relevant issues (refer **Appendix O**).

From other SSD projects, Premise is aware that F&RNSW prefer not to engage prior to EIS lodgement and will respond directly to DPE during the EIS exhibition phase. Notwithstanding, general issues that F&RNSW expect to be addressed with projects of this nature include:

- Consideration of the HIPAP No. 1 - Industry Emergency Planning Guidelines, including establishment of an emergency plan. This is addressed via the project PHA. An emergency plan will be prepared to support an OEMP.
- Consideration of the Emergency services information package and tactical fire plans FRNSW guideline document in the development of an Emergency Services Information Package (ESIP). The ESIP provides firefighters with site specific information that allows them to develop and implement effective strategies and tactics to manage a fire or other emergency incident. An ESIP will be prepared to support the OEMP.
- Ensure that the FRNSW guideline document *Access for fire brigade vehicles and firefighters*, is used in the access design. This will be addressed at detailed design stage.

5.4.7.3 Department of Primary Industries

As part of the SEARs issued by DPIE on 3 March 2022, the Department of Primary Industries provided agency advice dated 17 February 2022, reproduced as follows:

> *We note that the site is identified as lands with Class 3 and 6 lands (NSW Land and Soil Capability) and the Class 3 land is also mapped as Biophysical Strategic Agricultural Land. Although the site is only 18.3 hectares, the scoping reports notes the narrow extent of Class 3 land on site. The assessment needs to show how this land used for this development can be minimised as the land is currently also used for agriculture.*
>
> *In the scoping report Section 6.2.3 Impact Identification states that the social impact assessment outcomes will look at environmental constraints of the site. We consider that the impact on the site and locality should be investigated in relation to the loss of agricultural land and the loss of agricultural production. We note the preliminary impact and opportunities include changes to the locality, landscape and visual amenity.*
>
> *In relation to Agriculture (Section 6.4.2) the assessment of impacts of the proposal will be reviewed through a Land Use Conflict Risk Assessment (LUCRA). We note that the site is small but this development as like many other renewable energy developments continues to contribute to the loss of agricultural lands particular those mapped as important agricultural lands (that includes Biophysical Strategic Agricultural Land and, those lands mapped as Land and Soil Capability Class 1-3) in the Dubbo Regional Council area, that includes lands that are currently identified as draft State Significant Agricultural Lands. Hence our preference is that the development footprint is considered to take into account the avoidance of Class 3/BSAL land on its final location.*
>
> *The draft SEARs do contain requirements in relation to:*
>
> - *Assessment of the site including a soil survey. In relation to this information it can also be used for final rehabilitation outcomes to achieve this preconstruction land condition and land and soil capability.*
> - *A detailed assessment if agricultural resources and agricultural productivity through an agricultural impact statement. This includes the cumulative impacts of the BESS and*

associated energy generation infrastructure on agricultural productivity in this vicinity. As well the assessment of the biosecurity risk of the site including the development of a weed and pest management plan for construction and operation should also be undertaken.

- *The final decommissioning phase should also consider the commitment to removal of all above and below ground infrastructure as part of a decommissioning and rehabilitation plan.*

On 10 March 2022, Premise contacted the Department of Primary Industries via email to discuss the contents of the agency advice. No response was received.

On 25 May 2022, Premise contacted Mary Kovacs of the Department of Primary Industries via phone to discuss their concerns. A subsequent email from Premise advised the following:

As discussed, the proposed Apsley BESS at 9091 Mitchell Highway will have some impact on class 3 lands (around 60% of the site footprint). Based on the concept footprint of the development, we cannot avoid impacts to class 3 mapped lands.

As also discussed, the reasons for this are summarised as follows:

- *The site location is proximal to the electrical connection line to allow good access to the grid*
- *The site has good access to the road network by comparison to other areas within the available land holding*
- *Other potential areas with land holding were discounted due to be impacted by native vegetation or sloping areas, leading to greater environmental impacts if chosen in preference to the subject site*
- *The impact of the project (~6 ha of land) is very small in consideration of the available class 3 land in the locality and the lot itself (~18ha) is not viable in its own right if sold to facilitate the project (or for another purpose).*
- *In the context of the project, the remainder of the site (~12ha) would continue to be used for agricultural purpose in conjunction with the remainder of the holding.*

On the basis of the above, the project would not lead to a significant impact to agricultural lands, nor a significant loss of viable lands.

Impact on agricultural land is further discussed in Section 6.2.1, Section 6.3.2 and Section 6.3.4.

5.4.7.4 NSW Crown Lands

The proponent issued a letter to NSW Crown Lands on 24 November 2021, advising the State agency that it was proposed to develop a BESS in a portion of Lot 3 DP1012686 with a connection over Crown land (road reserve) to a 132kV transmission line to the east. On 6 December 2021, NSW Crown Lands provided a response letter advising that:

If lineal infrastructure (such as electricity transmission lines) are expected to traverse Crown land, roads and/or waterways, an easement over said Crown land, roads and/or waterways will be required for protection of the infrastructure.

As part of the SEARs issued by DPIE on 3 March 2022, NSW Crown Lands provided agency advice dated 16 February 2022, reproduced as follows:

> *As per section 1.1 Overview of the Apsley Battery Energy Storage System Report, Crown Lands notes that there are Crown roads within and adjoining the project area. These roads may provide legal access to the development but may not provide practical access. The Department advises that these roads should not be relied upon for practical access to the project site. It is also proposed, in section 2.3.2 Access and Figure 4, that transmission lines may be placed on or over Crown roads.*
>
> *The Department will need to be referenced, prior to any use or occupation of any Crown roads or land, during the assessment phase.*
>
> *Authority to use, traverse, access or build infrastructure on Crown roads (or Crown land) is required under the Crown Land Management Act 2016 and/or Section 130 of the Roads Act 1993.*
>
> *It is recommended that the proponent contact Crown Lands as early as possible to discuss and initiate the processes required to authorise the use of and/or access to the mentioned Crown roads.*
>
> *If infrastructure needs to be built on Crown land or roads, the consent of the Minister for Lands and Water must be obtained, via Crown Lands, and constructed roads may need to be transferred to Council.*

Accordingly, Premise submitted a landowner's consent application on 26 April 2022. On 10 May 2022, NSW Crown Lands provided landowner's consent for the submission of a development application, and other associated applications, subject to:

> *(1) The consent is given without prejudice so that consideration of the proposed development may proceed under the Environmental Planning and Assessment Act 1979 and any other relevant legislation.*
>
> *(2) This consent does not imply the concurrence of the Minister for Lands and Water for the proposed development, or the issue of any necessary lease, licence or other required approval under the Crown Lands Act 1989; and does not prevent the Department of Planning and Environment - Crown Lands (Department of Planning and Environment - Crown Lands) from making any submission commenting on.*
>
> *(3) This consent will expire after a period of 12 months from the date of this letter if not acted on within that time. Extensions of this consent can be sought.*
>
> *(4) The Minister reserves the right to issue landowner's consent for the lodgement of applications for any other development proposals on the subject land concurrent with this landowner's consent.*
>
> *(5) Irrespective of any development consent or any approval given by other public authorities, any work or occupation of Crown land cannot commence without a current tenure from the Department of Planning and Environment - Crown Lands authorising such work or occupation.*

5.4.7.5 Community Groups

A number of community groups have been approached about the project including Wellington Caves, Wellington Golf Club, three residential properties close to the BESS, Colossus Metals and Silver City Minerals. The outcome of discussions with the mining companies is provided in **Section 5.4.6**.

A response was also received from the operators of the Wellington Caves, who indicated some interest in the potential for vibration impacts to the caves. A commitment to provide the final noise and vibration report to the Caves was made and was provided to the caves operator on 30 May 2022.

No other responses from the other above listed receivers above have been received.

The project will continue to engage with the mining companies and Caves operator during EIS assessment.

5.5 Ongoing engagement

As the EIS progresses through the approval process, ACEnergy will continue to consult with the community through workshops, community newsletters, local community groups and Aboriginal community representatives.

Consultation will be undertaken during the exhibition phase of the EIS ensure community and stakeholders are aware that the EIS is on exhibition and have an opportunity to provide an informed submission to DPE as the assessor.

6. ASSESSMENT OF IMPACTS

Pursuant to Schedule 1 of the EP&A Regulation, this section of the report outlines the environmental impacts of the proposed development and any measures required to protect the environment or lessen the harm to the environment.

The impacts have been identified through an assessment of the proposed development against the provisions of section 4.15(1)(b) and the former NSW Department of Urban Affairs and Planning's (nd) *Guide to Section 79C*.

This section also addresses the consideration at Section 4.15€ and Section 4.15€ of the Act that relate to the suitability of the site for the development and the public interest.

6.1 Heritage

6.1.1 IMPACTS

The Aboriginal Cultural Heritage Assessment (ACHA, Premise 2022) attached at **Appendix D** makes the following conclusions with respect to the impact of the development on items or sites of Aboriginal heritage significance (pp. 54, 55):

> *This assessment has identified that there will be no impacts or loss of harm to Aboriginal sites or places during the proposed works. Both sites recorded during the archaeological survey Apsley IF-1 and Apsley IF-2 are located outside of the impact area and exclusion zones will be implement around both sites to avoid impacts.*
>
> *…*

There will be no impact to the cultural heritage values of the broader area. The study area has been assessed as having nil-low archaeological sensitivity. All sites recorded in the study area will not be subject to impacts and will remain insitu (Apsley IF-1 and Apsley IF-2).

6.1.2 MITIGATION MEASURES

The ACHA concludes that no modifications to the detailed design or further investigations are required (pp. 55, 56). On this basis, recommendations set out in the ACHA primarily relate to the provision of exclusion zones to identified artefacts and preparation of an Aboriginal Cultural Heritage Management Plan and Unexpected Finds Protocol (pp. 57, 58):

1. *The development proposal should proceed, conditional upon the recommendations outlined in this report and an exclusion zone implemented around the recorded sites within the study area as identified in Section 13.1.*

2. *No further Aboriginal archaeological investigations are proposed.*

3. *Two newly recorded sites identified during the archaeological survey will be uploaded to the AHIMS database:*

    - *Apsley IF-1.*
    - *Apsley IF-2.*

4. *The development must avoid the two isolated finds located within the study area (Apsley IF-1 and Apsley IF-2) as per the proposed development footprint in this report. A minimum 10m buffer around each isolated find is appropriate.*

5. *No impacts are to occur to previously recorded sites located immediately north of the study area (AHIMS #36-4-0082 and #36-4-0083)*

6. *Aboriginal cultural heritage within the study area will be managed by an Aboriginal Cultural Heritage Management Plan (ACHMP) that will be developed following project approval in consultation with the RAPs and Heritage NSW. The ACHMP will contain the recommendations of this report, as well as an unanticipated finds protocol, procedures to manage unexpected discoveries of human remains,*

7. *No recorded sites will be impacted. Given that these sites are low-density artefact scatters and isolated finds, their scientific significance is low, and the recording and collection of visible artefacts is considered to be sufficient mitigation with regard to the proposed impact.*

8. *An unexpected finds procedure would be implemented as part of the management considerations for Aboriginal Cultural Heritage. unexpected finds policy should be included as part of the proposed ACHMP. If unanticipated Aboriginal objects are uncovered during works, all work in the vicinity should cease immediately. A qualified archaeologist should be contacted to assess the find and Heritage NSW and Wellington LALC must be notified.*

9. *All impacts must remain within the assessed study area or further archaeological investigation may be required.*

6.2 Hydrogeology

6.2.1 SOILS

6.2.1.1 Impacts

An Agricultural Land Utility Assessment (ALUA; Cadeema 2022) attached at **Appendix E** makes the following findings with respect to impact of the of the proposed development on soils (p. 26):

> *Adverse soil physical impacts may include traffic and infrastructure induced compaction, soil organic matter reduction and associated soil structural deterioration and/or erosion causing sediment mobilisation.*
>
> *…*
>
> *Whilst the soils on this site are not particularly vulnerable to soil structural decline or erosion, there is potential for these adverse soil impacts to occur however, measures can be implemented to minimise adverse impacts.*

6.2.1.2 Mitigation Measures

It is recommended in the ALUA that that an Erosion and Sediment Control Plan (ESCP) and Soil and Water Management Plan (SWMP) are prepared in accordance with the *Soils And Construction - Managing Urban Stormwater* (Landcom 2004) as part of the detailed design stage. The ESCP and SWMP are anticipated to cover off on the following items:

- *Minimise soil disturbance and excavation where possible*
- *Minimise mixing of soil layers where practical*
- *Retain and stockpile all disturbed or excavated soil*
- *Ameliorate any excavated and/or stockpiled soils in accordance with advice obtained from the NSW Soil Conservation Service*
- *Consider soil amelioration with lime and/or gypsum prior to reinstatement and/or as part of decommissioning*
- *Return stockpiled soil to its original location (where possible) as soon as reasonably practicable*
- *Ensure topsoil and subsoils are stockpiled separately and returned in order*
- *Minimise overworking of the surface soils (in-situ, in excavation, stockpiling and reinstatement)*
- *Reinstate topsoil where possible where excavation occurs*
- *Minimise vehicular traffic induced compaction where practical*
- *Minimise stock compaction by excluding livestock during construction, minimising stocking rates and/or minimising the risk of stock coinciding with wet topsoil conditions*

- *Minimise infrastructure induced compaction where possible (spread loads etc.)*
- *Maintain and maximise vegetative cover where possible to help protect surface soils*
- *Employ practices which maintain/increase soil organic matter levels such as maintaining grass cover where practical, minimising soil disturbance and the retention/incorporation of any cleared vegetation or organic matter as soon as reasonably practicable*
- *Avoid bare (fallow) soil surface where practical*
- *Whilst good weed control should be implemented, retention of less detrimental weeds may help maintain vegetal of cover and/or increase soil organic matter levels.*
- *Minimise the exposure of subsoil layers particularly to rainfall/surface water run-off impacts*
- *Implement excess surface water controls to minimise collection/concentration of mobile surface water*
- *Implement practices to minimise sediment mobilisation and/or sediment capture*
- *Minimise site activities and soil disturbance during wet weather conditions where possible*
- *Ensure that the sodic soils, which include all layers of the Brown Plastic Soil (to a depth of 1.0+m), are clearly identified and not mixed with other soils*
- *Regularly monitor soils for potential adverse impacts and if and when identified, implement appropriate mitigation or remediation actions*
- *Implement construction and/or site rehabilitation and revegetation in accordance with an appropriate landscape, revegetation or rehabilitation plan prepared by a suitably qualified professional*
- *Ensure rehabilitation is undertaken progressively to minimise the total disturbance area at any one time*
- *Prepare an appropriate decommissioning management plan which aims to minimise adverse soil impacts and aims to return the site to preconstruction land and soil capability (or better)*
- *The decommissioning management plan should determine soil conditions prior to decommissioning to ensure any existing soil conditions and/or adverse impacts, which may have changed/developed throughout the life of the development, are catered for*

6.2.2 SURFACE WATER

6.2.2.1 Impacts

As shown in **Figure 3**, there are no watercourses within the site. A single farm dam is located in the north-eastern corner of the site. The site is not expected to be flood prone given its location at a local high point.

6.2.2.2 Mitigation Measures

An ESCP and SWMP are to be provided during the detailed design phase in accordance with the recommendations of the LUCRA (refer to **Section 6.2.1**) to ensure that runoff from the site has acceptable impacts to neighbouring properties.

6.3 Other Land Resources

6.3.1 MINING

As noted in **Figure 5**, the site is located at the intersection of two NSW Exploration and Mining Titles, including:

- EL8735 over the eastern portion of the site, held by Colossus Metals Pty Ltd; and
- EL8971 over the western portion of the site, held by Silver City Minerals Ltd.

No mining or drilling approvals are known to have been granted in relation to the site.

It is noted that the site is on the edge of the two exploration licences and thus the extreme edge of the areas of which impact as a result of mining, and thus conflict as a result of the project, is likely.

Discussions between the land owner and Colossus Metals confirms no intention to drilling or explore in the area of the proposed BESS.

At the time of finalisation of this EIS, a response from Colossus Metals as to their view of the project has not been received. Acknowledgment of attempts to make contact have been received.

An email response from the Cicero Group was received on the 27 May 2022 on behalf of Silver City Minerals (**Appendix O**) who raised no objections and noted no conflict between the project and the existing EL. The response also noted general support for BESS projects in the outer Wellington area.

It is also noted that the project is of a limited during (approximately 30 years) and thus the future use of the land for mining purposes is not precluded.

6.3.2 AGRICULTURE

6.3.2.1 Impacts

Whilst the majority of the site is mapped as BSAL (refer to **Figure 19**), detailed assessment as part of the ALUA (refer to **Appendix E**) in accordance with the *Interim protocol for site verification and mapping of Biophysical Strategic Agricultural Land* (Office of Environment and Heritage 2013) determined that only the Red Friable Soil is BSAL (p. 25). The loss of the confirmed area of BSAL is acceptable on the grounds that:

- Upon cessation of the use of the site for a BESS, the land would be capable of being returned to agricultural activities;
- The site, capable of individual sale by way of having its own title, is not viable for independent use for agricultural purpose given its limited size of 18 hectares;
- The development footprint is limited to 6 hectares, representing a minor portion (4%) of the 140.8 hectare landholding and 0.002% of the 290,534 hectares of land mapped as Class 3 within the DRC LGA;
- The development footprint is located in the north-western corner of the landholding, ensuring that it will not result in fragmentation of agricultural lands within the landholding;
- The band of Red Friable Soil is narrow (approximately 1 kilometre in width) with adjoining soils (Rocky Soil and Brown Plastic Soil) being assessed as non-BSAL in the ALUA (p. 25);
- Land within the locality is highly fragmented (LEP minimum lot size is 400 hectares); and

- As discussed in **Section 2.1.2**, the site is located within the REZ, and is therefore strategically identified for the purposes of providing electricity generating infrastructure.

6.3.2.2 Mitigation Measures

The following measures would be implemented to minimise or mitigate impacts to agricultural land use and productivity:

- Prepare and effectively implement construction, operation and decommissioning management plans that incorporate all mitigation measures in this EIS.
- Undertake consultation with the landowner of the project area to:
  - ensure agricultural considerations are incorporated into the final design.
  - negotiate arrangements for safe passage and access for their surrounding agricultural land uses and resources.
  - determine appropriate offsets for loss of income from impacts to agricultural productivity.
  - inform preparation of the Pasture Management Plan.

6.3.3 URBAN DEVELOPMENT

The site is unlikely to be used for urban purposes in the short, medium or long term because:

- The RU1 Primary Production land use zone applying to the majority of site under the DRLEP 2021 does not permit urban land uses;
- No planning proposals are known to have been submitted to DRC to seek rezoning of the site;
- The site is not identified as an "urban investigation area", "urban release area" or similar under an environmental planning policy or under any of the strategic policies considered in **Section 2.1** of this report;
- The site is substantially separated from established urban areas, meaning that any urban development would require extensive extension and augmentation of essential services; and
- The impacts of urban development are significantly greater than that of a BESS as the former is permanent whilst the latter is to be decommissioned within 30 years before the land is rehabilitated to pre-development conditions.

6.3.4 LAND USE CONFLICT RISK ASSESSMENT

The Land Use Conflict Risk Assessment (LUCRA; Premise 2022) attached at **Appendix F** considers and assesses the range of potential conflicts associated with the development. It concludes (p. 60):

> *The LUCRA identified a total of 35 potential land use conflicts.*
>
> *The initial risk ranking identified 14 low risk and 21 moderate risk conflicts.*
>
> *The revised risk ranking identified 30 low risk and 5 moderate risk conflicts.*
>
> *The average risk ranking of all identified conflicts was reduced from an initial risk ranking of 11.9 (moderate risk) to a revised risk ranking of 7.8 (low risk).*
>
> *The average revised risk ranking for all identified land use was below 10 which is consistent with the LUCRA objective to lower the revised risk ranking to 10 or below.*

Revised risk rankings identified low risk conflicts mostly related to access and traffic, nuisance and competing industries.

Revised risk rankings identified moderate risk conflicts for the following:

- *All land uses*
    - *Risk to property, including bushfire and flooding risks.*
- *Agricultural land use*
    - *Economic Interest, including impacts to insurance premiums and land values.*
- *General public:*
    - *Environmental concerns, including the potential for cumulative impacts*
    - *Economic Interests, including impacts to insurance premises.*
- *Tourism industry land use:*
    - *Health and safety, including concerns regarding the proximity of the BESS to the caves.*

6.4 Biosecurity

6.4.1 IMPACTS

The primary object of the NSW *Biosecurity Act 2015* is to:

> *provide a framework for the prevention, elimination and minimisation of biosecurity risks posed by biosecurity matter, dealing with biosecurity matter, carriers and potential carriers, and other activities that involve biosecurity matter, carriers or potential carriers.*

The Central West Regional Strategic Weed Management Plan (NSW Local Land Services Central West 2017) specifies:

- Prohibited matters, mandatory measures and general biosecurity duties to manage weeds.
- The prevention, elimination, containment and asset protection measures for priority weeds in the GMC LGA.
- Appendices containing specific requirements for State priority weeds:
    - Prevention:
        - Chilean needle grass – Nassella neesiana
        - Hymenachne – Hymenachne amplexicaulis and hybrids
        - Hygrophila – Hygrophila costata
        - Kidneyleaf mud plantain – Heteranthera reniformis
        - Long-leaf willow primrose – Ludwigia longifolia
        - East Indian hygrophila – Hygrophila polusperma
        - Peruvian primrose – Ludwigia peruviana
        - Sagittaria – Sagittaria spp.

- Salvinia – Salvinia molesta
- Yellow waterlily – Nymphaea Mexicana

– Eradication:
- Mesquite – Prosopis spp.
- Carrion flower, Star flower – Orbea variegate
- Burr ragweed – Ambrosia confertiflora
- Fireweed – Senecio madagascariensis
- Harrisia cactus – Harrisia spp.
- Hudson pear – Clyindropuntia pallida (syn. C rosea) and C. tunicate

– Containment:
- Athel pine – Tamarix aphylla
- Blue heliotrope – Heliotrope amplexicaule
- Coolatai grass- Hyparrhenia hirta
- Serrated tussock – Nassella trichotoma

– Asset protection:
- Bridal creeper – Asparagus asparagoides
- Giant reed – Arunda donax
- Honey locust – Gleditsia triacanthos
- Johnson Grass – Sorgm halpense
- Mother of milliopns – Bryophyllum spp.
- Prickly pears (Coral, Rope, Walking stick pears) – Cylindropuntia spp. Excluding C. pallida syn. Rosea
- Prickly pears (Pad cactus, Tiger, Creeping, Tree wheels, Common and Spiny Pears) – Opuntia spp. Except O. ficus-indica
- Spiny burrgrass – Cenchrus longispinus and spinifex (syn C. incertus)
- Silver-leaf nightshade – Solanum elaegnifolium
- Cats claw creeper – Dolichandra unguis-cati (syn. Macfedyena ungios cati)

A weed assessment of the project area was undertaken as part of the BDAR attached at **Appendix G**. The assessment identified two high threat exotic weed species, Great Brome (Bromus diandrus) and Paspalum (Paspalum dilatatum) under the NSW *Biosecurity Act 2015*.

Potential biosecurity impacts include:

- Introduction and spreading of weeds or pathogens in the project area through increased movement of vehicles and people during the construction and decommissioning phases;
- Spreading of weeds or pathogens outside the project area, from tracking of materials on vehicles and people leaving the site and spread of weeds from the site onto surrounding properties via seeding events or lateral growth;
- Attracting pest animals to the project area; and
- Introduction of contaminated soil into the project site during construction activities being a potential vector for disease introduction.

6.4.2 MITIGATION MEASURES

Mitigation measures include:

- Preparing a Weed Management Plan in accordance with the Central West Regional Strategic Weed Management Plan and *NSW Biosecurity Act 2015* and in consultation with DRC, NSW DPI and the landowner;
- Restricting vehicle movements by establishing and using formed access tracks;
- Use of vehicle wash down stations to prevent the transport of weeds and pathogens to and from the project area;
- Ensure all waste containers are covered to prevent pest animal access to food waste, and ensure waste is regularly removed from the site;
- Establishing and maintaining perimeter fencing to minimise pest animal access to the project area;
- Conduct routine monitoring for pest species and implement control measures if required, and in accordance with industry best practice;
- Prepare and effectively implement construction, operation and decommissioning management plans that incorporate all mitigation measures in this EIS; and
- Ensuring any imported fill has appropriate chains of custody and testing to limit the potential for the introduction of diseases.

Where the above mitigation measures are effectively implemented during each phase of the project, it is unlikely that the development would significantly increase biosecurity risks at the development site and surrounding properties.

6.5 Biodiversity (Flora and Fauna)

A Biodiversity Development Assessment Report (BDAR; Premise 2022) has been prepared as part of this application and is attached at **Appendix G**. The following findings are made in the BDAR (p. 26):

> *The proposed BESS at 9010 Mitchell Highway, Apsley, NSW will result in the loss of 0.03 ha of native vegetation to provide safe access to the site from the highway. The native vegetation does not provide habitat for any threatened flora or fauna and does not require offsetting under the Biodiversity Offsets Scheme.*

6.6 Bushfire

6.6.1 IMPACTS

The site is not mapped as bushfire prone land. However, land within 140 metres of the site is mapped as bushfire prone, the nearest being mapped as a bushfire buffer, adjacent category 2 bushfire prone land. The closest category 1 bushfire prone land is located approximately 900 metres to the east. Accordingly, a Bushfire Risk Assessment (BRA; Premise 2022) is provided at **Appendix H**.

6.6.2 MITIGATION MEASURES

The BRA includes mitigation measures for the provision and maintenance of an asset protection zone (APZ), implementation of construction standards, and provision of water, electricity, gas and access, as well as other mitigation measures. A summary of each is provided in the subsequent sections.

6.6.2.1 Asset Protection Zones

Based on an analysis of vegetation within 140 metres of the site, the effective slope of the land and the relevant firefighting danger index (FFDI) for the LGA, ten metre-deep APZs are recommended in the BRA. There are to be maintained as follows (p. 11):

This bushfire assessment assumes that the recommended 10m APZ would be managed to the prescribed APZ (IPA) standards e.g., fuel free (sand, gravel, concrete) or short mown grass <10cm high. There are no known environmental constraints to the ongoing management of the APZ to this standard, noting that management does not impact on any mapped drainage lines.

6.6.2.2 Building Construction Standards

It is acknowledged in the BRA that *"the construction of the BESS and ancillary infrastructure is inherently constructed of fire resilient materials"* (p. 12). Nevertheless, the risk of accidental fire ignition during construction and operation remains. This is to be mitigated through the following measures (p. 12):

- *APZ (10m IPA) and water supply (hydrants/tank) for bushfire fighting purposes to be constructed as the first stage of development.*
- *Construction of the BESS and associated infrastructure to the general fire safety provisions of the National Construction Code (NCC).*
- *Permits for hot works (e.g., grinders, welders, slashers) and no hot works on Total Fire Ban Days.*
- *Essential equipment should be designed and housed in such a way as to minimise the impact of bush fires on the capabilities of the infrastructure during bush fire emergencies. It should also be designed and maintained so that it will not serve as a bush fire risk to surrounding bush. In this regard it is recommended that substations and other new building be constructed to comply with Australian Standard AS 3959- 2018 Construction of buildings in bushfire-prone areas, commensurate with the modelled bushfire attack levels.*

6.6.2.3 Water, Electricity and Gas Supply

The site does not have access to a reticulated water supply. Accordingly, water must be transported to the site for fire-fighting purposes. The BRA includes the following recommendations with respect to the water supply and access to it (p. 13):

- *Strategically located within the site to ensure accessibility, (e.g., adjacent to the existing vehicle access road and adjacent to the planned BESS);*
- *Have a capacity of 50,000-80,000 litres;*
- *Be made of steel or concrete;*
- *The tank should incorporate fast fill options and easily accessible fill points such as 65mm Storz fittings for hydrant stands or direct link to tanks; and*
- *Hardstand access capable of supporting weight and turning capacity for a fully loaded fire truck (23 tonne) should be provide at the tank location.*

The following mitigation measures are recommended in the BRA to meet the requirements of the *Planning for Bushfire Protection* (PFBP; RFS 2019) with respect to the proposed overhead electrical connection between the BESS and the 132 kV lines to the east (p. 13):

- *Short pole spacing preferred (30m); and*

- *No part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines.*

Should bottled gas be required on site, it is to be maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities (BRA, p. 13).

6.6.2.4 Access

The following requirements for property access are recommended in the BRA (pp. 13, 14):

- *The property access road is to be two-wheel drive, all weather, with a road surface capable of carrying a fully loaded firefighting vehicle (up to 23 tonnes).*
- *Any bridges and causeways are to clearly indicate the load rating.*
- *The access road can be sealed or unsealed. Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads.*
- *Access is to be provided to hydrants that are provided in accordance with the relevant clauses of AS 2419.1:2005*
- *OR*
- *There is to be a suitable access for a category 1 fire appliance to within 4m of the water tank where no reticulated water supply is available.*
- *The access road is to be provided with a turnaround provision of 22m diameter or a 'T' junction at the position of the dedicated water supply tank.*
- *The road is to be a minimum 4m carriageway width and have a minimum 4m vertical clearance to any overhanging obstructions, including tree branches.*
- *The access road must provide a passing bay every 200m that is 20m long x 2m wide, making a minimum trafficable width of 6m at the passing bay. Curves in the access road are to have a minimum inner radius of 6m and are to be minimal in number to allow for rapid access and egress.*
- *The access road has a crossfall less than 6 degrees.*

6.6.2.5 Other Mitigation Measures

In addition to the above design mitigation measures, measures are recommended during detailed design, construction, prior to commencement of operations and during operations. Each is discussed in the following sections.

6.6.2.5.1 Detailed Design

The following recommendations are provided in the BRA for the detailed design phase (p. 14):

> *As detailed design progresses, equipment suppliers are selected, and the BESS layout is refined, it is proposed to further consult with both the RFS and FRNSW. The intention of this consultation will be twofold.*

1. *To provide detail on the technology proposed and the proposed farm layout to allow (if necessary) design refinement to incorporate any specific requirements the RFS/FRNSW may have; and*

2. *To provide the requisite information that will be needed to prepare an Emergency Response Plan (ERP).*

In terms of design principles to minimise risk, the layout will be designed to:

- *provide a defendable space around infrastructure;*
- *ensure that appropriate access, egress and manoeuvrability within the facility is provided for first responders;*
- *provide for ongoing management and maintenance of bush fire protection measures; and*
- *ensure that services are adequate to meet the needs of firefighters.*

6.6.2.5.2 Construction

The following mitigations measures are recommended in the BRA prior to or during construction (pp. 14, 15):

- *Prior to construction commencing the EPC contractor will engage with Wellington RFS local brigade and details about the construction schedule, contact numbers and site access arrangements will be shared.*
- *Five (5) 10 kL tanks, being Static Water Supplies dedicated exclusively for fire-fighting purposes, will be located strategically around the site and appropriately plumbed for the duration of construction.*
- *The fuel load over the site prior to and during construction will be monitored and reduction measures implemented as required. These measures will be restricted to mechanical slashing or stock crash grazing.*
- *The following work practices would be implemented throughout construction:*
    - *No burning of vegetation or any waste material would take place on site;*
    - *Fire extinguishers will be available in all vehicles;*
    - *During the bushfire season (October to March) the fire danger status would be monitored daily (through the RFS website http://www.rfs.nsw.gov.au) and communicated to personnel;*
    - *Total Fire Ban rules will be adhered to. That is, the EPC contractor will not:*

- (in any grass, crop or stubble land) drive or use any motorised machine unless the machine is constructed so that any heated areas will not come into contact with combustible matter;
- carry out Hot Works (eg. welding operations or use an angle grinder or any other implement that is likely to generate sparks), unless the necessary exemption from the RFS Commissioner has been obtained and work complies with all requirements specified in the exemption; and

- *Any fuel or flammable liquid would be stored in a designated area and will be sign posted "Fuel Storage Area."*
- *A register will be maintained that confirms the quantities and location of any flammable material stored on-site.*

6.6.2.5.3 Prior to Operations

The following mitigation measures are recommended in the BRA prior to operations (p. 15):

> *Given the potential for electrical hazards associated with an energy generating facility, and potential risks to firefighters, both FRNSW and the RFS must be able to implement effective and appropriate risk control measures when managing an emergency incident in order to safely mitigate potential risks (including electrical hazards and venting electrolyte) to firefighters.*
>
> *The detail required to prepare this plan will be contingent on the equipment proposed and the BESS layout and services. These features would have been communicated to and refined in consultation with both RFS and FRNSW during detailed design. As such, the operator of the Apsley BESS will have had the information required to prepare an Emergency Response Plan (ERP) prior to commencement of operations (ie. export of electricity into the grid).*

6.6.2.5.4 Emergency Response Plan

The preparation of an Emergency Response Plan (ERP) is recommended. Recommendations relating to its contents and location are set out in the BRA as follows (p. 15):

> *The ERP will detail the appropriate risk control measures that would need to be implemented in order to safely mitigate potential risks to the health and safety of firefighters, including electrical hazards. These measures would include the level of personal protective clothing required to be worn, the minimum level of respiratory protection required, minimum evacuation zone distances and a safe method of shutting down and isolating the BESS (either in its entirety or partially, as determined by risk assessment). The ERP would also include any other risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the BESS.*
>
> *Two copies of the ERP would be stored in a prominent Emergency Information Cabinet located in a position directly adjacent to the site's main entry.*
>
> *The operator of the Apsley BESS would then make contact with the relevant local emergency management committee (LEMC) and provide a copy of the ERP.*

6.6.2.5.5 During Operations

The following mitigation measures are recommended for the operational phase under the BRA (p. 16):

> *The fuel load over the Apsley BESS property will be constantly monitored and fuel load reduction measures implemented as required. These measures will be either mechanical slashing or crash grazing (sheep). Procedures for ensuring this outcome and demonstrating active management of the fuel load will be specified in the OEMP.*

6.7 Access, Transport and Traffic

A Traffic Impact Assessment (TIA; Traffic Works 2021) is provided at **Appendix I**. It includes an assessment of sight distance, turn provisions, the Mitchell Highway / site access intersection, access location and operation,

queueing and parking based on estimated peak traffic generation during the construction phase as set out in **Table 7**. A summary of each of the above considerations is provided in the following sections, including a summary of recommended mitigation measures.

Table 7 – Directional split of peak traffic flow (Traffic Works 2021, Table 2, p. 9)

Period	Type	Left In	Right In	Left Out	Right Out	Total
AM Peak	Light	5	6	0	0	11
	Heavy	0	1	0	0	1
	TOTAL	5	7	0	0	12
PM Peak	Light	0	0	6	5	11
	Heavy	0	0	1	0	1
	TOTAL	0	0	7	5	12

6.7.1 SIGHT DISTANCE

The TIA includes an assessment of sight distances from the proposed vehicular access point, making the following conclusions (p. 13):

> *[safe intersection sight distance] and [safe sight distance] assessments have been undertaken to determine the appropriate location of the site access where sight lines are not restricted. Therefore, the longitudinal formation grade of the Mitchell Highway along the subject site's road frontage requires no grade corrections and the minimum [safe intersection sight distance] criterion for vehicular access to the subject site is shown in [**Table 8**].*
>
> *Clear sight lines of at least 303 m are available at the proposed gate access location*

Table 8 – Safe intersection sight distance values for cars and trucks at design speeds of 100km/h and 110 km/h (Traffic Works, Table 3, p. 11)

Design Vehicle	Design Speed (km/h)	Desirable Safe Intersection Sight Distance (m)
Car	110	285
Truck	100	303

6.7.2 TURN PROVISIONS

Site access will be restricted to left in/left out. The TIA includes an assessment of turn provisions during the peak hour, concluding that whilst *"the Mitchell Highway/site access intersection warrants for a rural Basic Left (BAL) type treatment"*, it is considered *"onerous"* given the limited construction period duration of five months (p. 16). A traffic management plan is recommended as detailed.

6.7.3 SITE SECURITY

The TIA includes an assessment of queuing impacts on the Mitchell Highway as a consequence of delays due to drivers waiting to clear security, concluding that *"the setback of the security fencing for the subject site will provide the minimum 20 m required to allow storage of a 19 m semi-trailer clear of the traffic lane on the Mitchell Highway"* (p. 18).

6.7.4 PARKING

The TIA includes an assessment of parking provision, concluding that (p. 18):

> *during the construction phase of the development approximately eight light vehicles are likely to access the site. Assuming all eight vehicles will be at the site at the same time, the subject site will have a car parking demand of eight spaces during the construction phase of the development.*
>
> *The proposed development does indicate the provision of a formal off-street car parking area (approximately 40.0 m x 10.0 m area) for the development. Furthermore, it is noted that should more parking be required, the site currently has enough space to accommodate any additional car parking demand for the proposed development. The designated car parking area will ensure safe operation of the site and employee safety, particularly during peak construction.*

6.7.5 MITIGATION MEASURES

The following mitigation measures are proposed within the TIA (p. 25):

- ***Recommendation 1:*** *a traffic management plan be implemented on the Mitchell Highway that includes reducing the speed limit at the site access intersection with the Mitchell Highway to 80 km/h during the peak construction phase*
- ***Recommendation 2:*** *the access point should be constructed generally in accordance with Figure 7.4 of the Austroads Guide to Road Design Part 4, for a rural property access for articulated vehicles.*

6.8 Noise & Vibration

A Noise and Vibration Impact Assessment (NVIA; Assured Environmental 2022) is provided at **Appendix K**. It includes an assessment of:

1. Construction noise;
2. Operational noise;
3. Road traffic noise; and
4. Vibration impacts.

A summary of each is provided in the following sections, as well as a summary of recommended mitigations measures.

6.8.1 CONSTRUCTION NOISE

The NVIA includes an assessment of the construction noise impacts to three receptors, making the following conclusions (pp. 11, 12):

> *For this assessment, all the construction phases were assumed to operate concurrently, which is the worst-case scenario. It can be seen from [**Table 9**], that the predicted noise levels at all receptors comply with the noise affected of 50 dB(A) during standard hours. The highest predicted noise level is expected to occur at receptor R01. Although no exceedance is observed, it is recommended that reasonable and feasible mitigation measures such as those presented in [**Section 6.8.5**] are implemented to reduce the noise impact at this receptor.*

Table 9 – Predicted receptor noise levels – daytime, dB(A) (all construction phases run concurrently) (AE 2022, Table 5, p. 12)

Receptor	Maximum Predicted Noise Level, $L_{Aeq, 15\ min}$ daytime period across all scenarios	Noise Management Level (standard Hours)		Comply (Y/N)
		Noise Affected	Highly Noise Affected	
R01	43	50	75	Y/Y
R02	41	50	75	Y/Y
R03	36	50	75	Y/Y

6.8.2 OPERATIONAL NOISE

The NVIA includes an assessment of the operational noise impacts to three receptors, making the following conclusions (p. 17):

> *[**Table 10**] below presents predicted receptor noise levels during the operational phase of the proposed BESS. Review of the predicted noise levels confirms that compliance with the intrusive noise criteria established in accordance with the NPfI can be achieved for all receptors for both day, evening, and night periods under worst-case meteorological conditions.*

Table 10 – Predicted receptor noise levels – operational phase, dB(A) (AE 2022, Table 11, p. 17)

Receptor	Predicted Operational Noise Level, $L_{Aeq, 15\ min}$			Intrusive Noise Criteria			Comply (Y/N)
	Day	Eve	Night	Day	Eve	Night	
R01	34	34	34	40	35	35	Y | Y | Y
R02	30	30	30	40	35	35	Y | Y | Y
R03	35	35	35	40	35	35	Y | Y | Y

6.8.3 ROAD TRAFFIC NOISE

The NVIA includes an assessment of the road traffic noise impacts during the construction and operational phase, making the following conclusion (p. 18):

> *Noise impacts associated with vehicle movements during the operational phase of the BESS project are expected to be negligible as no staff will be permanently based on-site. Visitation will be limited to periodic maintenance and infrequent plant and equipment replacements. During construction and any future decommissioning of the farm however, traffic movements will be more significant.*

Accordingly, the NVIA provides an assessment of the potential noise impacts from vehicular movements on the receptors nearest to the site access from the Mitchell Highway, making the following conclusion (p. 19):

*Review of the predicted noise level presented in [**Table 11**] below confirms that compliance with the RNP is achieved at the closest receptors to each potential route.*

Table 11 – Predicted $L_{Aeq,\ 15\ min}$ noise levels – road traffic noise (AE 2022, Table 14, p. 19)

Sensitive Receptor	Setback from Roadway	Period	Parameter	Criteria	Predicted Noise Level	Comply (Y/N)
Mitchell Highway Road	16 m	Day Night	$L_{Aeq,\ 1\ hour}$ $L_{Aeq,\ 1\ hour}$	60 dB(A) 55 dB(A)	53 50	Y Y
Curtis Road	16 m	Day Night	$L_{Aeq,\ 1\ hour}$ $L_{Aeq,\ 1\ hour}$	55 dB(A) 50 dB(A)	50 47	Y Y

6.8.4 VIBRATION

The NVIA includes an assessment of the vibration impacts during the construction phase, making the following conclusions (p. 22):

The predicted vibration levels presented in Table 19 indicate compliance with the continuous maximum vibration nuisance criteria for locations at a separation distance of 50-60 metres. Compliance with the building damage criteria is predicted at 10 metres from construction for each source. Therefore, as the closest receptor is 300m from the nearest vibration source, there will be no adverse impact

For intermittent vibration associated with haul vehicles , it is difficult to provide an appropriate comparison with the relevant criteria (which is presented as a Vibration Dose Value (VDV) in $m/s^{1.75}$). The calculation of a VDV requires both the overall weighted RMS (root mean square) acceleration (m/s^2) typically obtained from on-site measurements and the estimated time period for vibration events.

It is noted, however, that the compactor PPV at distances of 300 m (the distance to the nearest sensitive receptor from potential piling) is predicted to be within the maximum continuous criteria of 0.56 mm/s. This comparison with the continuous criteria (as a conservative approach) indicates that vibration levels associated with compactor are not considered to be significant (which is expected given the significant separation distances).

6.8.5 MITIGATION MEASURES

Notwithstanding that the development is compliant with relevant construction noise criteria, the NVIA includes the following mitigation measures for the construction phase (p. 12):

- *Limiting the type and scale of concurrent activities undertaken close to sensitive receptors where possible;*
- *Using broad-band reversing alarms on all mobile plant and equipment;*
- *Examine different types of machines that perform the same function and compare the noise level data to select the least noisy machine;*
- *Operating plant in a quiet and efficient manner;*

- *Reduce throttle setting and turn off equipment when not being used; and*
- *Regularly inspect and maintain equipment to ensure it is in good working order including checking the condition of mufflers.*

It is recommended that during any work generating high noise levels that have impulsive, intermittent, low frequency or tonal characteristics, consultation with sensitive receptors occurs regularly.

In addition, piling activities which are predicted to exceed 50 dB(A) at any sensitive receiver must only be undertaken:

- *between the hours of 7:00am and 6:00pm Monday to Friday; and*
- *between the hours of 8:00am and 1:00pm Saturday;*
- *in continuous blocks of no more than three hours, with at least a one-hour respite between each block of work generating high noise impact, where the location of the work is likely to impact the same receivers.*

Notwithstanding that the development is compliant with relevant operational noise criteria, the NVIA includes the following mitigation measures for the operational phase (p. 16):

- *Noise barriers are proposed as shown in Figure 2. In order to be effective, the acoustic barrier would need to be free of gaps and be constructed of material with a mass density greater than or equal to 12 kg/m2 excluding structural components.*

6.9 Visual Impact

6.9.1 PUBLIC DOMAIN VIEWS

A Visual Impact Assessment (VIA; IRIS 2022) has been prepared as part of this application and is attached in **Appendix J**. A visual catchment is determined in the VIA using LiDAR data and the height of the proposed battery and MVPS containers, in GIS software. It does not take into consideration visual obstacles such as vegetation and buildings. Accordingly, the visual impact is ground-truthed as described in the VIA (p. 15, p. 16):

Views were selected to represent the range of locations from the public domain that would see the project. The selection of representative viewpoints prioritises locations where there would be a larger number of potential viewers, such as the highway, but also includes local viewing locations such as surrounding roads. Note, there were no lookouts, recreational areas or scenic routes with a view to the site.

…

A visual impact level has been determined for each view by combining the sensitivity and magnitude level according to the matrix … based on the 'Landscape character and visual impact rating matrix' contained in the Guidance note EIA-N04 Guidelines for Landscape Character and Visual Impact Assessment (Figure 7, p.12, TfNSW, 2020).

Five viewpoints representative of the range of views to the project from the public domain were selected and assessed as part of the VIA:

1. View south-east from the Mitchell Highway rest stop;
2. View southeast from the Mitchell Highway;
3. View east from the Mitchell Highway, about 45 metres from proposal;
4. View north from the driveway entrance at 9010 Mitchell Highway; and
5. View north from the Mitchell Highway.

The view impact of the proposed development from each of the five locations in the public domain is determined in the VIA to be (p. 27):

- Negligible or low in the short term, with the exception of Viewpoint 3 which is determined to be moderate; and
- Negligible in the medium to long term.

6.9.2 PRIVATE DWELLING VIEWS

Additionally, the visual impact of the proposed development as viewed from the ten residences within two kilometres of the site is considered as part of the VIA. The following sections provide a summary of the visual impacts of the development on:

- Dwellings north and west of the site;
- East of the Mitchell Highway, north of the site; and
- East of the Mitchell Highway, south of the site.

6.9.2.1 Dwellings North and West of the Site

The VIA includes the following assessment with respect to the existing dwellings north and west of the site, as well as a planned (not yet proposed) dwelling at 9091 Mitchell Highway (pp. 28, 29):

> *Most dwellings to the north and west of the proposal site, to the west of the Mitchell Highway, would not have a view to the proposal (R1, R7, R8 and R10). This is due to the flat and low-lying site landform, and intervening landform and vegetation between the site and nearby dwellings, that would screen the view to the site.*
>
> *There is one dwelling (R2) in closer proximity to the proposal site, located immediately west of the highway, about 380 metres north of the site, at 9091 Mitchell Highway. The primary view from this dwelling would be to the north and northwest, oriented away from the highway and proposal site. The trees surrounding this dwelling, and along the highway would block views to the proposal site and there would be no visual impact.*
>
> *The land owner at 9091 Mitchell Highway is also considering constructing an additional dwelling on this property in the future, on an elevated site to the south of the existing dwelling (R2), about 370 metres north west of the proposal. While there is no plans for this house, or development application with Council at the time of writing. As this site is slightly elevated above the Mitchell Highway, there would be greater visibility of the proposal than the existing dwelling (R2). However, it is assumed that the design of this future dwelling would have living and entertaining areas orientated to the north to northeast, or to the northwest, with views orientated towards the Bell River valley and the Catombal Range, away from the highway (and therefore away from the proposal). This aspect is the most suitable for the climate and would orient the house towards the most scenic views from this property.*

6.9.2.2 Views from Dwelling East of the Mitchell Highway

The VIA includes the following assessment with respect to the existing dwelling east of the Mitchell Highway (9092 Mitchell Highway) (p. 31):

> *The dwelling at 9092 Mitchell Highway (R5) is likely to have a view to the proposal. This dwelling is located about 650 metres north of the northern proposal site boundary. The dwelling is slightly elevated above the site, located on a small and partly vegetated hillside.*
>
> *There would be views south towards the site, these with some filtering by intervening existing trees and shrubs within the garden surrounding the house and on intervening fields. However, dwelling appears to be orientated towards northerly views to the low-lying farmland between the Bell and Macquarie Rivers, south of Wellington (away from the proposal site).*
>
> *There would be clear southerly views to the proposal from the driveway of this property, which is aligned generally parallel to the northern site boundary, and leads to the dwelling. This view would be open and unobstructed. This view would vary in distance of between about 360 and 650 metres (refer to Figure 7-1).*
>
> *The battery storage area would be visible as groups of battery containers arranged parallel to the view, forming a horizontal built element in a small portion of the visible fields. There would be a chainmesh fence along the site boundary and substation infrastructure to the east. The substation would include some taller structures rising above the site and potentially above the horizon. There would be a small length of noise barrier around the transformer, about 4.5 metres tall, setback and visible beyond the substation. These built elements would replace what is an otherwise contiguous area of rural landscape. In the short term there would be a **minor-moderate visual impact** from the construction and operation of this proposal.*

6.9.2.3 Views from Dwellings East of the Mitchell Highway, South of the Site

The VIA includes the following assessment with respect to the existing dwellings east of the Mitchell Highway, south of the site (p. 33):

> *There is one dwelling to the south of the proposal site that is located about 280 metres from the proposal. This dwelling (R3) at 9010 Mitchell Highway is associated with the proposal. Due to the existing trees and sheds surrounding this dwelling (refer Figure 8-4) there would be no view to the site from this dwelling.*
>
> *There are also two dwellings further to the south, located at 8958 Mitchell Highway (R9) 8950 Mitchell Highway (R6). Views to the proposal site from these dwellings are also blocked by an intervening vegetated ridgeline about 600 metres to the north, which would fully conceal views to the proposal.*

6.9.3 MITIGATION MEASURES

The following measures are proposed in the VIA to mitigate visual impacts from public domain and private dwelling viewpoints:

- *20-metre wide area of screening vegetation along northern side of the security fence, (assume four offset rows including two rows of native trees and shrubs such as Callistemon sp. and Casuarina sp. or similar, and two rows of shrubs, such as Acacia sp.)*

- *Five-metre wide screening vegetation along the western and southern side of the security fence (assume two offset rows of small trees such as Callistemon sp. and Casuarina sp. or similar, and shrubs, such as Acacia sp.)*
- *Tree planting along western site boundary, about 20 metres wide x 150 metres long, along the Mitchell Highway, including native tree species to match roadside planting character north of the site.*

Planting in the proposed screen planting areas would be laid out in a staggered arrangement and at a density to achieve an overlap between plant foliage and the screening effect. Fast growing, native plant species are recommended, preferably in tube stock size, for quick establishment and long-term health.

There would be a 12-month establishment and 24-month monitoring period to ensure establishment of the proposed planting areas. The proposed planting would be subject to ongoing maintenance as a part of the operations phase of the BESS project.

For the avoidance of doubt, all screening is proposed within the boundaries of the subject property.

6.10 Waste

6.10.1 LEGISLATIVE FRAMEWORK

The management of waste in NSW, including recycling, is via the POEO Act and the *Waste Avoidance and Resource Recovery Act 2001* (WARR). The WARR sets out a hierarchy of management, including avoidance, recovery and then disposal.

6.10.2 CONSTRUCTION WASTE

From a waste perspective, the construction program will generate a range of solid waste, including:

- Packaging materials;
- Building materials;
- Scrap metal;
- Excess soil;
- Plastic and masonry products;
- Vegetation from clearing;

Waste generated through the construction phase would be managed in accordance with an adopted waste management plan, with consumption avoidance being the first management tier, following by on site reuse/recycling where possible (ie, mulch from vegetation clearing). As a last resort, waste would be removed from the site and either recycled or disposed of at an appropriate waste disposal facility.

Effluent disposal would be limited to provision of short term services to service the construction workforce. Transportable services would be provided and emptied by suitable contractors. These would be removed at the completion of the construction period.

6.10.3 OPERATIONAL WASTE

Operational waste associated with the facility is of a limited nature, being likely limited to small amounts of packaging associated with plant maintenance/replacement and general waste from site staff.

Noting the project 30 year life of the project it is likely that batteries will require replacement 2-3 times during the life of the project.

Batteries are classed as hazardous waste and their transport for disposal or recycling is regulated under the Australian Code for the Transport of Dangerous Goods by Road and Rail. The operator will be required to ensure that all transport requirements are met for the off-site transport of batteries at their end of life. This would be managed by the operator at the time in line with the applicable hazardous materials requirements in effect at that time.

As the development of large scale batteries increases in Australia, in response to the shifting methods of energy generation and management, together with increased uptake of electric cars, there is the likely potential for an increase in batteries requiring recycling or disposal. This will increase opportunities for on-shore recycling operations and avoid the need for export of these materials, a shift that is now increasingly evident in the domestic market.

6.10.4 WASTE DURING DECOMMISSIONING

Waste generating during the decommissioning phase would be managed in a manner consistent with the construction phase, including waste avoidance, reuse and finally disposal.

Waste expected to be generated includes electrical infrastructure including batteries, inverters, transformers and other components and cabling.

The majority of materials would be reused or recycled where possible. Disposal of batteries would occur in accordance with the hazardous waste policies in effect at the time of decommissioning.

Any items that cannot be reused or recycled, would be disposed of as waste at appropriate facilities in line with applicable regulations. Those on site materials that remain of use to the landowner (such as roads) or the electricity authority (such as the switching station) would remain on site, subject to agreements with the landowner.

The majority of materials are able to reused or repurposed, and this would be the core aim of the decommissioning phase.

6.10.5 MITIGATION MEASURES

A waste management plan is to be provided as part of the CEMP, identifying opportunities to minimise waste and maximise opportunities recovery and reuse of waste generated on-site.

6.11 Air and Microclimate

6.11.1 EXISTING ENVIRONMENT

6.11.1.1 Air quality data

Given the rural setting of the project, air quality in the locality is expected to be reasonable and consistent with rural environments in NSW. Likely existing sources of air pollution include emissions from vehicles (including those using the Mitchell Highway and rural vehicles), dust from agricultural operations, and, potentially, emissions from wood heaters used in residential properties.

Meteorological conditions that influence air quality include gradient wind flow regimes and local conditions typically driven by topographical features, namely drainage flows. Wind speed, wind direction and topography influence dispersion and transport of plumes.

DPE provide data services which record air quality information around NSW. The nearest recording station to the project site is at Orange (Jaeger Reserve, Hill Street). This site has been recording data since 2019.

The Orange site records the following air pollutants and meteorological variables:

- Visibility using nephelometry
- Fine particles as $PM_{2.5}$
- Fine particles as PM_{10}
- Wind speed, wind direction and sigma theta
- Ambient temperature
- Relative humidity
- Rainfall

DPE categorises air pollutants by air quality categories, as set out in **Table 12**.

Table 12 – DPE Air Quality Categories

Air pollutant	Averaging period	Units	Good	Fair	Poor	Very poor	Extremely poor
Ozone O_3	1-hour	pphm	<6.7	6.7–10.0	10.0–15.0	15.0–20.0	20.0 and above
Ozone O_3	4-hour rolling	Pphm	<5.4	5.4–8.0	8.0–12.0	12.0–16.0	16.0 and above
Nitrogen Dioxide NO_2	1-hour	Pphm	<8	8–12	12–18	18–24	24 and above
Visibility Neph	1-hour	Bsp	<1.5	1.5–3.0	3.0–6.0	6.0–18.0	18.0 and above
Carbon monoxide CO	8-hour rolling	Ppm	<6.0	6.0–9.0	9.0–13.5	13.5–18.0	18.0 and above
Sulfur dioxide SO_2	1-hour	Pphm	<13.3	13.3–20.0	20.0–30.0	30.0–40.0	40.0 and above
Particulate Matter (PM) <10 µm PM_{10}	1-hour	µg/m^3	<50	50–100	100–200	200–600	600 and above
Particulate Matter (PM) <2.5 µm $PM_{2.5}$	1-hour	µg/m^3	<25	25–50	50–100	100–300	300 and above

Pollutant measurements at the Orange station for July 2021 to July 2022 are outlined in **Table 13**.

Table 13 – Orange Pollutant Measurements

	Ozone 1hr average	Ozone 4hr average	Particles PM10	Particles PM2.5	Visibility NEPH
	pphm	pphm	µg/m^3	µg/m^3	bsp
31/07/2021			11.8	8.6	0.37
31/08/2021			13	9.5	0.36

	Ozone 1hr average	Ozone 4hr average	Particles PM10	Particles PM2.5	Visibility NEPH
30/09/2021			11.5	7.5	0.25
31/10/2021		2.4	10.4	5.1	0.15
30/11/2021	2.2	2.2	7.4	3.9	0.11
31/12/2021	2.4	2.3	9	4.2	0.13
31/01/2022	2.1	2.1	8.2	4.6	0.16
28/02/2022	2	1.9	8.3	3.6	0.11
31/03/2022	1.9	1.9	7.5	3.8	0.1
30/04/2022			8.9	5.3	0.17
31/05/2022			8.5	5.4	0.25
30/06/2022			12.6	9.8	0.41

All of the above readings fall within the 'good' classification by reference to the DPE air pollutant classification ratings (the highest category) at **Table 12**, reflecting that the current environment is a good quality air environment.

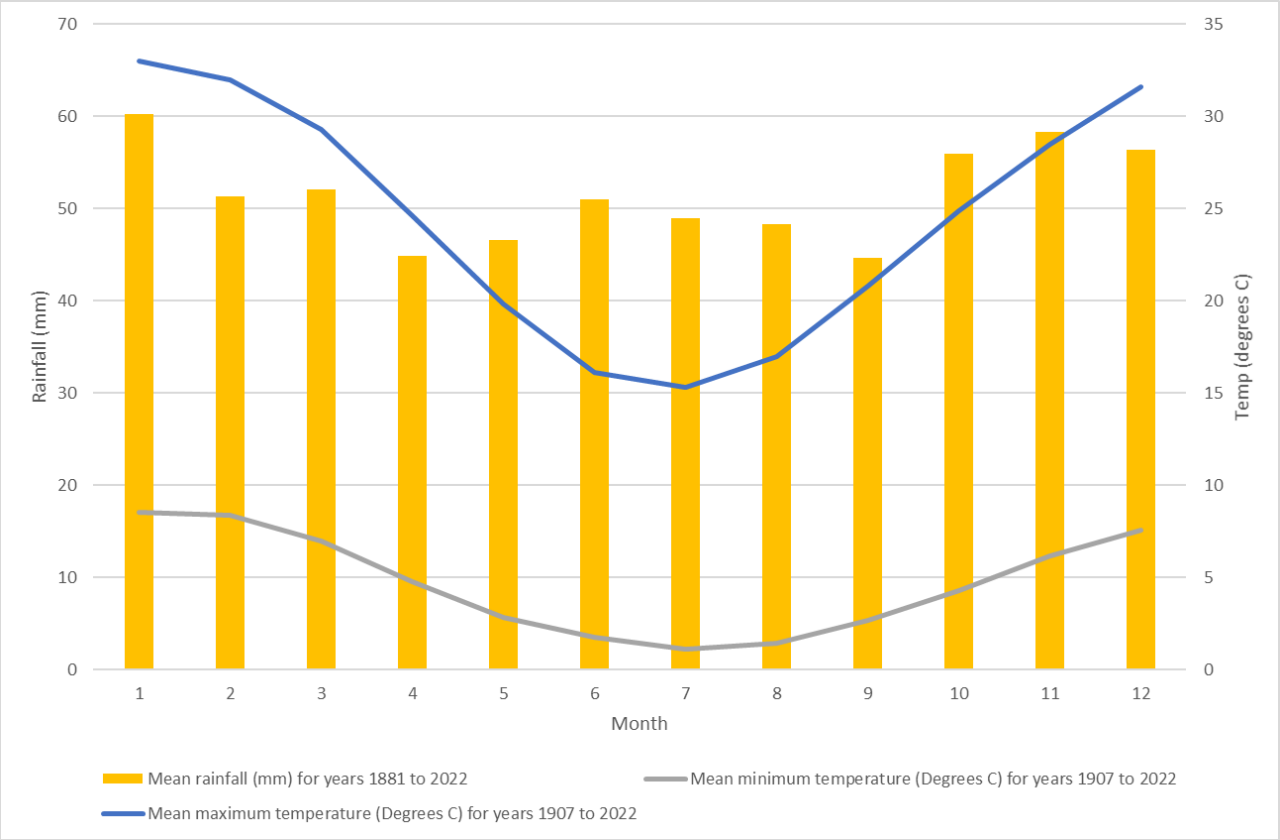
6.11.1.2 Climate

The closest Australian Bureau of Meteorology (BoM) weather station with daily weather observations is Wellington (D&J Rural) (Station 065034), located approximately 5 km north of the site.

Summary climate statistics are provided below and depicted in **Figure 24**:

- The mean annual maximum temperature is 24.4°C and the mean annual minimum temperature is 9.4°C (BoM, 2022).
- Mean annual rainfall is 616.4 mm and records indicate monthly mean rainfall received at the site is highest in the months of November through to March (BoM, 2022).

Figure 24 – Climate statistics for the locality



6.11.1.3 Climate change

It is now generally accepted by the scientific community that certain emissions have a contributory impact to climate change. Emissions associated with construction and maintenance activities, such as those associated with the construction and operation of the Apsley BESS, contribute to climate change.

6.11.2 POTENTIAL IMPACTS

Sensitive receivers near to the property are the primary recipient of impact as a result of potential changes in air quality as a result of the project. These impacts are expected to be largely localised (within approximately 500 metres of the project site) with respect to human and ecological receivers.

There is one non associated receiver within 500 metres of the project boundary, located to the north at a distance of approximately 400 metres. This residential property is located on the western side of the highway, is at a higher elevation and is separated from the subject site by a stand of established vegetation located adjacent to the highway.

Primary air quality impacts associated with the development relate to the construction and decommissioning phases of the BESS, and would include dust generation resulting from excavation, earthworks and vehicle movements. Air quality impacts associated with construction and decommissioning of the development are considered manageable via the application of the mitigation measures provided in **Section 6.11.3**.

The development is not anticipated to result in any negative air quality impacts during the operational phase. Minor impacts associated with movement of maintenance vehicles would be negligible.

On the completion of construction, cumulative air quality impacts associated with the project is considered to be negligible.

6.11.3 MITIGATION MEASURES

The CEMP would incorporate measures and protocols to minimise dust generation during the construction period. Specific measures would include but not be limited to:

6.11.3.1 Prior to construction

Development of a dust management plan as a sub-plan to the site specific CEMP, including (but not limited to) measures as set out in the following sections.

6.11.3.2 During Construction and Decommissioning

- A water cart (truck) would be utilised routinely, wetting all access roads and exposed dusty surfaces as appropriate to the conditions of the site.
- Stockpiled topsoil and other materials that exhibit significant dust lift off would be wet down routinely and as appropriate.
- Stabilising techniques and/or environmentally acceptable dust palliatives will be utilised if the wetting down of surfaces prove to be ineffective.

6.11.3.3 During Operation

- Any area that was temporarily used during construction would be restored back to original condition or re-vegetated with native plants.
- Areas that may not have been hard packed but have been disturbed in some form would be vegetated with seeds native to the area.

6.12 Safety, Security and Crime Prevention

The guidelines prepared by the NSW Department of Urban Affairs and Planning (DUAP 2001) identify four (4) Crime Prevention Through Environmental Design (CPTED) principles to be considered in a Development Application to ensure developments do not create or exacerbate crime risk. The four key principles of the guidelines include surveillance, access control, territorial reinforcement, and space management.

6.12.1 SURVEILLANCE

The attractiveness of crime targets can be reduced by providing opportunities for effective surveillance, both passive and technical. Good surveillance ensures that people can see what other people are doing. People feel safer in public areas when they can easily see and interact with others. Potential offenders are often deterred from committing crime in areas with high levels of surveillance. Deterrence can be achieved in good design via the following methods:

- Clear sightlines between public and private places;
- Effective lighting of public spaces; and
- Landscaping that makes a place attractive but does not provide offenders with opportunities for concealment to enable them to entrap victims.

The nature of the proposed use of the site does not enable persistent casual surveillance of the site, surrounding properties or the public domain. Accordingly, active surveillance is to be employed in the form of monitored, motion-sensing CCTV cameras at the site entry, site boundaries and at strategic locations throughout the site.

6.12.2 ACCESS CONTROL

Physical and symbolic barriers can be used to attract, channel or restrict the movement of people. They minimise opportunities for crime and increase the effort required to commit crime.

By making it clear where people are permitted to go or not go, it becomes difficult for potential offenders to reach and victimise people and their property. Illegible boundary markers and confusing spatial definition make it easy for criminals to make excuses for being in restricted areas. However, care needs to be taken to ensure that the barriers are not tall or hostile, creating the effect of a compound.

Effective access control can be achieved by creating:

- landscapes and physical locations that channel and group pedestrians into target areas;
- public spaces which attract, rather than discourage people from gathering; and
- restricted access to internal areas or high-risk areas (like car parks or other rarely visited areas). This is often achieved through the use of physical barriers.

Access to the facility is to be managed through:

- A security fence around the perimeter of the BESS; and
- Controlled gates, only accessible to passholders or authorised visitors.

6.12.3 TERRITORIAL REINFORCEMENT

Community ownership of public space sends positive signals. People often feel comfortable in, and are more likely to visit, places which feel owned and cared for. Well used places also reduce opportunities for crime and increase risk to criminals.

If people feel that they have some ownership of public space, they are more likely to gather and to enjoy that space. Community ownership also increases the likelihood that people who witness crime will respond by quickly reporting it or by attempting to prevent it. Territorial reinforcement can be achieved through:

- Design that encourages people to gather in public space and to feel some responsibility for its use and condition; and
- Design with clear transitions and boundaries between public and private space clear design cues on who is to use space and what it is to be used for. Care is needed to ensure that territorial reinforcement is not achieved by making public spaces private spaces, through gates and enclosures.

Given the proposed use of the site, access to unauthorised people is prohibited. Accordingly, territorial reinforcement is achieved through access control in the form of a security fence and gates which clearly delineate the boundaries between the facility, surrounding properties and the public domain.

6.12.4 SPACE MANAGEMENT

Popular public space is often attractive, well maintained and well used space. Linked to the principle of territorial reinforcement, space management ensures that space is appropriately utilised and well cared for.

Space management strategies include activity coordination, site cleanliness, rapid repair of vandalism and graffiti, replacement of burned out pedestrian and car park lighting and the removal or refurbishment of decayed physical elements.

Space management is achieved through regular maintenance of the facility and associated infrastructure including surrounding fences and gates, as well as management of landscaping within the security fence and external to its edges.

6.13 Technological Hazards

A Preliminary Hazard Analysis (PHA; Riskcon Engineering 2022) has been prepared as part of this application and is attached in **Appendix L**. Each of the following hazards identified in the PHA (p. 11) are discussed in greater detail in the following sections of this EIS:

- *Li-ion battery fault, thermal runaway and fire.*
- *Li-ion battery fire and toxic gas dispersion.*
- *Electrical equipment failure and fire.*
- *Transformer internal arcing, oil spill, ignition and bund fire.*
- *Transformer electrical surge protection failure and explosion.*
- *Electromagnetic field Impacts.*

6.13.1 LI-ION BATTERY FAULT, THERMAL RUNAWAY AND FIRE

The following degradation mechanisms are identified in the PHA as having the potential to cause thermal runaway (p. 12):

- *Chemical reduction of the electrolyte at the anode*
- *Thermal decomposition of the electrolyte*
- *Chemical reduction of the electrolyte at the cathode*
- *Thermal decomposition by the cathode and the anode*
- *Internal short circuit by charge effects*

The above events are predominantly caused by high discharge, overcharging or water ingress. As a consequence, Li-ion batteries are equipped with safety features to prevent the batteries from charging or discharging at voltages which result in battery degradation, shorting and thermal runaway. These include a shut-down separator (for overheating), tear-away tab (for internal pressure relief), vent (pressure relief in case of severe outgassing) and thermal interrupt (overcurrent/overcharging/environmental exposure). Additionally, the proposed batteries are to be lithium-ion phosphate batteries which are described in the PHA as *"one of the safest battery chemistries within the industry" (p. 13).* Additionally, the PHA provides (p. 13):

> *Additional testing for shock and damage to batteries (i.e. nail puncture test) has been shown that LFP batteries when punctured through membranes which typically results in a shorting of the battery and fire does not result in ignition of the battery demonstrating that the battery chemistry is protected against shock damage.*
>
> *In the event that LFP chemistries do ignite by artificial means, the combustion by products release carbon dioxide which reduces the oxygen concentration within a confined space reducing the combustion rate. Finally, the containers are fitted with a fire suppression system which will activate to suppress and control a fire preventing escalation to other battery units.*

For the reasons outlined above, it is determined in the PHA that *"a thermal runaway event and subsequent battery container fire is not a credible scenario"* (p. 13). Accordingly, no further assessment is required.

6.13.2 LI-ION BATTERY FIRE AND TOXIC GAS DISPERSION

The following gasses are identified in the PHA as having the potential to be emitted from a lithium-ion battery in the event of a fire:

- Carbon dioxide;
- Carbon monoxide; and
- Fluorine gases.

6.13.2.1 Carbon Dioxide

With respect to the emission of carbon dioxide from a lithium-ion battery in the case of a fire, Riskcon Engineering provides in the PHA that (p. 15):

> *Based upon a review of the sensitive areas, and the similar BESS fires (i.e. Victoria BESS fire), it is not considered that the formation of carbon dioxide in a fire would be sufficient to result in downwind impacts sufficient to cause injury or fatality. In other words, there would be insufficient production of carbon dioxide to generate a plume of sufficient concentration to displace the required oxygen for a significant downwind consequence to occur.*

Accordingly, no further assessment is required.

6.13.2.2 Carbon Monoxide

With respect to the emission of carbon monoxide from a lithium-ion battery in the case of a fire, Riskcon Engineering provides in the PHA that (p. 15):

> *…it is noted that the combustible load within the BESS which could result in the formation of carbon monoxide is relatively low compared to the available oxygen in the surrounding atmosphere. Therefore, it is considered that the formation of carbon monoxide at levels which would result in a substantial downwind impact are not considered credible.*

Accordingly, no further assessment is required.

6.13.2.3 Fluoride Gases

With respect to the emission of fluoride gases from a lithium-ion battery in the case of a fire, Riskcon Engineering provides in the PHA that (p. 16):

> *For a toxic gas dispersion a battery container fire is necessary as the initiating event. As discussed in [**Section 6.13.1**] the potential for a fire to occur is considered negligible due to the highly stable and safe battery chemistries used.*

Accordingly, no further assessment is required.

6.13.3 ELECTRICAL EQUIPMENT FAILURE AND FIRE

Electrical equipment typically starts by smouldering before flame ignition as a consequence of overheating, arcing, etc. It may then propagate to adjacent combustible material. With respect to electrical equipment failure and fire, Riskcon Engineering provides in the PHA (p. 16) that:

The type of equipment used within the project is ubiquitous throughout the world and across industry segments and is therefore not a unique fire scenario. Based upon fire development within switch rooms the fire would be considered to be relatively slow in growth and would be unlikely to result in substantial impacts in terms of offsite impact or incident propagation.

Accordingly, no further assessment is required.

6.13.4 TRANSFORMER INTERNAL ARCING, OIL SPILL, IGNITION AND BUND FIRE

With respect to transformer internal arcing, oil spill, ignition and bund fire, Riskcon Engineering provides in the PHA (p. 16) that:

Transformers contain oil which is used to insulate the transformers during operation. If arcing occurs within the transformer (e.g. due to a low oil level), the high energy passing through the coolant vaporises the oil into light hydrocarbons (methane, ethane, acetylene, etc.) resulting in rapid pressurisation within the reservoir. To minimise the likelihood of such occurrence, transformers are fitted with a low oil pressure switches and a pressure surge switch (Buckholtz relay). These devices identify potential oil and pressure events within the transformer, isolating power and alarming operators.

Notwithstanding the protection systems, if the pressure rise exceeds the structural integrity of the reservoir, and the installed pressure relief devices, the reservoir can rupture allowing the release of oil into the bund. The rupture also allows oxygen to enter the reservoir. The temperature of the gases is above the auto ignition point, but this does not occur until oxygen is present. When oxygen enters the reservoir, the gases auto ignite which generates sufficient heat to ignite the oil in the bund.

Accordingly, detailed analysis of radiant heat impact distances is conducted as part of the PHA and reproduced in **Table 14**. Contour modelling conducted as part of the PHA confirms that radiant heat contours at 4.7 kW/m^2 and 23 kW/m^2 do not impact over the site boundary. There is a possibility of minor impact over the site boundary in certain wind conditions and directions however that impact is minor. Accordingly, no further assessment is required.

Table 14 – Radiant heat from a transformer bund fire (Riskcon Engineering 2022, Table 5-1, p. 19)

Heat Radiation (kW/m^2):	Distance (m):
35	9
23	12
12.6	16
4.7	24

6.13.5 TRANSFORMER ELECTRICAL SURGE PROTECTION FAILURE AND EXPLOSION

With respect to transformer electrical surge protection failure and explosion, Riskcon Engineering provides in the PHA (p. 17) that:

In order to protect against overheating and explosions, transformers have surge protection which programs them to shut down upon detection of an energy spike. However, this can have a slight delay which is too slow to stop an electrical overload, such as in the case of a major lightning strike or significant oil deterioration, leakage of water into the transformer, and physical damage

such as a fallen tree (Ref. [9]). Therefore, there is the potential for an explosion to occur which may result in offsite impacts.

Accordingly, detailed analysis of explosion impact distances is conducted as part of the PHA and reproduced at **Table 15**. Contour modelling conducted as part of the PHA confirms that overpressure contours extend over the site boundary for both the 7 kPa and 14 kPa occurrences. Riskcon Engineering (pp. 22, 23) determine that, based on the assumption that the site boundary is occupied by a person one hour per week, the overall fatality risk at the site boundary is 1.8×10^{-7} p.a. or 0.18 per million per year (pmpy), well below the criteria of 10 pmpy set in the *Hazardous Industry Planning Advisory Paper No. 4 – Risk Criteria for Land Use Safety Planning* (DPIE). Additionally (p. 23):

The contours from a transformer explosion do not impact residences so the risk criteria at residences would be 0.

…

The same guidelines provide acceptable risk criteria … for incident propagation as 50 chances pmpy. A review of the scenarios that may lead to incident propagation shows that the 23 kW/m2 contour was not observed to impact offsite and the 14 kPa contours were not shown to impact any areas which may result in incident propagation; hence, the potential for incident propagation is zero (0) which is less than the acceptable risk criteria for incident propagation.

Table 15 – Transformer explosion overpressures (Riskcon Engineering 2022, Table 5-2, p. 20)

Overpressure (kPa)	Distance (m)
70	27
35	39
21	54
14	73
7	124

6.13.6 ELECTROMAGNETIC FIELD IMPACTS

With respect to electromagnetic field impacts, Riskcon Engineering provides in the PHA that (pp. 17, 18):

Electric and Magnetic Fields (EMFs) are associated with a wide range of sources and occur both naturally as well as man-made. Naturally occurring EMFs, occurring during lightning storms, are generated from Earth's magnetic field. Man-made EMFs are present wherever there is electricity; hence, EMFs are present in almost all built environments where electricity is used.

There are currently no existing standards in Australia for governing the exposure limits to ELF EMFs; however, the International Commission on Non-Ionizing Radiation Protection (ICNIRP) has provided some guidelines around exposure limits for prolonged exposure which limits the exposure to 2,000 milligauss (mG) for members of the public in a 24 hour period … .

A review of the site indicates there are no immediate residences adjacent to the area where the solar farm or BESS will be developed providing substantial distance for attenuation of EMFs. Based upon the typical levels which may be generated by transmission equipment the cumulative effect would not exceed the 2,000 mG limit for prolonged exposure. In addition, the closest residence is

approximately 150 m away from the EMF generating sources at the BESS; hence, the potential for the EMF to exceed the accepted levels is considered negligible.

Accordingly, no further assessment is required.

6.13.7 MITIGATION MEASURES

Notwithstanding that it is concluded in the PHA that risks at the site boundary are not considered to exceed the acceptable risk criteria, the following mitigation measures are recommended (p. 24):

- *The transformers spill containment shall be designed according to the requirements of AS 2067:2016 – "Substations and high voltage installations exceeding 1 kV a.c'*
- *A Final Hazard Analysis (FHA) shall be prepared based upon the finalised layout of the site to demonstrate that the risk criteria remains below the acceptable levels.*

6.14 Social Impact Assessment

A Social Impact Assessment (SIA; Mara 2022) has been prepared as part of this application and is provided at **Appendix M**. The SIA provides an assessment of the social impacts of the proposed development during the construction, operation and decommissioning phases, categorised as *way of life, community, accessibility, culture, health and wellbeing, surroundings, livelihoods* and *decision-making systems* impacts. A summary of the impact assessment during each phase of the project is provided in the following sections.

6.14.1 CONSTRUCTION

The construction impacts identified in the SIA are summarised in **Table 16** below.

Table 16 – Summary of Construction Phase Social Impacts

Category:	Impact:	Pre-Mitigation Impact:	Post-Mitigation Impact:
Way of Life	Construction activities will produce noise that disrupts nearby residents	The likelihood of impacts from noise during the construction period is likely. The magnitude of the impacts would be minor with some deterioration to a valued amenity. The unmitigated risk of impacts on amenity related construction noise has been assessed as Low B2.	Construction management anticipated to mitigate noise impacts, overall reducing the potential impact of noise impacts on social amenity in surrounding areas. Additionally, there is only one residence close to the work who is the owner of the subject land for the proposed BESS, the residual impact is assessed at Low C1.
Accessibility	Increased traffic on the local road network during construction impact residents and commuters	The likelihood of impacts on traffic construction is likely. The magnitude of impacts is minor. The risk of impacts on traffic from construction is rated as Medium B2.	A traffic control plan and construction management are expected to mitigate the traffic impacts, reducing the overall likelihood of impacting residents and commuters. The residual impact is assessed at Low-C2.
Surroundings	Dust and emissions from construction	Health impacts from air quality caused by	The construction management measures are anticipated to

	activity will negatively impact the surrounding residents	construction activities are possible. The magnitude of the impact would be minor because of construction management practices. The impact of construction dust and emissions is assessed at Medium C2.	mitigate the potential for dust and emissions reducing the likelihood there will be impact on the surrounding residents. The residual rating is Low D2.
Livelihood	Construction will provide 50 (FTE) direct jobs with potential indirect jobs that will benefit a range of individuals and businesses	The likelihood of economic benefit would be almost certain. The magnitude of the impact would be moderate. As such, the economic outcome related to construction is assessed as High A3 benefit.	Contracted should be encouraged to provide local opportunities for skilled and semi-skilled workers through the construction, this could include using local logistics companies, suppliers of materials, and hospitality (food and beverage). Post enhancement, the residual rating remains High A3 benefit.
Decision-making systems	Ineffective engagement with surrounding community increasing complaints	Stakeholders are interested in the project and are currently removed from decisions that impact on them; therefore the likelihood is almost certain. The magnitude of the impact would be moderate. As such, the impact is assessed as Medium C2.	Given the construction management anticipated for the project, impacts can be reduced by proactively managing relations with neighbours and the surrounding community, therefore the residual impact is rated at Low D2.

6.14.2 OPERATION

The operation impacts identified in the SIA are summarised in **Table 17** below.

Table 17 – Summary of Operation Phase Social Impacts

Category:	Impact:	Pre-Mitigation Impact:	Post-Mitigation Impact:
Community	The Apsley Bess could affect how the community relate to the character of the area	The likelihood of the BESS affecting the community is unlikely. The magnitude of the impact would be minimal. As such, the impact is assessed as Low D1.	Developing a proactive engagement strategy that includes information about the project and the lifecycle, particularly what will happen to the land post decommissioning should be considered. The residual impact is rated as Low D1.
Surroundings	Potential declines in the social amenity and how the community experiences the surroundings due to operational noise	The likelihood of ongoing noise impacts is likely and the magnitude would be minor. Therefore, the decline in social amenity from operational noise	The combination of design and operational management is anticipated to mitigate noise impacts, overall reducing the potential impact of noise impacts on social amenity in surrounding areas. While it is expected that post

		are assessed as Medium B2.	management, operational noise impact would be low, impacting very few sensitive receivers, ongoing consultation would help inform the effectiveness of mitigation measures, with adaptive management measures implemented as required. The residual impact Medium C2.
	The proposed BESS will impact visual amenity of the local area.	The likelihood of impacts to visual amenity would be likely. The magnitude of the impact would be minor. The impact of the project on visual amenity is assessed at Medium B2.	Given the mitigation measures including on site vegetative screening, landscaping and a single noise wall around the grid transformer, there will be minimal residual impact on the impact to the local area for residents and road users. The residual impact is assessed as Medium C2.
Livelihood	Increased access to jobs and business opportunities	The likelihood of increased opportunities for employment would be almost certain. The magnitude of the impact would be minimal. As such, the economic outcome related to operated is assessed as a Low A1 benefit.	The residual impact is assessed as the same.
	The installation of the BESS will change the agricultural use of the land/loss of regional productive agricultural land and negatively impact on livelihoods	The likelihood of a change in agricultural use of the land would be possible. The magnitude of the impact would be minimal. As such, the loss of agricultural land negatively impacting livelihoods is assessed as a Medium C1.	The property has a long history of agricultural production, including grazing and cropping. ACEnergy will consider ongoing primary production of the remaining land during operation. Post-decommissioning of the BESS the land will be returned to agricultural production. As such the residual assessment is Low D1.
	The BESS provides an economic investment in the region improving access to jobs and business opportunities	The likelihood of economic investment improving the livelihood and opportunities in the region would be likely. The magnitude of the impact would be moderate with a positive impact on livelihoods and as such as is assessed as a High B3.	Consulting with local businesses and tourism operators and providing opportunities for local procurement will help to enhance the positive impact from increased economic investment. The residual impact is assessed at High B3.

6.14.3 DECOMMISSIONING

The decommissioning impacts identified in the SIA are summarised in **Table 18** below.

Table 18 - Summary of Decommissioning Phase Social Impacts

Category:	Impact:	Pre-Mitigation Impact:	Post-Mitigation Impact:
Surroundings	Potential decline in social amenity through decommissioning activities disrupting the way people experience the surrounding community	The likelihood of decline in social amenity as a result of decommissioning is possible. The magnitude of the impact would be minor. The potential exists to support local training and support services organisations during the construction and operation phase, and these opportunities would be explored through an Accommodation and Employment Strategy (AES). As such, the impact on culture rated as Medium B2.	The decommissioning management is anticipated to mitigate noise impacts, overall reducing the potential impact of noise impacts on social amenity in surrounding areas. While it is expected that decommissioning noise impact would be minimal, impacting very few sensitive receivers, ongoing consultation will be required to inform any approvals and permits. The residual impact is assessed at Medium C2.
	The decommissioning of the BESS will return the land to pre-construction state, potentially improving the amenity of the local area	The likelihood of improving the amenity of the local area post decommissioning is possible. The magnitude of the impact would be minor. As such, the impact on culture is rated Medium C2.	Maintaining plants and the landscape through operations as well as rehabilitating the land to at least the pre-construction state could improve the overall amenity leaving a residual impact of Medium C2.

6.14.4 MITIGATION MEASURES

The SIA includes mitigation measures for the pre-construction, construction and operation phases.

6.14.4.1 Pre-Construction

The following mitigation measures are recommended in the SIA for the pre-construction phase (p. 43):

- *Provide communication and engagement with the community prior to site establishment. Measures could include newsletter and construction update on the scope of the project, likely high impact activities (noise, vibration, traffic, and pedestrian changes), and contact details for inquiries and complaints. Meetings/presentations with neighbouring properties and parents prior to construction should also be considered.*
- *Develop an inquiry and complaint process for the construction.*
- *Engage with the local community and neighbours to develop a working relationship to disseminate information during and after construction.*

6.14.4.2 Construction

The following mitigation measures are recommended in the SIA for the construction phase (p. 43):

- *A Construction Management Plan (CMP) should be prepared that incorporates the findings of the various project technical studies.*
- *A Traffic Management Plan (TMP) should be prepared that incorporates the findings of the various project technical studies.*
- *Implement a Heritage management including unexpected find procedure*
- *Management of complaints*
- *Ongoing communication with the community to keep residents updated on construction scheduling. This may include signage, notifications, and other appropriate communication channels.*
- *Investigate opportunities to use local contractors, suppliers, and service providers.*

6.14.4.3 Operation

The following mitigation measures are recommended in the SIA for the operation phase (p. 44):

- *Ongoing communication and engagement with the community which includes complaints management.*
- *Maintain the plants installed along the project boundaries to ensure full growth and longevity.*
- *Develop a landscape maintenance plan to include replacement of any plants that fail during the lifespan of the project.*
- *Consult with businesses, peak bodies (Chamber of Commerce), industry groups and tourism operators to provide opportunities for local procurement*
- *Create an Accommodation and Employment Strategy*

6.15 Economic Impact

6.15.1 CONSTRUCTION

Key economic impacts during construction would include:

- Increased employment;
- Investment in the local economy;
- Pressure on local services;
- Safety risks and hazards.

During the peak of construction, the project would generate around 50 jobs, which would positively contribute to the local economy. Where possible, local workers would be employed, however the nature of the some of the work, and the quantity of workers required, may result in out of area workers being employed. These would need to be accommodated. Given the limited size of Wellington, it is expected that workers would reside in

Dubbo and Orange and travel by bus or private car to the site each day. The potential exists to support local training and support services organisations during the construction and operation phase, and these opportunities would be explored through an Accommodation and Employment Strategy (AES).

There is also the potential for impacts to local services and employment. Mitigation measures are recommended for adoption so that any residual impacts can be managed proactively and in consultation with the local community.

The short term loss of agricultural land during construction is likely to be of limited impact given that upon commencement of operations, co-located agricultural opportunities would be investigated.

6.15.2 OPERATION

During operation the project will provide up to 5 full time jobs, together with the potential for up to 20 casual opportunities, during maintenance operations (such as vegetation maintenance). This has a positive impact for the local economy and provides training/value add opportunities for local workers.

The change in land use from agriculture to renewable energy is likely to have a neutral economic impact given the potential exists for continued agriculture use post construction (sheep grazing) and given the land will continue to generate an income.

6.15.3 MITIGATION MEASURES

Ongoing consultation with key stakeholders is recommended to ensure that benefits of the project are maximised and residual impacts appropriately managed.

The following mitigation measures are recommended to manage residual economic impacts:

- Prepare AES incorporating ongoing liaison with local industry representatives to ensure the maximisation of the use of local contractors, manufacturing facilities, materials.
- Liaison with local representatives regarding accommodation options for staff, to minimise adverse impacts on local services.
- Liaison with local tourism industry representatives to manage potential timing conflicts with local events
- ACEnergy or the developer will consult with local employment agencies and training organisations and, where practicable, will consider supporting training and apprenticeships.

6.16 Cumulative Impacts

6.16.1 EXISTING ENVIRONMENT

Cumulative impacts have been identified and assessed in accordance with the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPIE, 2021).

A review of the major projects website for renewable energy projects in the region has identified seven (7) projects, as outlined in **Table 19** and depicted **Figure 25**.

Table 19 – Major projects in the surrounding area

Projects:	Stage:	Distance (Direction) from Site:
Mumbil Solar Farm	Preparing EIS	8.5 kilometres (south-east)
Wellington BESS	Preparing EIS	9.6 kilometres (north)
Wellington Solar Farm	Determined	11.9 kilometres (north)

Suntop Solar Farm	Determined, construction complete	14 kilometres (north-west)
Suntop Solar Farm 2	Preparing EIS	14.4 kilometres (north-west)
Burrendong Wind Farm	Preparing EIS	27.2 kilometres (east)

6.16.2 POTENTIAL IMPACTS

The construction of the project is considered unlikely to lead to cumulative impacts with other projects in the locality on the basis that:

- The proposed site access does not share an access with any other nearby major projects;
- The construction period is a discrete, limited period, that would be managed with appropriate management plans and controls to limit the opportunity for cumulative impacts;
- There are no other major projects close to the project site that are considered likely to lead to cumulative traffic impacts during the construction period.

Operational cumulative impacts are considered unlikely on the basis that:

- The site is well separated from other noise generating developments and thus is unlikely to lead to any cumulative visual impacts;
- The operational noise levels are low and generally contained within or very close to the project site, without contributing to noise levels generated by adjacent and nearby major operations;
- The absence of other major projects in the immediate locality means that the likelihood of cumulative land use impacts are unlikely.

6.16.3 MITIGATION MEASURES

The following mitigation measures are recommended to limit the potential for cumulative impacts associated with the project:

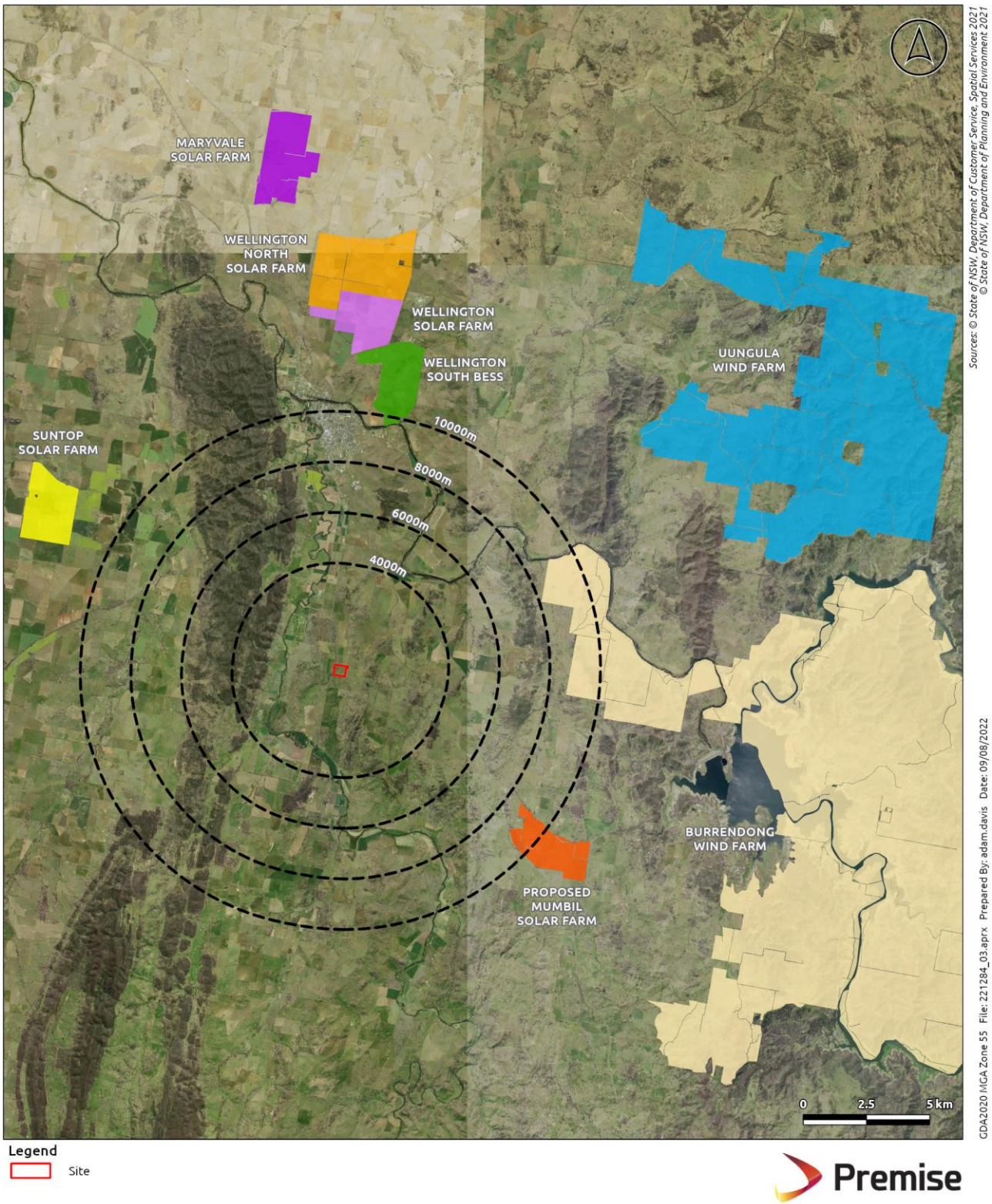
- Consultation with TfNSW to identify if the construction phase of the proposal will overlap with any TfNSW Mitchell Highway projects. Traffic management plans would be developed to address potential traffic impacts caused by concurrent projects generating construction traffic.
- Cumulative construction noise impacts would be addressed in a Noise Management Plan. Consultation with TfNSW, and other proponents if applicable, would be completed to determine if construction activities may take place in close proximity to adjoining projects. Where possible, noise generating activities would be scheduled for different areas of the proposal site to avoid cumulative construction noise impacts.
- If there is potential for construction of multiple projects to occur in and around Wellington at the same time, and large workforce numbers are required, consideration would be given to alternative accommodation options such as neighbouring towns.

7. JUSTIFICATION OF THE PROJECT

7.1 Justification for Undertaking the Proposal

The following sections provides a justification and evaluation of the project, having regard to the economic, environmental and social impacts of the project and the principles of ecologically sustainable development.

Figure 25 – State Significant Renewable projects



Premise

AC ENERGY

Apsley Battery Energy Storage System

7.2 Design of the Project

The project area has been carefully located to avoid impacts on native vegetation and habitat, where possible, by focusing the disturbance footprint in cleared agricultural cropping areas close to the access road and transmission grid. The project footprint has been sited to make best use of cleared land and access arrangements, minimise disturbance to natural features including vegetation and watercourses and through consideration of alternate sites.

The project area is sufficiently removed from the nearest residential receivers, located in the order of 400 metres north and north-west of the project area. The noise impacts on these receivers have been considered as part of the acoustic assessment undertaken, as discussed in **Section 6.8** of this EIS.

7.3 Consistency of the Project with the Strategic Context

The NSW Government has recognised that the NSW electricity system needs to change, acknowledging that traditional generators are ageing and the State's transmission system is congested. Further, electricity prices are putting pressure on households and businesses. This realisation has informed the preparation of Government policies and documents, the provisions of which have filtered to the local scale and informed local plan making.

The Project will contribute to the provision of renewable energy in NSW and facilitate private investment in the state's electricity system over the next decade and beyond, a key consideration of the NSW Electricity Strategy. The BESS has an anticipated lifespan in the order of 30 years and will contribute to the NSW Government's three objectives for the electricity system: reliability, affordability and sustainability.

Refer to the detailed discussion at **Section 2** of this EIS.

7.4 Compliance with Relevant Statutory Requirements

The proposed development is characterised as SSD as the proposal is for the purpose of electricity generating works with a capital investment value ('CIV') in excess of $30 million, pursuant to Section 20 of Schedule 1 of the Planning Systems SEPP.

Pursuant to the DLEP, the project area is predominantly zoned RU1 – Primary Production, with the access location zoned SP2 Infrastructure (Classified Road).

Electricity generating works are permitted with consent in the RU1 land use zone. The proposed BESS development site is wholly located within the RU1 zoned land.

Refer to **Section 4** of this EIS for a detailed discussion.

7.5 Community Views About the Project

The project has involved extensive consolation with the community, including residents and occupants proximal to the site, together with DRC and other regulatory agencies.

Generally, persons spoken to about the project during letter box drops and property visits ahead of the EIS lodgement were comfortable with what ACEnergy is proposing for the Apsley BESS. Many recognise the positive impacts that the renewable energy project will have in the region.

Main areas of feedback and concern focused on aspects such as visual amenity, noise, safety and site access.

Refer to Section 5 of this EIS for a detailed discussion.

7.6 Economic, Social, Environmental and Cumulative Impacts of the Project

The project is located with the Central West and Orana REZ and is contributing to the enhancement of the state energy grid, through the provision and operation of the BESS, which will serve to balance the grid and support the performance and future uptake of renewable energy. The project seeks to invest in and contribute to the local economy through the creation of jobs and provision of affordable electricity.

The Project has been sited and designed to minimise environmental impacts, where impacts cannot be avoided, mitigation measures have been proposed.

A review of public record information for large scale projects with the potential to generate cumulative impacts within 30 kilometres of the site identifies that there are a number of major projects at various stages of approvals around Wellington, all of which are in the renewable energy sector. The concurrent development of these projects has the potential to lead to cumulative impacts during construction with respect to traffic and access to skilled workers. These projects include the proposed Mumbil Solar Farm, Wellington BESS, Wellington Solar Farm, Suntop Solar Farms 1 and 2 and the Burrendong Uungula Wind Farm. Based on the location and distance of these projects, it is not considered likely that the development of the Apsley BESS project would lead to cumulative impacts on the basis that:

- The proposed site access does not share an access with any other nearby major projects;
- The construction period is a discrete, limited period, that would be managed with appropriate management plans and controls to limit the opportunity for cumulative impacts;
- There are no other major projects close to the project site that are considered likely to lead to cumulative traffic impacts during the construction period.
- The site is well separated from other noise generating developments and thus is unlikely to lead to any cumulative visual impacts;
- The operational noise levels are low and generally contained within or very close to the project site, without contributing to noise levels generated by adjacent and nearby major operations;
- The absence of other major projects in the immediate locality means that the likelihood of cumulative land use impacts are unlikely.

Refer to **Section 6.16** of this EIS for a detailed discussion.

7.7 Compliance Monitoring and Communication

Throughout construction, management measures will be implemented through the adoption of a construction environmental management plan, which will consist of a range of supporting studies, including but not limited to the following:

- Traffic Management Plan
- Bushfire Management Plan
- Construction Noise and Vibration Management Plan
- Landscape Implementation Plan
- Soil and Water Management Plan
- Emergency Response Plan
- Community Engagement Plan
- Waste Management Plan
- Incident Management Procedures

Operation and monitoring of the facility would be governed by an adopted operational environmental management and monitoring plan that would clearly identify any residual matters requiring ongoing attention during operation, with particular emphasis on bushfire management, risk management, landscape implementation and monitoring and ongoing noise monitoring to ensure ongoing compliance with adopted criteria.

The site is expected to operate for a period of approximately 30 years, after which it would be decommissioned, in accordance with the measures outlined in a decommissioning management plan.

7.8 Key Uncertainties

Due to the extent of technical studies undertaken to inform the project and the mitigation measures proposed to address impacts of the development, there are no uncertainties with the project. All impacts can be adequately mitigated through the location and design of the BESS and on-going management practices and monitoring.

7.9 Public Interest

The public interest may be determined by consideration of relevant national, state and local government goals, as well as community priorities, which are expressed through a range of documentation. Relevant strategic documents are considered in **Section 2**.

It also requires the consideration of the principles of ecologically sustainable development, discussed in **Section 7.10**. It has been consistent held through a range of determinations in the NSW Land and Environment Court that the ESD precautionary intergenerational equity principles include considerations associated with climate change (impact of the development on climate change and impacts of climate change on development).

Mostly recently, the LEC held that the downstream impacts of mining projects, including the burning of fossil fuels for energy production, is a public interest consideration. Namely, in Gloucester Resources Limited v Minister for Planning [2019] NSWLEC 7, Preston J stated at 499:

> *Many courts have held that indirect, downstream GHG (greenhouse gas) emissions are a relevant consideration to take into account in determining applications for activities involving fossil fuel extraction or combustion or electricity generated by fossil fuel combustion.*

In summing up, Preston noted that the impacts associated with climate change, among others, were sufficient to justify refusal of the project.

It follows that a project that seeks to provide for improved grid stability and support and encourage the uptake of renewable forms of energy is in the public interest as it reduces the reliance on forms of electricity generation that rely on the consumption and burning of fossil fuels and that negatively contribute to the impacts of climate change as a result. Adoption of forms of development that counter the need for these high impact uses is therefore positive in the context of the ESD principles and in the public interest.

The proposed development is considered to be in the public interest on the basis that it:

- Offers an opportunity for productive and sustainable economic activity within the area;
- Presents an excellent opportunity to the local region to provide local employment opportunities;
- Has been designed with appropriate to the consideration to social, environmental and sustainability interests of the community;
- Aims to minimises impacts to natural resources through minimising the land required to support energy supply;

- Assists to reduce reliance on traditional, fossil fuel burning forms of electricity generation, thereby assisting in curbing the long term impacts of climate change.

7.10 Ecologically Sustainable Development

The *National Strategy for Ecological Sustainable Development* (NSESD) (Department of Environment and Heritage 1992) defines Ecologically Sustainable Development (ESD) as:

> *using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased (refer website)*

The concept of ESD gives formal recognition to environmental and social considerations in decision-making to ensure the current and future generations can enjoy an environment that functions as well as or better than the environment they inherit.

The core objectives of the NSESD are:

- To enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations;
- To provide for equity within and between generations; and
- To protect biological diversity and maintain essential ecological processes and life-support systems.

As outlined in Clause 193 of the *Environmental Planning and Assessment Regulation 2021,* the four principles of ESC are listed below. These are discussed in the following sections.

- Precautionary principle;
- Intergenerational equity;
- Conservation of biological diversity and ecological integrity; and
- Improved valuation and pricing of environmental resources.

7.10.1 PRECAUTIONARY PRINCIPLE

The precautionary principle states where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a justification for not implementing mitigation measures or strategies to avoid potential impact. This has been held in various decisions in the NSW Land and Environment Court to include considerations associated with climate change (impact of the development on climate change and impacts of climate change on development).

The potential impact from the proposal has been identified in the environmental assessment section of this report and all mitigation measures summarised in **Appendix C**.

The proposal supports improvements to grid efficiency, including the uptake of renewable forms of renewable energy. This assists in reducing the long term impacts of climate change and is therefore in the public interest. The potential outcome of climate change, being higher temperatures and greater periods of sunlight, also suggests that increasing reliance of renewable forms of energy generation is sustainable. This is discussed in further detail in **Section 7.9**.

7.10.2 INTERGENERATIONAL EQUITY

The second principle of ESD is intergenerational equity, such that the present generation should ensure the health, diversity and productivity of the environment are equal to or better for future generations.

All work would be carried out in accordance with the environmental safeguards summarised in **Appendix C** to mitigate potential impact associated with noise and vibration, socio-economic considerations, traffic and transport, drainage and water quality, air quality, greenhouse gas emissions, climate change, Aboriginal and non-Aboriginal heritage, topography, soils, waste and hazardous materials.

The proposal supports the development of sustainable forms of renewable energy, and in doing so reduces reliance on traditional forms of electricity generation, including the burning of fossil fuels. This assists in reducing the impacts of climate change and therefore assists in ensuring the health of future generations is protected; the development is therefore in the public interest. This is discussed in further detail in **Section 7.9**.

7.10.3 CONSERVATION OF BIOLOGICAL DIVERSITY AND ECOLOGICAL INTEGRITY

The third principle of ESD is conservation of biological diversity and ecological integrity such that ecosystems, species and genetic diversity within species are maintained.

The proposed development has been the subject of a comprehensive assessment in accordance with the provisions of the *Biodiversity Conservation Act 2016* by reference to **Appendix G**.

The mitigating measures for protecting biodiversity at the site are provided in **Section 6.5**.

7.10.4 IMPROVED VALUATION, PRICING AND INCENTIVE MECHANISMS

The final principle of ESD is improved valuation and pricing of environmental resources which establishes the need to determine economic values for services provided by the natural environment such as the atmosphere's ability to receive gaseous emissions, cultural values and visual amenity. The principle is designed to improve methods of carrying out valuation of environmental costs and benefits and use this information when making decisions.

The development of policy to guide pricing and incentive mechanisms in delivering ecologically sustainable development is the responsibility of governments and regulatory stakeholders.

7.11 Alternatives

Development options considered as part of this EIS as summarised in **Table 20**.

Table 20 – Development Options

Alternatives:		**Description:**
Option 1	Base Case, 'Do Nothing'	Option 1 would involve not installing and operating a BESS at the site or elsewhere.
Option 2	Alternative Site	Option 2 would involve installing and operating the BESS at an alternative site
Option 4	BESS at subject site, in alternative portion of the site	Option 3 would involve installing and operating the BESS within an alternative area of the site
Option 4	BESS at subject site, 'Preferred Option'	Option 4 would involve installing and operating the BESS at the site as proposed

7.11.1 OPTION 1 – DO NOTHING

Option 4 is preferred over Option 1 on the grounds that the latter is:

- Inconsistent with the strategic context set by State and local policy, including the Central West and Orana REZ which seeks to turn the region into a renewable energy hub, as well as the Dubbo LSPS which seeks

to promote renewable energy generation, develop resilience to climate change and improve energy efficiency;

- Fails to enable the regulation of electricity supply, which improves its efficiency, consistency and reliability for consumers as it becomes increasingly variable due to the transition from traditional to more sustainable, renewable sources in the region;
- Fails to seize upon the social and economic benefits as a result of direct and indirect employment associated with the construction and operation of the facility, and loss of investment in the community as a result of the flow on effects of employment
- Fails to seize upon opportunities for local businesses associated with local purchasing and opportunities during construction.

7.11.2 OPTION 2 – ALTERNATIVE SITE

Option 4 is preferred over Option 2 as the latter would result in increased costs and environmental impacts associated with the acquisition of a suitable property and construction of increased lengths of connecting infrastructure (likely to include earthworks and vegetation removal), as compared to the site of the proposed development, which is proximate to the state energy grid.

The site is generally flat, capable of being developed, has minimal nearby residential receivers, and once operational, will have minimal ongoing impacts to surrounding receivers.

7.11.3 OPTION 3 – DIFFERENT AREA OF THE SUBJECT SITE

Option 4 is preferred over Option 3 as:

- Existing 132kv lines are proximate to the proposed BESS site;
- The site is well protected from nearby residential receivers from both a visual and aural perspective; residual impacts are manageable;
- The land is generally flat, avoiding the need to undertake significant bulk earthworks; and
- The project footprint minimises the need to clear native vegetation and impact habitat areas.

Noting the above, option 4 (the preferred option) is the preferred area for the BESS.

7.12 Conclusion

This EIS has been prepared pursuant to Part 5, Division 5.1, Subdivision 3 of the *Environmental Planning and Assessment Act 1979* (the EP&A Act), Part 8, Division 5 of the *Environmental Planning and Assessment Regulation 2000* (the EP&A Regulation), *State Significant Development Guidelines – Preparing an Environmental Impact Statement* (DPIE 2021) and SEARs issued by DPIE on 19 February 2021 in response to the Scoping Report (refer to **Appendix A**).

An assessment of potential environmental impacts has identified a number of minor adverse impacts to the environment that would require the implementation of appropriate controls to ensure compliance in accordance with relevant legislation, standards and guidelines. Measures are proposed during both construction and operation to ensure impacts are appropriately managed. These measures would ensure compliance with relevant legislation and any conditions of approval.

8. REFERENCES

Table 21 – References

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APPENDIX A

SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

APPENDIX B

RESPONSE TO SEARS

Table 22 – Response to SEARs

	Details:	Section of EIS where issue addressed:
General Requirements	In particular, the EIS must include:	
	• a stand-alone executive summary;	Refer to **Summary**
	• a full description of the development, including: – details of construction, operation and decommissioning; – a high quality site plan at an adequate scale showing all infrastructure and facilities (including any infrastructure that would be required for the development, but the subject of a separate approvals process); – a high quality detailed constraints map identifying the key environmental and other land use constraints that have informed the final design of the development;	Refer to **Section 2.5**
	• a strategic justification of the development focusing on site selection and the suitability of the proposed site with respect to potential land use conflicts with existing and future surrounding land uses (including existing land use, residential development, Crown lands adjacent to the site and neighbouring industrial and infrastructure developments);	Refer to **Section 2** and **Section 7**
	• an assessment of the likely impacts of the development on the environment, focusing on the specific issues identified below, including:	
	– a description of the existing environment likely to be affected by the development using sufficient baseline data;	Refer to **Section 2**
	– an assessment of the likely impacts of all stages of the development, (which is commensurate with the level of impact), including any cumulative impacts of the site and existing or proposed developments in the region in accordance with the Cumulative Impact Assessment Guideline (DPIE, Nov 2021);	Refer to **Section 6**
	– a description of the measures that would be implemented to avoid, mitigate and/or offset the impacts of the development (including draft management plans for specific issues as identified below); and	Refer to **Section 6** and **Appendix C**
	– a description of the measures that would be implemented to monitor and report on the environmental performance of the development;	Refer to **Section 6** and **Appendix C**

	• a consolidated summary of all the proposed environmental management and monitoring measures, identifying all the commitments in the EIS; and	Refer to **Appendix C**
	• a detailed evaluation of the merits of project as a whole having regard to:	
	– the requirements in Section 4.15 of the Environmental Planning and Assessment Act 1979, and how the principles of ecologically sustainable development have been incorporated in the design, construction and ongoing operations of the development;	Refer to **Section 7.10**
	– the suitability of the site with respect to potential land use conflicts with existing and future surrounding land uses; and	Refer to **Section 6.3.4**
	– feasible alternatives to the development (and its key components), including the consequences of not carrying out the development;	Refer to **Section 7.11**
	• a detailed consideration of the capability of the project to contribute to the security and reliability of the electricity system in the National Electricity Market, having regard to local system conditions and the Department's guidance on the matter; and	Refer to **Section 2.1**
	• a signed statement from the author of the EIS, certifying that the information contained within the document is neither false nor misleading.	Refer to **Certification**
	The EIS must also be accompanied by a report from a suitably qualified person providing:	
	• a report from a suitably qualified person providing a detailed calculation of the capital investment value (CIV) (as defined in the Dictionary of the EP&A Regulation) of the proposal, including details of all assumptions and components from which the CIV calculation is derived;	Refer to **Appendix N**
	• an estimate of the jobs that will be created during the construction and operational phases of the proposed infrastructure; and	Refer to **Section 2.5**
	• certification that the information provided is accurate at the date of preparation.	Refer to **Certification**
	The development application must be accompanied by the consent in writing of the owner/s of the land (as required in clause 23(1) of the EP&A Regulation).	Refer to **Appendix N**
Key Issues	The EIS must address the following specific matters:	
	• **Biodiversity** – including: – an assessment of the biodiversity values and the likely biodiversity impacts of the project in accordance with	Refer to **Section 6.5**

	Section 7.9 of the Biodiversity Conservation Act 2016 (NSW), the Biodiversity Assessment Method (BAM) and documented in a Biodiversity Development Assessment Report (BDAR), unless BCS and DPIE determine the proposed development is not likely to have any significant impacts on biodiversity values; – the BDAR must document the application of the avoid, minimise and offset framework including assessing all direct, indirect and prescribed impacts in accordance with the BAM; and – if an offset is required, details of the measures proposed to address the offset obligation.	
	• **Heritage** – including: – an assessment of the impact to Aboriginal cultural heritage items (cultural and archaeological) in accordance with the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and the Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW (DECCW, 2010), including results of archaeological test excavations (if required); – provide evidence of consultation with Aboriginal communities in determining and assessing impacts, developing options and selecting options and mitigation measures (including the final proposed measures), having regard to the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010); and – assess the impact to historic heritage having regard to the NSW Heritage Manual.	Refer to **Section 6.1**

	• **Land** – including: – a detailed justification of the suitability of the site and that the site can accommodate the proposed development having regard to its potential environmental impacts, permissibility, strategic context and existing site constraints; – an assessment of the potential impacts of the development on existing land uses on the site and adjacent land, including: • flood prone land, acid sulphate soils, Crown lands, mining, quarries, mineral or petroleum rights; • a soil survey to determine the soil characteristics and consider the potential for erosion to occur; and • a cumulative impact assessment of nearby developments; – an assessment of the compatibility of the development with existing land uses, during construction, operation and after decommissioning, including: • consideration of the zoning provisions applying to the land, including subdivision (if required); • completion of a Land Use Conflict Risk Assessment in accordance with the Department of Industry's Land Use Conflict Risk Assessment Guide; and – a detailed assessment of the impact on agricultural resources and agricultural productivity, including: • an agricultural impact statement, including results of soil surveys; • consideration of potential mitigation measures which may reduce project impacts on agricultural land; • detailed economic assessment of impacts on agricultural land, agricultural production and agricultural supply chains; and • justification for the project considering other alternatives and site design which may have lesser impacts on agricultural land.	Refer to **Section 6.2.1, 6.3.2 and 6.3.4.**
	• **Visual** – including a detailed assessment of the likely visual impacts (including night lighting) of all components of the project (including transmission lines and any other ancillary infrastructure) on surrounding residences, scenic or significant vistas and road corridors in the public domain.	Refer to **Section** ·
	• **Noise** – including an assessment of the construction noise impacts of the development in accordance with the Interim Construction Noise Guideline (ICNG), operational noise impacts in accordance with the NSW Noise Policy	Refer to **Section 6.8**

	for Industry (2017), cumulative noise impacts (considering other developments in the area), and a draft noise management plan if the assessment shows construction noise is likely to exceed applicable criteria;	
	• **Transport** – including: – an assessment of the peak and average traffic generation, including over-dimensional vehicles and construction worker transportation and transport of materials by rail; – an assessment of the likely transport impacts to the site access route, site access point(s), any Crown land, particularly in relation to the capacity and condition of the roads, road safety and intersection performance; – a cumulative impact assessment of traffic from nearby developments; and – provide details of measures to mitigate and / or manage potential impacts including a schedule of all required road upgrades (including resulting from heavy vehicle and over mass / over dimensional traffic haulage routes), road maintenance contributions, and any other traffic control measures, developed in consultation with the relevant road authority;	Refer to **Section 6.7**
	• **Water** – including: – an assessment of the likely impacts of the development (including flooding) on surface water and groundwater resources and measures proposed to monitor, reduce and mitigate these impacts; – details of water requirements and supply arrangements for construction and operation; and – a description of the erosion and sediment control measures that would be implemented to mitigate any impacts in accordance with Managing Urban Stormwater: Soils & Construction (Landcom 2004);	Refer to **Section 6.2.2**

	• **Hazards** – including: – a preliminary risk screening completed in accordance with State Environmental Planning Policy No. 33 – Hazardous and Offensive Development and Applying SEPP 33 (DoP, 2011); – a Preliminary Hazard Analysis (PHA) must be prepared in accordance with the Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis' and Multi-Level Risk Assessment (DoP, 2011). The PHA must consider all recent standards and codes and verify separation distances to on-site and off-site receptors to prevent fire propagation and compliance with Hazardous Industry Advisory Paper No. 4, 'Risk Criteria for Land Use Safety Planning (DoP, 2011); and – an assessment of potential hazards and risks including but not limited to bushfires, land contamination, spontaneous ignition, electromagnetic fields or the proposed grid connection infrastructure against the International Commission on Non-Ionizing Radiation Protection (ICNIRP) Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields;	Refer to **Section 6.13**
	• **Social Impact**– including an assessment of the social impacts in accordance with Social Impact Assessment Guideline (DPIE, Nov 2021);	Refer to **Section 6.14**
	• **Economic** – including an assessment of the economic impacts or benefits of the project for the region and the State as a whole; and	Refer to **Section 6.15**
	• **Waste** – identify, quantify and classify the likely waste stream to be generated during construction and operation, and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste.	Refer to **Section 6.10**
Plans and Documents	The EIS must include all relevant plans, diagrams and relevant documentation required under Part 3 of the EP&A Regulation. Provide these as part of the EIS rather than as separate documents. In addition, the EIS must include high quality files of maps and figures of the subject site and proposal.	This EIS
Legislation, Policies and Guidelines	The assessment of the key issues listed above must take into account relevant guidelines, policies, and plans as identified. A list of some of the legislation, policies and guidelines that may be relevant to the assessment of the project can be found at: • https://www.planning.nsw.gov.au/Policy-and-Legislation/Planning-reforms/Rapid-Assessment-Framework/Improving-assessment-guidance	Refer to **Section 4**

	• https://www.planningportal.nsw.gov.au/major-projects/assessment/policies-and-guidelines; and • http://www.environment.gov.au/epbc/publications#assessments	
Consultation	During the preparation of the EIS, you should consult with relevant local, State or Commonwealth Government authorities, infrastructure and service providers, community groups, affected landowners and any exploration licence and/or mineral title holders. In particular, you must undertake detailed consultation with affected landowners surrounding the development, Dubbo Regional Council, and NSW Aboriginal Land Council. The EIS must: • detail how engagement undertaken was consistent with the Undertaking Engagement Guide: Guidance for State Significant Projects (DPIE, Nov 2021); and • describe the consultation process and the issues raised and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, an explanation should be provided.	Refer to **Section 5**
Expiry Date	If you do not lodge a Development Application and EIS for the development within 2 years of the issue date of these SEARs, your SEARs will expire. If an extension to these SEARs will be required, please consult with the Planning Secretary 3 months prior to the expiry date.	The development application is submitted within two years of the SEARs issue date.

APPENDIX C

MITIGATION MEASURES TABLE

Table 23 – Summary of mitigation measures

Impact area	Phase	Mitigation Measures
Heritage	Throughout	1. The development proposal should proceed, conditional upon the recommendations outlined in this report and an exclusion zone implemented around the recorded sites within the study area as identified in Section 13.1. 2. No further Aboriginal archaeological investigations are proposed. 3. Two newly recorded sites identified during the archaeological survey will be uploaded to the AHIMS database: a. Apsley IF-1. b. Apsley IF-2. 4. The development must avoid the two isolated finds located within the study area (Apsley IF-1 and Apsley IF-2) as per the proposed development footprint in this report. A minimum 10m buffer around each isolated find is appropriate. 5. No impacts are to occur to previously recorded sites located immediately north of the study area (AHIMS #36-4-0082 and #36-4-0083) 6. Aboriginal cultural heritage within the study area will be managed by an Aboriginal Cultural Heritage Management Plan (ACHMP) that will be developed following project approval in consultation with the RAPs and Heritage NSW. The ACHMP will contain the recommendations of this report, as well as an unanticipated finds protocol, procedures to manage unexpected discoveries of human remains, 7. No recorded sites will be impacted. Given that these sites are low-density artefact scatters and isolated finds, their scientific significance is low, and the recording and collection of visible artefacts is considered to be sufficient mitigation with regard to the proposed impact. 8. An unexpected finds procedure would be implemented as part of the management considerations for Aboriginal Cultural Heritage. unexpected finds policy should be included as part of the proposed ACHMP. If unanticipated Aboriginal objects are uncovered during works, all work in the vicinity should cease immediately. A qualified archaeologist should be contacted to assess the find and Heritage NSW and Wellington LALC must be notified. 9. All impacts must remain within the assessed study area or further archaeological investigation may be required.
Soils	Throughout	• Minimise soil disturbance and excavation where possible

Impact area	Phase	Mitigation Measures
		• Minimise mixing of soil layers where practical • Retain and stockpile all disturbed or excavated soil • Ameliorate any excavated and/or stockpiled soils in accordance with advice obtained from the NSW Soil Conservation Service • Consider soil amelioration with lime and/or gypsum prior to reinstatement and/or as part of decommissioning • Return stockpiled soil to its original location (where possible) as soon as reasonably practicable • Ensure topsoil and subsoils are stockpiled separately and returned in order • Minimise overworking of the surface soils (in-situ, in excavation, stockpiling and reinstatement) • Reinstate topsoil where possible where excavation occurs • Minimise vehicular traffic induced compaction where practical • Minimise stock compaction by excluding livestock during construction, minimising stocking rates and/or minimising the risk of stock coinciding with wet topsoil conditions • Minimise infrastructure induced compaction where possible (spread loads etc.) • Maintain and maximise vegetative cover where possible to help protect surface soils • Employ practices which maintain/increase soil organic matter levels such as maintaining grass cover where practical, minimising soil disturbance and the retention/incorporation of any cleared vegetation or organic matter as soon as reasonably practicable • Avoid bare (fallow) soil surface where practical • Whilst good weed control should be implemented, retention of less detrimental weeds may help maintain vegetal of cover and/or increase soil organic matter levels. • Minimise the exposure of subsoil layers particularly to rainfall/surface water run-off impacts • Implement excess surface water controls to minimise collection/concentration of mobile surface water • Implement practices to minimise sediment mobilisation and/or sediment capture • Minimise site activities and soil disturbance during wet weather conditions where possible

Impact area	Phase	Mitigation Measures
		• Ensure that the sodic soils, which include all layers of the Brown Plastic Soil (to a depth of 1.0+m), are clearly identified and not mixed with other soils • Regularly monitor soils for potential adverse impacts and if and when identified, implement appropriate mitigation or remediation actions • Implement construction and/or site rehabilitation and revegetation in accordance with an appropriate landscape, revegetation or rehabilitation plan prepared by a suitably qualified professional • Ensure rehabilitation is undertaken progressively to minimise the total disturbance area at any one time • Prepare an appropriate decommissioning management plan which aims to minimise adverse soil impacts and aims to return the site to preconstruction land and soil capability (or better) • The decommissioning management plan should determine soil conditions prior to decommissioning to ensure any existing soil conditions and/or adverse impacts, which may have changed/developed throughout the life of the development, are catered for.
Surface Water	Pre construction	• An ESCP and SWMP are to be provided during the detailed design phase in accordance with the recommendations of the LUCRA (refer to **Section 6.2.1**) to ensure that runoff from the site has acceptable impacts to neighbouring properties.
Biosecurity	Throughout	• Preparing a Weed Management Plan in accordance with the Central West Regional Strategic Weed Management Plan and *NSW Biosecurity Act 2015* and in consultation with DRC, NSW DPI and the landowner; • Restricting vehicle movements by establishing and using formed access tracks; • Use of vehicle wash down stations to prevent the transport of weeds and pathogens to and from the project area; • Ensure all waste containers are covered to prevent pest animal access to food waste, and ensure waste is regularly removed from the site; • Establishing and maintaining perimeter fencing to minimise pest animal access to the project area; • Conduct routine monitoring for pest species and implement control measures if required, and in accordance with industry best practice;

Impact area	Phase	Mitigation Measures
		• Prepare and effectively implement construction, operation and decommissioning management plans that incorporate all mitigation measures in this EIS; and • Ensuring any imported fill has appropriate chains of custody and testing to limit the potential for the introduction of diseases.
Bushfire		• This bushfire assessment assumes that the recommended 10m APZ would be managed to the prescribed APZ (IPA) standards e.g., fuel free (sand, gravel, concrete) or short mown grass <10cm high. There are no known environmental constraints to the ongoing management of the APZ to this standard, noting that management does not impact on any mapped drainage lines. – APZ (10m IPA) and water supply (hydrants/tank) for bushfire fighting purposes to be constructed as the first stage of development. – Construction of the BESS and associated infrastructure to the general fire safety provisions of the National Construction Code (NCC). – Permits for hot works (e.g., grinders, welders, slashers) and no hot works on Total Fire Ban Days. – Essential equipment should be designed and housed in such a way as to minimise the impact of bush fires on the capabilities of the infrastructure during bush fire emergencies. It should also be designed and maintained so that it will not serve as a bush fire risk to surrounding bush. In this regard it is recommended that substations and other new building be constructed to comply with Australian Standard AS 3959- 2018 Construction of buildings in bushfire-prone areas, commensurate with the modelled bushfire attack levels. – Strategically located within the site to ensure accessibility, (e.g., adjacent to the existing vehicle access road and adjacent to the planned BESS); – Have a capacity of 50,000-80,000 litres; – Be made of steel or concrete; – The tank should incorporate fast fill options and easily accessible fill points such as 65mm Storz fittings for hydrant stands or direct link to tanks; and – Hardstand access capable of supporting weight and turning capacity for a fully loaded fire truck (23 tonne) should be provide at the tank location. – Short pole spacing preferred (30m); and – No part of a tree is closer to a power line than the distance set out in accordance with the specifications in

Impact area	Phase	Mitigation Measures
		ISSC3 Guideline for Managing Vegetation Near Power Lines. – The property access road is to be two-wheel drive, all weather, with a road surface capable of carrying a fully loaded firefighting vehicle (up to 23 tonnes). – Any bridges and causeways are to clearly indicate the load rating. – The access road can be sealed or unsealed. Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads. – Access is to be provided to hydrants that are provided in accordance with the relevant clauses of AS 2419.1:2005 OR – There is to be a suitable access for a category 1 fire appliance to within 4m of the water tank where no reticulated water supply is available. – The access road is to be provided with a turnaround provision of 22m diameter or a 'T' junction at the position of the dedicated water supply tank. – The road is to be a minimum 4m carriageway width and have a minimum 4m vertical clearance to any overhanging obstructions, including tree branches. – The access road must provide a passing bay every 200m that is 20m long x 2m wide, making a minimum trafficable width of 6m at the passing bay. Curves in the access road are to have a minimum inner radius of 6m and are to be minimal in number to allow for rapid access and egress. – The access road has a crossfall less than 6 degrees.
	Detailed design	• As detailed design progresses, equipment suppliers are selected, and the BESS layout is refined, it is proposed to further consult with both the RFS and FRNSW. The intention of this consultation will be twofold. – To provide detail on the technology proposed and the proposed farm layout to allow (if necessary) design refinement to incorporate any specific requirements the RFS/FRNSW may have; and – To provide the requisite information that will be needed to prepare an Emergency Response Plan (ERP). • In terms of design principles to minimise risk, the layout will be designed to: – provide a defendable space around infrastructure;

Impact area	Phase	Mitigation Measures
		– ensure that appropriate access, egress and manoeuvrability within the facility is provided for first responders; – provide for ongoing management and maintenance of bush fire protection measures; and – ensure that services are adequate to meet the needs of firefighters.
	Construction	• Prior to construction commencing the EPC contractor will engage with Wellington RFS local brigade and details about the construction schedule, contact numbers and site access arrangements will be shared. • Five (5) 10 kL tanks, being Static Water Supplies dedicated exclusively for fire-fighting purposes, will be located strategically around the site and appropriately plumbed for the duration of construction. • The fuel load over the site prior to and during construction will be monitored and reduction measures implemented as required. These measures will be restricted to mechanical slashing or stock crash grazing. • The following work practices would be implemented throughout construction: – No burning of vegetation or any waste material would take place on site; – Fire extinguishers will be available in all vehicles; – During the bushfire season (October to March) the fire danger status would be monitored daily (through the RFS website http://www.rfs.nsw.gov.au) and communicated to personnel; – Total Fire Ban rules will be adhered to. That is, the EPC contractor will not: ▪ (in any grass, crop or stubble land) drive or use any motorised machine unless the machine is constructed so that any heated areas will not come into contact with combustible matter; ▪ carry out Hot Works (eg. welding operations or use an angle grinder or any other implement that is likely to generate sparks), unless the necessary exemption from the RFS Commissioner has been obtained and work complies with all requirements specified in the exemption; and ▪ Any fuel or flammable liquid would be stored in a designated area and will be sign posted "Fuel Storage Area."

Impact area	Phase	Mitigation Measures
		▪ A register will be maintained that confirms the quantities and location of any flammable material stored on-site.
	Prior to operations	• Given the potential for electrical hazards associated with an energy generating facility, and potential risks to firefighters, both FRNSW and the RFS must be able to implement effective and appropriate risk control measures when managing an emergency incident in order to safely mitigate potential risks (including electrical hazards and venting electrolyte) to firefighters. • The detail required to prepare this plan will be contingent on the equipment proposed and the BESS layout and services. These features would have been communicated to and refined in consultation with both RFS and FRNSW during detailed design. As such, the operator of the Apsley BESS will have had the information required to prepare an Emergency Response Plan (ERP) prior to commencement of operations (ie. export of electricity into the grid).
	Emergency Response Plan	• The ERP will detail the appropriate risk control measures that would need to be implemented in order to safely mitigate potential risks to the health and safety of firefighters, including electrical hazards. These measures would include the level of personal protective clothing required to be worn, the minimum level of respiratory protection required, minimum evacuation zone distances and a safe method of shutting down and isolating the BESS (either in its entirety or partially, as determined by risk assessment). The ERP would also include any other risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the BESS. • Two copies of the ERP would be stored in a prominent Emergency Information Cabinet located in a position directly adjacent to the site's main entry. • The operator of the Apsley BESS would then make contact with the relevant local emergency management committee (LEMC) and provide a copy of the ERP.
	During operations	• The fuel load over the Apsley BESS property will be constantly monitored and fuel load reduction measures implemented as required. These measures will be either mechanical slashing or crash grazing (sheep). Procedures for ensuring this outcome and demonstrating active management of the fuel load will be specified in the OEMP.
Access, Transport and Traffic	During construction	• **Recommendation 1:** a traffic management plan be implemented on the Mitchell Highway that includes reducing the speed limit at the site access intersection with

Impact area	Phase	Mitigation Measures
		the Mitchell Highway to 80 km/h during the peak construction phase • **Recommendation 2:** the access point should be constructed generally in accordance with Figure 7.4 of the Austroads Guide to Road Design Part 4, for a rural property access for articulated vehicles.
Noise and Vibration	Construction	• Limiting the type and scale of concurrent activities undertaken close to sensitive receptors where possible; – Using broad band reversing alarms on all mobile plant and equipment; – Examine different types of machines that perform the same function and compare the noise level data to select the least noisy machine; – Operating plant in a quiet and efficient manner; – Reduce throttle setting and turn off equipment when not being used; and – Regularly inspect and maintain equipment to ensure it is in good working order including checking the condition of mufflers. • It is recommended that during any work generating high noise levels that have impulsive, intermittent, low frequency or tonal characteristics, consultation with sensitive receptors occurs regularly. • In addition, piling activities which are predicted to exceed 50 dB(A) at any sensitive receiver must only be undertaken: – between the hours of 7:00am and 6:00pm Monday to Friday; and – between the hours of 8:00am and 1:00pm Saturday; – in continuous blocks of no more than three hours, with at least a one-hour respite between each block of work generating high noise impact, where the location of the work is likely to impact the same receivers.
	Operation	• Noise barriers varying in height (3.5 to 4.5 m) are proposed as shown in Figure 2. In order to be effective, the acoustic barrier would need to be free of gaps and be constructed of material with a mass density greater than or equal to 12 kg/m2 excluding structural components. • Two of the barriers are cantilevered 0.5m north at an angle of 45 degrees • A 5 m buffer zone between the battery containers and the barriers should be implemented.
Visual Impacts	Throughout	• 20-metre wide area of screening vegetation along northern side of the security fence, (assume four offset rows including

Impact area	Phase	Mitigation Measures
		two rows of native trees and shrubs such as Callistemon sp. and Casuarina sp. or similar, and two rows of shrubs, such as Acacia sp.), located within the project site. • Five-metre wide screening vegetation along the western and southern side of the security fence (assume two offset rows of small trees such as Callistemon sp. and Casuarina sp. or similar, and shrubs, such as Acacia sp.) , located within the project site. • Tree planting along western site boundary, about 20 metres wide x 150 metres long, along the Mitchell Highway, including native tree species to match roadside planting character north of the site, located within the project site. • Planting in the proposed screen planting areas would be laid out in a staggered arrangement and at a density to achieve an overlap between plant foliage and the screening effect. Fast growing, native plant species are recommended, preferably in tube stock size, for quick establishment and long-term health. • There would be a 12-month establishment and 24-month monitoring period to ensure establishment of the proposed planting areas. The proposed planting would be subject to ongoing maintenance as a part of the operations phase of the BESS project.
Waste	Pre construction	• A waste management plan is to be provided as part of the CEMP, identifying opportunities to minimise waste and maximise opportunities recovery and reuse of waste generated on-site.
Air and Microclimate	During construction and decommissioning	• A water cart (truck) would be utilised routinely, wetting all access roads and exposed dusty surfaces as appropriate to the conditions of the site. • Stockpiled topsoil and other materials that exhibit significant dust lift off would be wet down routinely and as appropriate. • Stabilising techniques and/or environmentally acceptable dust palliatives will be utilised if the wetting down of surfaces prove to be ineffective. •
	During operation	• Any area that was temporarily used during construction would be restored back to original condition or re-vegetated with native plants. • Areas that may not have been hard packed but have been disturbed in some form would be vegetated with seeds native to the area.

Impact area	Phase	Mitigation Measures
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Technological Hazards	Pre construction	• The transformers spill containment shall be designed according to the requirements of AS 2067:2016 – "Substations and high voltage installations exceeding 1 kV a.c' • A Final Hazard Analysis (FHA) shall be prepared based upon the finalised layout of the site to demonstrate that the risk criteria remains below the acceptable levels.
Social Impact Assessment	Pre construction	• Provide communication and engagement with the community prior to site establishment. Measures could include newsletter and construction update on the scope of the project, likely high impact activities (noise, vibration, traffic, and pedestrian changes), and contact details for inquiries and complaints. Meetings/presentations with neighbouring properties and parents prior to construction should also be considered. • Develop an inquiry and complaint process for the construction. • Engage with the local community and neighbours to develop a working relationship to disseminate information during and after construction.
	Construction	• A Construction Management Plan (CMP) should be prepared that incorporates the findings of the various project technical studies. • A Traffic Management Plan (TMP) should be prepared that incorporates the findings of the various project technical studies. • Implement a Heritage management including unexpected find procedure • Management of complaints • Ongoing communication with the community to keep residents updated on construction scheduling. This may include signage, notifications, and other appropriate communication channels. • Investigate opportunities to use local contractors, suppliers, and service providers.
	Operation	• Ongoing communication and engagement with the community which includes complaints management. • Maintain the plants installed along the project boundaries to ensure full growth and longevity.

Impact area	Phase	Mitigation Measures
		• Develop a landscape maintenance plan to include replacement of any plants that fail during the lifespan of the project. • Consult with businesses, peak bodies (Chamber of Commerce), industry groups and tourism operators to provide opportunities for local procurement • Create an Accommodation and Employment Strategy
Economic Impact	Pre construction	• Prepare AES incorporating ongoing liaison with local industry representatives to ensure the maximisation of the use of local contractors, manufacturing facilities, materials. • Liaison with local representatives regarding accommodation options for staff, to minimise adverse impacts on local services. • Liaison with local tourism industry representatives to manage potential timing conflicts with local events • ACEnergy or the developer will consult with local employment agencies and training organisations and, where practicable, will consider supporting training and apprenticeships.
Cumulative Impacts	Pre construction	• Consultation with TfNSW to identify if the construction phase of the proposal will overlap with any TfNSW Mitchell Highway projects. Traffic management plans would be developed to address potential traffic impacts caused by concurrent projects generating construction traffic. • Cumulative construction noise impacts would be addressed in a Noise Management Plan. Consultation with TfNSW, and other proponents if applicable, would be completed to determine if construction activities may take place in close proximity to adjoining projects. Where possible, noise generating activities would be scheduled for different areas of the proposal site to avoid cumulative construction noise impacts. • If there is potential for construction of multiple projects to occur in and around Wellington at the same time, and large workforce numbers are required, consideration would be given to alternative accommodation options such as neighbouring towns.

APPENDIX D

ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT

APPENDIX E

AGRICULTURAL LAND UTILITY ASSESSMENT

APPENDIX F

LAND USE CONFLICT RISK ASSESSMENT

APPENDIX G

BIODIVERSITY DEVELOPMENT ASSESSMENT REPORT

APPENDIX H

BUSHFIRE ASSESSMENT

APPENDIX I

TRAFFIC IMPACT ASSESSMENT

APPENDIX J

LANDSCAPE AND VISUAL IMPACT ASSESSMENT

APPENDIX K

ACOUSTIC IMPACT ASSESSMENT

APPENDIX L

PRELIMINARY HAZARD ANALYSIS

APPENDIX M

SOCIAL IMPACT ASSESSMENT

APPENDIX N

CROWN LANDOWNER'S CONSENT

APPENDIX O

CONSULTATION RESPONSES

Premise