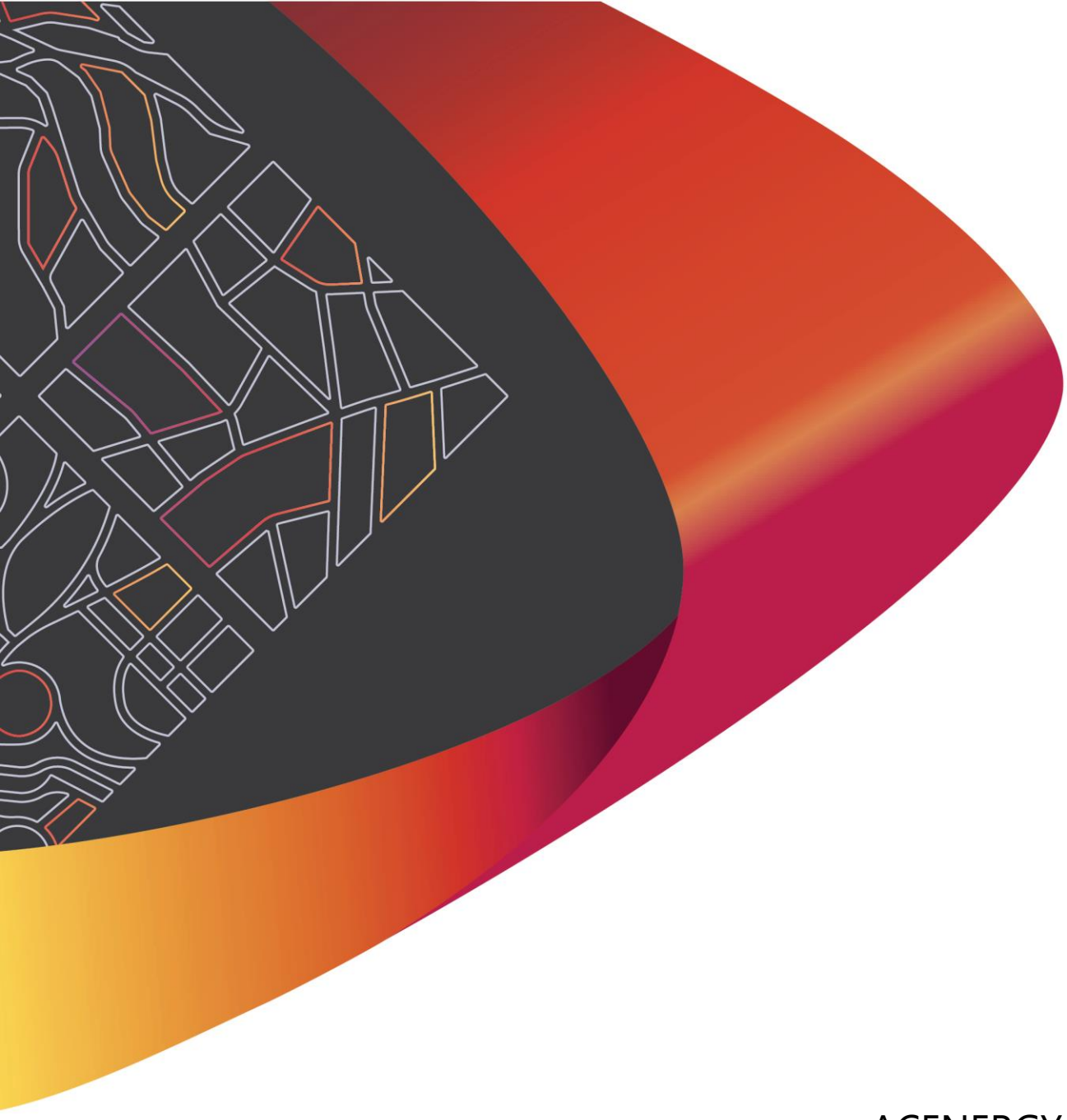

ACENERGY PTY LTD

# Yanco Battery Energy Storage System

## ENVIRONMENTAL IMPACT STATEMENT

Report No: 223115/REP
Rev: 001D
8 November 2024

Premise

| DOCUMENT AUTHORISATION | | | | | |
|---|---|---|---|---|---|
| **Revision** | **Revision Date** | **Proposal Details** | | | |
| Draft A | 09/08/24 | Draft for UGL review | | | |
| Draft B | 04/10/24 | For client review | | | |
| C | 15/10/24 | REAP signoff | | | |
| D | 08/11/24 | Updated to address DPHI comments – REAP signoff | | | |
| **Prepared By** | | **Reviewed By** | | **Authorised By** | |
| Lucy McDermott |  | David Walker |  | David Walker |  |

# CERTIFICATION

For submission of an environmental impact statement (EIS) under Part 4, Division 4.1 of the NSW *Environmental Planning and Assessment Act 1979*

| **EIS Prepared by** | |
|---|---|
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| **Applicant/Responsible Person** | |
| ACEnergy Pty Ltd<br>Level 3, 689 Burke Rd,<br>Camberwell VIC 3124 | |
| **Description of Proposed Development** | |
| ACEnergy Pty Ltd (The Applicant) is proposing to develop an approximately 250 Megawatt AC (MWAC) Battery Energy Storage System (BESS) on land known as Lots 516 and 521 DP 751745 at 120 Houghton Road in Yanco, NSW, 2703. | |
| **Land to be developed** | |
| Lots 516 and 521 DP 751745 at 120 Houghton Road in Yanco, NSW, 2703<br>Lot 7350 DP1199551<br>Lot 10 DP8449631<br>Houghton Road road reserve<br>Hume Road road reserve<br>Irrigation Way road reserve | |
| **Declaration by Registered Environmental Assessment Practitioner** | |
| Name | David Walker |
| Registration number | 7333 |
| Organisation registered with | Planning Institute of Australia |
| The undersigned declares that this EIS:<br>> has been prepared in accordance with Division 5 of the Environmental Planning and Assessment Regulation 2021;<br>> contains all available information relevant to the environmental assessment of the development, activity or infrastructure to which the EIS relates;<br>> 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.

**DAVID WALKER**

**B. Urban and Regional Planning (MPIA)**

08/11/2024

# ABBREVIATIONS

| Abbreviation | Abbreviated term |
|---|---|
| **ACHAR** | Aboriginal Cultural Heritage Assessment Report |
| **AHIMS** | Aboriginal Heritage Information Management System |
| **ANL** | Acceptable Noise Levels |
| **BAR** | Bushfire Assessment Report |
| **BDAR** | Biodiversity Development Assessment Report |
| **BOM** | Bureau of Meteorology |
| **BSAL** | Biophysical Strategic Agricultural Land |
| **CEMP** | Construction Environmental Management Plan |
| **CSEP** | Community and Stakeholder Engagement Plan |
| **DA** | Development Application |
| **DCP** | Development Control Plan |
| **DoE** | Commonwealth Department of Environment |
| **DPE** | NSW Department of Planning and Environment |
| **DPI** | NSW Department of Primary Industries |
| **DPHI** | NSW Department of Planning, Housing and Infrastructure |
| **EEC** | Endangered Ecological Community |
| **EIS** | Environmental Impact Statement |
| **EOR** | Engagement Outcomes Report |
| **EPA** | NSW Environment Protection Authority |
| **ESD** | Ecologically Sustainable Development |
| **FRGA** | Flood Risk and Groundwater Assessment |
| **FRNSW** | Fire and Rescue New South Wales |
| **ICNG** | Interim Construction Noise Guideline (2009) |
| **INP** | Noise Policy for Industry 2017 |
| **LEP** | Local Environmental Plan |
| **LLEP** | *Leeton Local Environmental Plan 2014* |
| **LGA** | Local Government Area |

| | |
|---|---|
| **LPI** | NSW Land and Property Information |
| **LUCRA** | Land Use Conflict Risk Assessment |
| **NIA** | Noise Impact Assessment |
| **OEH** | NSW Office Environment and Heritage |
| **PSI** | Preliminary Site Investigation |
| **RFS** | NSW Rural Fire Service |
| **RMS** | NSW Roads and Maritime Service |
| **SEARs** | Secretary's Environmental Assessment Requirements |
| **SEPP** | State Environmental Planning Policy |
| **SIA** | Social Impact Assessment |
| **SSD** | State Significant Development |
| **TfNSW** | Transport for New South Wales |
| **TIA** | Traffic Impact Assessment |
| **VIA** | Visual Assessment Report |
| **Units of measure** | |
| **°C** | degrees Celsius |
| **dB(A)** | A-weighted decibel |
| **Ha** | Hectare |
| **m** | Metres |
| **m/s** | Metres per second |
| **ML** | Megalitre |
| **MW** | Megawatt |
| **MWh** | Megawatt hour |

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# EXECUTIVE SUMMARY

## Introduction

ACEnergy Pty Ltd seeks to develop an approximately 250 Megawatt AC ($MW_{AC}$) Battery Energy Storage System (BESS) on land at Lots 516 and 521 DP 751745 at 120 Houghton Road, Yanco NSW within the Leeton Local Government Area. Ancillary aspects of the project associated with road upgrades and electricity transmission line routes affect other land including the road reserves of Hume Road, Houghton Road and Irrigation Way, Lot 7350 DP1199551 and Lot 10 DP8449631.

The proposed development is characterised as State Significant Development ('SSD') as the proposal is for the purpose of electricity generating works with an estimated development cost ('EDC') of more than $30 million, pursuant to Section 20 of Schedule 1 of *State Environmental Planning Policy (Planning Systems) 2021*.

## Proposal

The Yanco BESS project comprises a BESS with capacity of 250 Megawatt AC ($MW_{AC}$) and includes the following key infrastructure:

- Enclosed lithium-ion batteries;
- Power conversion systems including associated transformers;
- Underground power and fibre optic cabling interconnecting the equipment;
- Grid connection equipment including switchgear, protection and control equipment, metering, reactive power equipment, filtering equipment, auxiliary transformers and enclosures/buildings for housing equipment;
- An underground or overhead transmission line of up to approximately 450 metres long to connect the BESS to the Yanco substation;
- Earthing and lightning protection systems;
- Site office, storage area/enclosure, internal access tracks, on-site parking, security fencing, CCTV, and temporary construction laydown area;
- Vegetation screening;
- Provision of a new site access from Hume Road to the east;
- Intersection upgrades at Houghton/Hume Road and Houghton Road/Irrigation Way.
- The primary components associated with the installation of the BESS are as follows:
- Site investigations, vegetation clearing, road upgrades, levelling, access way construction, drainage system installation and installation of foundations/supports to install equipment on;
- Transport to site and installation of equipment;
- Testing and commissioning of the equipment;
- Operation and maintenance.

## 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:

- Biodiversity;
- Heritage;
- Land;
- Visual;
- Noise and vibration;
- Traffic, access and transport;
- Water;
- Hazards;
- Social and economic; and
- Waste.

Other matters requiring qualitative assessment in the body of the EIS include soils, cumulative impacts, waste management, and non-Aboriginal heritage.

Comprehensive engagement has been completed with the community, agencies and other relevant stakeholders to ensure that the project objectives are clearly understood and so that any feedback on the project can be considered and incorporated where necessary.

Mitigation measures outlined in relation to each of the above matters would be addressed in a construction environmental management plan or operational environmental management plan as appropriate sitting beneath an overarching Environmental Management Strategy.

A summary of the outcomes of quantitative analysis for key impact areas is provided in the following sections.

## BIODIVERSITY

A Biodiversity Development Assessment Report (BDAR) was prepared by Habitat Environmental Services and is attached in **Appendix F**. A number of detailed vegetation surveys and opportunistic threatened species surveys were undertaken surveys between November 2023 and January 2024.

Vegetation commensurate with nearby Plant Community Types (PCTs) was identified within the development footprint. The PCTs to be impacted by the development comprise the following:

- PCT 74 – Yellow Box – Red River Gum tall grassy riverine woodland of NSW South Western Slopes Bioregion and Riverina Bioregion (0.5 Ha).
- PCT 26 – Weeping Myall open woodland of the Riverina Bioregion and NSW South Western Slope Bioregion (0.1 Ha).

These impacts require biodiversity offsets comprising 8 credits for PCT 74 and 1 credit for PCT 26.

Through opportunistic surveys one threatened species was identified during site survey, which was determined to be a group of Superb Parrots foraging in the area. No breeding habitat for the species was identified. The BDAR concluded that, as the study area is unlikely to be important habitat for EPBC Act listed species, that an EPBC referral to the Commonwealth minister for the environment was not recommended.

The removal of 0.5 hectares of PCT 74 will impact on one entity at risk of serious and irreversible impacts (SAIIs). Given the vegetation to be removed is part of a narrow fragmented patch comprising planted vegetation, the BDAR concludes that removal is unlikely to reduce the extent of the CEEC such that its long-term survival or recovery will be severely affected within the locality. Therefore, it is considered that the development will not result in SAIIs.

A range of mitigation measures to address residual impacts have been identified in the BDAR and these are summarised in **Appendix E**.

## HERITAGE

An Aboriginal Cultural Heritage Assessment Report (ACHAR) was prepared by Premise and is provided in **Appendix G**. A review of the Aboriginal Heritage Information Management System (AHIMS) online database identified one (1) previously recorded Aboriginal sites located with close proximity to the Yanco BESS site. A pedestrian archaeological survey of the development site was undertaken to confirm the presence of the previously recorded Aboriginal heritage site and the presence of any additional, previously unrecorded Aboriginal heritage sites. While the recorded site could not be re-identified, mitigation measures will be implemented to prevent any potential impacts.

In the context of historic heritage, Premise have undertaken an assessment with regards to the SEARs requirements. The site is not mapped as containing any items of heritage significance and is not located in or adjacent to a heritage conservation area. It is concluded that the proposed development will not result in physical impacts to a heritage item. It is considered that mitigation measures including an unexpected finds protocol and visual vegetation screening will be sufficient to address residual impacts.

## LAND

A Land Use Conflict Risk Assessment (LUCRA) was prepared by Premise and is provided in **Appendix H**, and an Agricultural Land Utility Assessment (ALUA) has been prepared by Cadeema (2024) and is provided in **Appendix I**. The development site is located within the Riverina Bioregion, which primarily consists of sandy soils, saline soils and heavy grey and brown clays. The Australian Soil Classification (ASC) Soil Type map identifies that the BESS and proposed access roads are located on Chromosols (CH) soils. While not mapped within the BSAL mapping, the site is located within the draft state significant agricultural land map. The ALUA concludes that soils within the site are moderately to poorly drained, therefore the development will not result in a significant loss in agricultural production.

In terms of cumulative impacts of the project on adjoining land uses, the LUCRA concludes that impacts can be managed through ongoing consultation with developers of nearby projects and via the implementation of recommended management and mitigation measures. This would allow for project timelines to consider surrounding projects, ensuring that cumulative impacts such as construction noise and traffic, can be appropriately managed.

The LUCRA concludes that while there were a total of 47 potential land use conflicts identified, revised risk rankings identified 38 low and 9 moderate risk conflicts. These potential conflicts will be further reduced through mitigation measures.

## VISUAL

A Visual Impact Assessment (VIA) prepared by IRIS is attached in **Appendix J**. Due to the rural landscape, the VIA identifies that the visual catchment of the development is limited by the surrounding landform and vegetation. Potential visual catchments generally extend to the north and north east to properties near Research Road, and to the south and east across the fields.

It is anticipated that during construction there will be some minor impact on views due to cranes and other equipment on site. These impacts are considered short term and to have a generally minimal overall impact.

The VIA assessment considered five viewpoints within the public domain. The visual impacts from these viewpoints ranged from negligible to low impact. It is considered that with vegetation screening, these impacts will be further reduced to negligible impacts.

Visual impacts to night views are also expected to be negligible, with lighting on site expected to be minimal and managed through mitigation measures.

### NOISE AND VIBRATION

The Noise Impact Assessment (NIA) has been prepared for Assured Environmental and is provided in **Appendix K.** The NIA includes an assessment of construction noise, operational noise, road traffic noise and vibration impacts. The NIA concludes that during the loudest stages of construction for the BESS the nearby receivers would exceed the Noise Affected criteria of 50 dB(A) but would not exceed the Highly Noise Affected criteria of 75 dB(A). For the operational phase of the project, adverse amenity impacts are considered unlikely and compliance with applicable criteria is expected to be achieved provided the recommended acoustic barriers are implemented.

Additionally, the NIA has assessed the noise impacts of the roadworks for the road upgrade. The road works are expected to take place over a relatively short two week timeframe, with the noisiest works to be completed for only short periods of time. The assessment identified five receivers located closest to the road upgrades with potential to be impacted by noise impacts. Four of these receivers were identified as highly noise affected, and one was shown by 'noise affected' only to be used as a benchmark for all other further receptors classified as 'noise effected' by distance. As a result, all feasible and reasonable mitigation is recommended to be applied.

A construction noise management plan is proposed with appropriate mitigation measures to address the construction noise of the development and these short term road noise impacts.

The NIA 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.

Mitigation measures have been recommended in relation to ongoing communication with sensitive receivers and construction of noise barriers.

### TRAFFIC, ACCESS AND TRANSPORT;

A Traffic Impact Assessment (TIA) was prepared by Trafficworks and is provided in **Appendix L**. The assessment included the existing traffic environment and a traffic assessment considering traffic generation and distribution; cumulative traffic impacts; a route assessment; and an intersection assessment.

Access to the site is generally via Hume Road, Houghton Road and Irrigation Way. It is noted that part of Houghton Road runs through land owned by Transport Asset Holdings (TAHE) and is managed on their behalf by UGL. Additionally, the road also runs through land holdings comprising a right of way in favour of Graincorp. TAHE, UGL and Graincorp have provided consent for access and the required works within this road reserve.

During construction, traffic volumes are anticipated to total up to 50 light vehicle movements and 28 heavy vehicle movements per day. Operational traffic is expected to be negligible with an expected total of up to 10 vehicle movements per day. An analysis of the Houghton Road/Irrigation Way intersection revealed that the intersection will operate well under capacity with minimal queuing or delays during the construction phase. Additionally, the route assessment concluded that only minor upgrades will be

required to be deemed suitable for the proposed escorted vehicle movements. Mitigation measures have been recommended including intersection upgrades and traffic management plans.

### WATER;

A Flood Risk and Groundwater Assessment Report (FRGA) was prepared by Water Technology and is provided in **Appendix M**. The FRGA included surface water characterisation, a background review, a groundwater review, development of flood modelling, and identification of potential impacts on surface water and groundwater.

The development site is located 4.3 km to the north of the Murrumbidgee River. A recent flood study completed by Leeton Shire Council in 2019 indicates that the site is unlikely to be subject to flooding. The detailed design of the proposed development would incorporate crushed rock and concrete pads to minimise significant changes to the topography. Due to this, it is considered unlikely that the flood behaviours in the area surrounding the site would be adversely impacted. Further, direct catchment runoff modelling identified flood depth, velocity and hazard of levels applicable to the site. The FRGA concluded that the risk of surface water flooding was low.

In terms of groundwater, the construction of the development does not require dewatering. As a result, it is considered unlikely that the construction of the development would result in adverse impacts on nearby groundwater dependent ecosystems (GDEs). Additionally, chemical and fuel loads on site are expected to be minimal. In the unlikely event of a spill on site, volumes are small enough that spill kits and soil removal would be sufficient to remedy the environmental incident.

Contamination of groundwater during operation is also low likelihood due to selection of battery type, placement of battery units on site, and the suitable storage of chemicals and fuel on site. Mitigation measures provided in the PHA have been provided to manage hazards such as a battery fires during operation.

Mitigation measures have been recommended in the FRGA to manage the risks of flooding and groundwater in relation to the development.

### HAZARDS;

A Preliminary Site Investigation (PSI) has been prepared by Cadeema and is provided in **Appendix N**. The PSI included a review of historical site land uses, an assessment of environmental factors on and around the site, review of public records, review of historical imagery, a detailed site inspection, soil sample collection, soil laboratory analysis, and a subsequent assessment of whether there was a risk of contamination onsite. The PSI concluded that the site has a very low risk on contamination and that no further investigations were recommended. As such, no mitigation measures are recommended in this instance.

A Preliminary Hazard Analysis (PHA) has been prepared by Riskcon Engineering is attached in **Appendix O**. 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. Mitigation measures were recommended to further reduce residual impacts.

A Bushfire Assessment Report (BAR) was prepared by Cool Burn Fire and Ecology and is provided in **Appendix P**. The site is located clear of bushfire prone land, however, contains vegetation types that may facilitate grassfires, therefore a bushfire threat remains. Mitigation measures have been recommended to reduce the bushfire threat and ensure fires can be appropriately managed.

### SOCIAL

A Social Impact Assessment (SIA) was prepared by bd infrastructure Pty Ltd and is provided in **Appendix Q**. The SIA provides an assessment of the social impacts of the proposed development during the construction and operation (including cumulative), categorised as *way of life, community, accessibility, culture, health and wellbeing, surroundings* and *livelihoods* impacts. The SIA concluded that social impact significance of non-enhanced positive and unmitigated negative impacts ranged from low to medium significance. The SIA includes several mitigation measures that will have the effect of improving non-enhanced positive impacts and reduce unmitigated negative impacts.

### ECONOMIC

Premise has conducted an assessment of the economic impacts of the development. The key impacts identified included increased employment, investment in the local economy, pressure on local services, and safety risks and hazards. The development is anticipated to generate up to 70 construction jobs, with most workers expected to commute from Leeton and Griffith. Once operational, the project would provide up to 5 full time jobs. Mitigation measures including an Accommodation and Employment Strategy (AES) would address local economic impacts and ensure local resources and services are utilised where appropriate.

### WASTE

Premise has conducted a review of likely waste impacts associated with the construction and operation of the project. Waste generated through the construction phase would be managed in accordance with an adopted waste management plan, with materials recycled where possible, and taken to a waste disposal site where necessary.

Operational waste would be minimal and limited general waste of onsite staff.

## Justification

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 of up to 23 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.

The project is contributing to the enhancement of the existing Yanco Transgrid Substation infrastructure, 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.

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

## Conclusion

The assessments presented in the EIS indicate that the proposed Yanco BESS should be approved on the basis that it provides a range of benefits to 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 residential impacts are manageable through the implementation of standard measures.

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

The EIS concludes that the project 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.

# 1. INTRODUCTION

## 1.1 The Applicant

ACEnergy was founded out of the growing demand for renewable energy developments across Australia. ACEnergy's goal is to develop high quality utility-scale Solar Farm and Battery Energy Storage Systems (BESS) projects which will work towards a future of decarbonization.

ACEnergy have experience and capabilities in development of land and site acquisition, project planning and management, grid connections, design and engineering, offtake agreements and financial services. ACEnergy is based in Melbourne, Victoria, its head office is located at Level 3, 689 Burke Road, Camberwell, 3124, VIC and its ABN is 628 883 447.

## 1.2 Development overview

ACEnergy Pty Ltd (The Applicant) is proposing to develop an approximately 250 Megawatt AC ($MW_{AC}$) Battery Energy Storage System (BESS) on land known as Lots 516 and 521 DP 751745 at 120 Houghton Road in Yanco, NSW, 2703 (hereafter referred to as 'the development site'). Ancillary aspects of the project associated with road upgrades and electricity transmission line routes affect other land including the road reserves of Hume Road, Houghton Road and Irrigation Way, Lot 7350 DP1199551 and Lot 10 DP8449631.

The development site is located in the Leeton Shire Council (LSC) Local Government Area (LGA) in the locality of Yanco. The development site is located across two lots (Lots 516 and 521 DP 751745), with a combined total area of approximately 107 hectares, accessible from the east via Hume Road (also referred to as Hulme Road). The BESS development site has a total area of approximately 10.3 hectares of development footprint (in which the BESS compound covers approximately 8 hectares) and will be located towards the northeastern boundary of the host lots. The development site is currently used for agricultural activities and primary production.

The proposed Yanco BESS includes:

- Installation of containerised lithium-ion batteries with a capacity of up to approximately 250 $MW_{AC}$ and 1,100 MW-hours, with associated power conversion systems, switchgear and a control building;
- An underground or overhead transmission line to connect the BESS to the Yanco substation with two options up to approximately 450 metres long for the longest option;
- Cabling and collector units, site office, storage area, internal access tracks, on-site parking, security fencing, and temporary construction laydown area;
- Development of a new site access from Hume Road; and
- Intersection upgrades at Houghton/Hume Road and Houghton Road/Irrigation Way.

The local and regional context are shown **Figure 1** and **Figure 2**.

The proposed BESS, associated infrastructure and development footprint will align with, and be contained within, the development site shown in **Figure 3**.

A conceptual layout of the BESS and associated infrastructure is included in **Figure 4.**

The proposed development site would be leased from the landholder via a lease of premises.

It is expected that augmentation work within the substation would be required to facilitate connection of the BESS. These works will be managed as an ancillary component of the project and are addressed in this EIS.

## 1.3 Background

The existing Yanco Substation is located adjacent to the site, which is owned and operated by Transgrid.

The Yanco BESS is designed to provide grid flexibility services and will support the efficiency of the existing electrical network. The BESS would cycle in response to pricing signals, typically charging when prices are low and discharging during peak periods. Through regulating the availability of energy, the development will have the capacity to store unutilised energy during low demand and enhance the total supply of energy during high demand. This will benefit the existing electrical grid, improving the efficiency of electrical generation and provide consumers with a more consistent and reliable supply of energy.

A range of strategies have been employed through project conception, development and delivery, with the aim of avoiding, minimising and offsetting residual impacts associated with the project. In this context, the following is noted:

- Site selection has included identifying a site that is immediately adjacent to an existing substation, generally well separated from residential zoned land, separated from non-associated dwellings and located wholly on land zoned RU1 – Primary Production, with suitable existing access arrangements;
- The project has been refined to respond to the outcomes of technical studies, including installation of a noise barrier to provide noise attenuation to the south.

## 1.4 Related Development

A review of the Leeton Shire Council DA tracker on the 6th of August 2024 for the site address of 120 Houghton Road returned no search results for past development applications on the site. The applicant is not aware of any existing development consents related to the development site.

## 1.5 Restrictions or Covenants

A search of land titles that apply to the site has been completed and the results are provided at **Appendix R**. From a review of the relevant titles, it is noted that:

- Lots 516 and 521 are affected by an easement for electricity transmission vested in the NSW electricity transmission authority.
- Houghton Road traverses through Lot 1 DP931848 and Lot 1 DP1072592 which are owned by NSW Transport Asset Holding Entity.
- Lot 1 DP1072592 is subject to an exclusive right of way benefitting Lot 1 DP819861, which is owned by GrainCorp.

## 1.6 Report Structure

In accordance with the *State Significant Development Guidelines – Preparing an Environmental Impact Statement* (DPE 2022), this EIS has been prepared and is provided in the following format.

- **Section 1 (Introduction)** 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 (Strategic Context)** 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 (Project Description)** outlines the proposed development, including the development site, physical layout and design, uses and activities and timing.
- **Section 4 (Statutory Context)** details the statutory context relevant to the justification and evaluation of the project.
- **Section 5 (Engagement)** 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 (Assessment of impacts)** 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 (Justification of the project)** 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

This section identifies key strategic considerations that are of relevance to the assessment of the project.

## 2.1 Key features of the site and surrounds

### 2.1.1 SITE DESCRIPTION

The development site is located at 120 Houghton Road in Yanco, also known as Lots 516 and 521 DP 751745, within the Houghton Road, Hume Road and Irrigation Way road reserves and a proposed transmission line will cross Lot 7350 DP1199551, owned by the Murrumbidgee Irrigation Authority. The development site is bound by Houghton Road in the north, Hume Road in the east and agricultural lands to the south and west. The development site is located on land zoned as RU1 Primary Production under the *Leeton Local Environmental Plan 2014* (LEP) (refer **Figure 5**) and is used primarily for agricultural activities such as irrigated cropping. The development site has an area of approximately 8 ha and is located within the northeastern extent of the host lots.

The development site is generally cleared of vegetation due to historic cropping activities. Elsewhere in the host lots is dense vegetation, located towards the centre of the landholding, farming infrastructure and a farm dam. This vegetation and infrastructure would not be impacted by the project. Land in the east of the development site features dense vegetation, including the areas lining Hume Road. Via the preliminary biodiversity assessment it is noted, due to the composition and position of vegetation, that much of this is likely to be planted.

Host Lot 516 contains two existing (associated) dwelling houses, one in the east in proximity to Hume Road and one to the south-west.

The Junee Hay Railway is located to the north of the development site with Ronfeldt Road situated approximately 40m north of the railway. 60 m north of Ronfeldt Road (towards the northeastern development site boundary) is the Gogeldrie Branch Canal which meanders further north and towards the Main Canal in the east. The Murrumbidgee River is located approximately 3.2 km south of the development site at its nearest point.

To the east of the development site, along Houghton Road, is the Yanco Transgrid substation and the Yanco Sewerage Treatment Plant. The Yanco substation is bordered by Hume Road to the north and a line of vegetation/trees to the east.

Approximately eight (8) electricity transmission lines run from the Yanco substation to the east ranging from 33 kV to 132 kV of power.

The development site has a frontage to (and encroaches into) Hume Road in the east, which will be the point of access for construction and operation via a new access point. The current access to the property crosses unrelated land to the north and therefore cannot be utilised without the consent of that landowner.

### 2.1.2 THE LOCALITY

The development site is located in Yanco which is situated approximately 7 km south of Leeton and 25 km northwest of Narrandera in southwestern New South Wales. Yanco is situated within the Leeton

Local Government Area (LGA) and is a part of the Riverina region. In 2021, Yanco had a total population of 744 people (Australian Bureau of Statistics).

The Yanco CBD is located approximately 1.5km northeast of the development site and includes residential properties, a public school, hotels, a museum, a number of business and retail properties as well as the Yanco train station.

Yanco is a major agricultural centre located in the Murrumbidgee Irrigation Area. The Yanco Agricultural Institute is located approximately 4 km southeast of the development site and is comprises of over 813 ha of farmland (mix of both dry and irrigation farmlands), which is researched by the agricultural institute. The focus is on the sustainable production of crops under irrigation such as rice, cotton, canola, soybean and pulses as well as cereal.

The Murrumbidgee Valley National Park is situated approximately 3.5 km south of the development site along the Murrumbidgee River.

The Yanco Solar Farm (approved) is located approximately 1.8 km north of the development site and the Leeton Solar Farm located approximately 7 km north and is operational.

There is also the Comet Park BESS which is currently seeking SEARs from DPHI. The Comet Park BESS is located 200m to the south of the development site.

There is one associated non-residential receiver located to the east of the development site (the Yanco Transgrid substation), two associated residential receivers to the south, one non-associated non-residential receiver located to the east (the Yanco Sewerage Treatment Plant) and approximately five (5) non-associated residential properties located within 800 m of the proposed BESS location. Seven (7) non-associated residential are located within 1km of the development site (refer **Figure 6**). The closest zoned residential land is located approximately 650 metres to the north-east of the development site. The land at 35-37 Cudgel Street features two dwellings (including a recently constructed dwelling – R9).




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**Legend**

- Development Footprint
- Site Boundary
- Cadastre
- Road
- Railway
- Water Body
- NPWS Reserve
- Indicative BESS Area
- Electricity Transmission Line

Premise

**Yanco Battery Energy Storage System**

**Figure 1**
**Local Context**

State Context




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**Legend**

- Development Footprint
- Site Boundary
- LGA Boundary
- Road
- Railway
- Runway
- Electricity Transmission Line
- Water Body
- Watercourse
- NPWS Reserve

**Renewable Energy Projects**

- Under Construction
- Approved

Premise

**Yanco Battery Energy Storage System**

**Figure 2**
**Regional Context**

## 2.2 Strategic Justification

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 supports 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

In the following sections is a discussion of the applicable state and local strategies, policies and plans and how the project is facilitating the objectives of each as they relate to the delivery of renewable energy.

### 2.2.1 NSW 2021 PLAN (NSW GOVERNMENT 2011) AND RENEWABLE ENERGY ACTION PLAN (NSW GOVERNMENT 2013)

The NSW 2021 plan, released in 2011, sets state-wide priorities for action and guides resource allocation. Goal 22 of this plan seeks to protect the natural environment and includes a specific target to increase renewable energy. The plan states:

> *"We will contribute to the national renewable energy target by promoting energy security through a more diverse energy mix, reducing coal dependence, increasing energy efficiency and moving to lower emission energy sources. Specific initiatives include:*
>
> - *Building the Moree solar power plant in partnership with the Commonwealth Government under the Solar Flagship Program*
> - *Establishing a Joint Industry Government Taskforce to develop a Renewable Energy Action Plan for NSW to identify opportunities for investment in renewable energy sources."*

Since release of the 2021 plan, the NSW Government has overseen the development of the NSW Renewable Energy Action Plan (REAP). The vision of the plan is a 'secure, affordable and clean future for NSW'. Goal 1 of the REAP is to attract renewable energy investment, including to 'support mid-scale solar PV to enable an uptake of solar technologies where they are most cost effective'.

The proposed BESS sits comfortably within this state-led objective and is consistent with the goal and intent of the REAP. Large scale battery systems represent a fundamental component of the REAP, facilitating greater flexibility in electrical generation and stabilising the grid such that further deployment of renewables can be made possible.

Through assisting the expansion of renewable forms of electrical generation, the proposed BESS further supports the *NSW Government's Climate Change Policy Framework* (NSW, 2016). This framework is committed to effective action on climate change, outlining long term objectives to achieve net-zero emissions by 2050 and to make New South Wales more resilient to a changing climate. The achievement of net zero emissions by 2050 is reliant on transitions towards more sustainable and renewable forms of electrical production.

The project supports this objective by improving the reliability and stability of the electrical grid. The ability of the proposed BESS system to balance electrical demand and supply assists the management of variations in electrical demand and supply which are expected to increase with transitions to more sustainable and renewable forms of electrical production. The proposed development is consequently consistent with the objective of the *NSW Government's Climate Change Policy Framework* (NSW, 2016), supporting transitions toward lower emissions and improving the resilience of NSW to a changing climate.

### 2.2.2 NSW ELECTRICITY STRATEGY & ELECTRICITY INFRASTRUCTURE ROADMAP

To address pressing matters around reliability, affordability and the fostering of a sustainable electricity future that supports a growing economy, the NSW Government has formed the NSW Electricity Strategy.

The NSW Electricity Strategy strives to:

- Deliver Australia's first coordinated Renewable Energy Zone in the Central-West Orana region;
- Save energy, especially at times of peak demand, via the Energy Security Safeguard;
- Support the development of new electricity generators;
- Set a target to bolster the state's energy resilience; and
- Make it easier and more efficient to do energy business in NSW.

The strategy encourages new private investment in NSW's electricity system over the next decade to support an estimated 1200 jobs, primarily in regional NSW. The strategy closely aligns with the NSW Government's 'Net Zero Plan Stage 1: 2020–2030'.

In November 2020, the NSW Government released the Electricity Infrastructure Roadmap, enabled by the Electricity Infrastructure Investment Act 2020. The Roadmap builds on the foundations of the Electricity Strategy and is expected to attract up to $32 billion of private investment in regional energy infrastructure by 2030 and support over 9000 jobs, mostly in regional NSW.

The NSW Electricity Strategy acknowledges that firmed renewables are now the most cost-competitive form of new generation and cost less than the current wholesale electricity price.

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 23 years and will contribute to the NSW Government's three objectives for the electricity system: reliability, affordability and sustainability.

Five Renewable Energy Zones (REZs) are at various stages of development including in the Central West-Orana, New England, South-West, Hunter-Central Coast and Illawarra, selected based on the availability of resources and existing connecting infrastructure. The development site is not located within any of the current REZs however the project is considered to provide significant strategic value given the proximity to the town of Leeton and the development of nearby renewable energy projects in the locality.

### 2.2.3 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.

### 2.2.4 DRAFT ENERGY POLICY FRAMEWORK

The Draft Energy Policy Framework was released for comment in November 2023 and was on exhibition until 29 January 2024. The guide to the proposed framework does not specifically address the delivery of battery storage however BESS projects are consistent with the intent of the draft framework, which seeks to support the transition to renewable energy, reduce emissions and secure an affordable supply of electricity for the people of NSW. The development of battery storage projects sits comfortably within this framework, as these assist to provide firming capacity to the network and improve the uptake of renewable forms of energy, particularly solar.

The draft framework includes draft documents to assist with agreeing benefit sharing and neighbour agreements. Given the changing situation with the benefit sharing position, it is proposed to continue engaging with Council on this matter to reach a point of alignment.

### 2.2.5 RIVERINA MURRAY REGIONAL PLAN 2041

The Riverina Murray Regional Plan 2041 is the NSW Government's strategy for guiding land use planning decisions for the Riverina Murray Region (Regional Plan) for the next 20 years. The Regional Plan acknowledges the following key renewable energy focussed outcomes:

> *"Capitalise on a changing regional economy and catalyst projects such as the Wagga Wagga Special Activation Precinct, Albury Regional Job Precinct, Inland Rail, South-West Renewable Energy Zone (South West REZ) and multiple Murray River bridge projects*
>
> *Support the transition to a net zero carbon emission State by 2050, including enabling the establishment of the South-West REZ"*

The proposed development site is outside the confines of the South West REZ, however would give effect to objective 13, being to support the transition to net zero by 2050.

The proposed BESS project supports objective 13 and intended renewable energy outcomes of the Riverina Murray Regional Plan 2041 by providing capacity to reduce the Region's reliance on fossil fuels and increase electricity storage for reuse during peak consumption periods.

### 2.2.6 RIVERINA AND MURRAY JOINT ORGANISATION (RAMJO) STATEMENT OF STRATEGIC REGIONAL PRIORITIES 2022-2026

RAMJO adopted the Statement of Strategic Regional Priorities 2022-2026 (SSRP) in November 2022. The SSRP identifies the key priority areas on which RAMJO will concentrate its strategies and actions plans through to the year 2026 to enable collaboration between State Government and local councils (including Leeton Shire Council) and their communities to implement significant infrastructure projects.

The SSRP identifies seven priority pillars for the RAMJO region, the second of which highlights the priority to "Improve energy security and affordability". The SSRP identifies that the region faces several energy challenges, including aging infrastructure, use of generators, and pressure to be more environmentally friendly with renewable energy generation, and identifies actions to support energy security for the region.

The development is consistent with the priorities of the SSRP.

### 2.2.7 RAMJO REGIONAL ENERGY STRATEGY 2022-2032

RAMJO adopted the Regional Energy Strategy (RES) in November 2022 to identify actions that can be undertaken by RAMJO to address energy challenges of the region.

The RES identifies the following goals:

- A shared Strategy and a shared Implementation and Resourcing Plan (I&R Plan) for Energy Security in the region.
- Increased funding and development of local and regional energy infrastructure
- Improved energy access and transmission (extraction and feeding into the grid)
- Increased local generation of clean energy to become more self-reliant AND improved value for money
- Lack of energy supply is no longer viewed as a barrier to industry investment and growth
- Regional energy security
- The development is considered consistent with the goals identified within the RES.

### 2.2.8 LEETON LOCAL STRATEGIC PLANNING STATEMENT

LSC adopted the *Leeton Local Strategic Planning Statement* (LSPS) in June 2020. The LSPS sets out eight (8) planning priorities for the Leeton Shire LGA to support the Leeton LSPS Mission, which is to:

> *"strengthen and protect our agriculture, manufacturing, education, heritage, and environmental assets."*

The eight (8) planning priorities aim to improve the social, environmental and economic development of the Leeton Shire. These planning priorities include agriculture, employment, tourism, retail, housing, community, environment and heritage and Aboriginal cultural heritage.

Planning priority seven is relevant to the proposed development:

> *"Protect the regions environmental assets and increase resilience to natural hazards and climate change."*

Via planning priority seven, the LSC are committed to embracing technologies and practices which reduce carbon emissions such as the development of BESS. This planning priority aligns with the LSC Community Strategic Plan 2030 which promotes alternative energy and renewable energy projects in the region to help tackle climate change.

Via planning priority eight, LSC are committed to recognising and respecting both historic heritage and Aboriginal cultural heritage values through the protection of Aboriginal sites and places.

The development is consistent with the vision of planning priorities seven and eight under the Leeton LSPS.

### 2.2.9 LIVEABLE LEETON 2035

The *Liveable Leeton 2035 Community Strategic Plan* (CSP) identifies five focus areas the Leeton community and Council want to achieve for the future. These five focus areas are:

- Focus Area 1: a connected, inclusive and enriched community.
- Focus Area 2: a safe, active and healthy community.
- Focus Area 3: a thriving regional economy.
- Focus Area 4: a quality environment.
- Focus Area 5: strong leadership and civic participation.

Outcome EN2 under Focus Area 4 is relevant to the proposed development. The community seeks to live sustainably and to use their resources responsibly and to adapt to climate change in the future. This includes a strategy to *"mitigate the impacts of climate change by reducing our carbon footprint and applying sustainable energy solutions."*.

Focus Area 1 refers to the communities desire to value and celebrate their local history and diversity including Aboriginal and historic heritage.

The development is consistent with the objectives of Focus Area 4 and 1 under the Leeton CSP.

## 2.3 Relationship to National Electricity Market

The Australian Energy Market Operator (AEMO) operates the National Electricity Market (NEM) within NSW and surrounding states and territories. The AEMO has published the 2023 System Strength, Inertia and NSCAS Reports which identifies existing shortfalls and system strength nodes within the NEM. While there are no shortfalls identified within the Riverina Murray region the reports do demonstrate the increase in declared security need over the past decade as the NEM transitions from retiring coal generation to renewable generation. The AEMO highlights that technologies such as "batteries, solar and wind farms connected to the system with advanced inverters" will help in meeting these needs.

The proposed development comprises a battery energy storage system in close proximity to the existing Yanco Substation, providing opportunities for energy storage to support system strength and stability during and after disturbances to the NEM.

## 2.4 Analysis of feasible alternatives to the project

This section provides an analysis of feasible alternatives to the project, having regard to the objectives of the development, including the consequences of not carrying out the development.

Table 1 – 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 a BESS at an alternative site. |
| Option 3 | BESS Technology and Provider Alternatives | Option 3 would involve using alternative technology at the site. |
| Option 4 | BESS at 120 Houghton Road, Yanco, 'Preferred Option' | Option 4 would involve the installation and operation of a BESS at the site. |

Of the above, Option 4 is the preferred option, and this is discussed in further detail in the following sections.

### 2.4.1 OPTION 1

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:
  - Goal 22 of the NSW 2021 Plan (NSW Government 2011) which seeks to "promote energy security through a more diverse energy mix, reduce coal dependence, increase energy efficiency and move to lower emission energy sources";
  - Goal 1 of the *NSW REAP* (NSW Government 2013) which seeks to attract renewable energy investment;
  - Objectives of the Energy Security Safeguard legislation to improve the affordability, reliability and sustainability of energy by addressing the shortfall in firm capacity during times of peak demand;

### 2.4.2 OPTION 2

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. It would also entail the construction of increased lengths of connecting infrastructure (likely to include earthworks and vegetation removal). By comparison to the site of the proposed development, the length of connecting infrastructure is expected to be minimal due to the proximity to the existing Yanco substation.

By locating the BESS project adjacent to the substation, the project is also sympathetic to the existing power infrastructure setting and the industrial use of the adjoining land.

### 2.4.3 OPTION 3

Option 4 is preferred over Option 3 as:

- Option 4 provides the most reliable way, using current technology, to regulate electricity supply in a network which is expected to become increasingly variable due to the transition from traditional to more sustainable, renewable sources in the region; and
- Option 3 may not be suitable to the site due to its limited area or other reasons, requiring the seeking out and acquisition of an alternative site and construction of connecting infrastructure.

## 2.5 Existing agreements

To date, the applicant has not entered into any agreements with other parties in relation to voluntary planning agreements, negotiated landowner agreements, or benefit-sharing schemes.

# 3. PROJECT DESCRIPTION

## 3.1 Project Overview

The Yanco BESS project comprises a BESS with a delivery capacity of approximately 250 MW/1,100 MWh, incorporating on-site energy storage containers, MVPS containers, and a connection station including control rooms. The BESS will connect to the Yanco Transgrid substation located adjacent to the development site (in the east) via an underground or overhead transmission line of up to approximately 450 metres long. The development site will have an area of approximately 8 hectares.

The Yanco BESS will comprise of the following key components:

- Enclosed lithium-ion batteries;
- Power conversion systems including associated transformers;
- Underground power and fibre optic cabling interconnecting the equipment;
- Grid connection equipment including switchgear, protection and control equipment, metering, reactive power equipment, filtering equipment, auxiliary transformers and enclosures/buildings for housing equipment;
- An underground or overhead transmission line of up to approximately 450 metres long to connect the BESS to the Yanco substation;
- Earthing and lightning protection systems;
- Site office, storage area/enclosure, internal access tracks, on-site parking, security fencing, CCTV, and temporary construction laydown area;
- Vegetation screening;
- Provision of a new site access from Hume Road to the east; and
- Intersection upgrades at Irrigation Way/Houghton Road and Houghton Road/Hume Road.

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

- Site investigations, vegetation clearing, levelling, access way construction, drainage system installation and installation of foundations/supports to install equipment on;
- Transport to site and installation of equipment;
- Testing and commissioning of the equipment;
- Operation and maintenance.

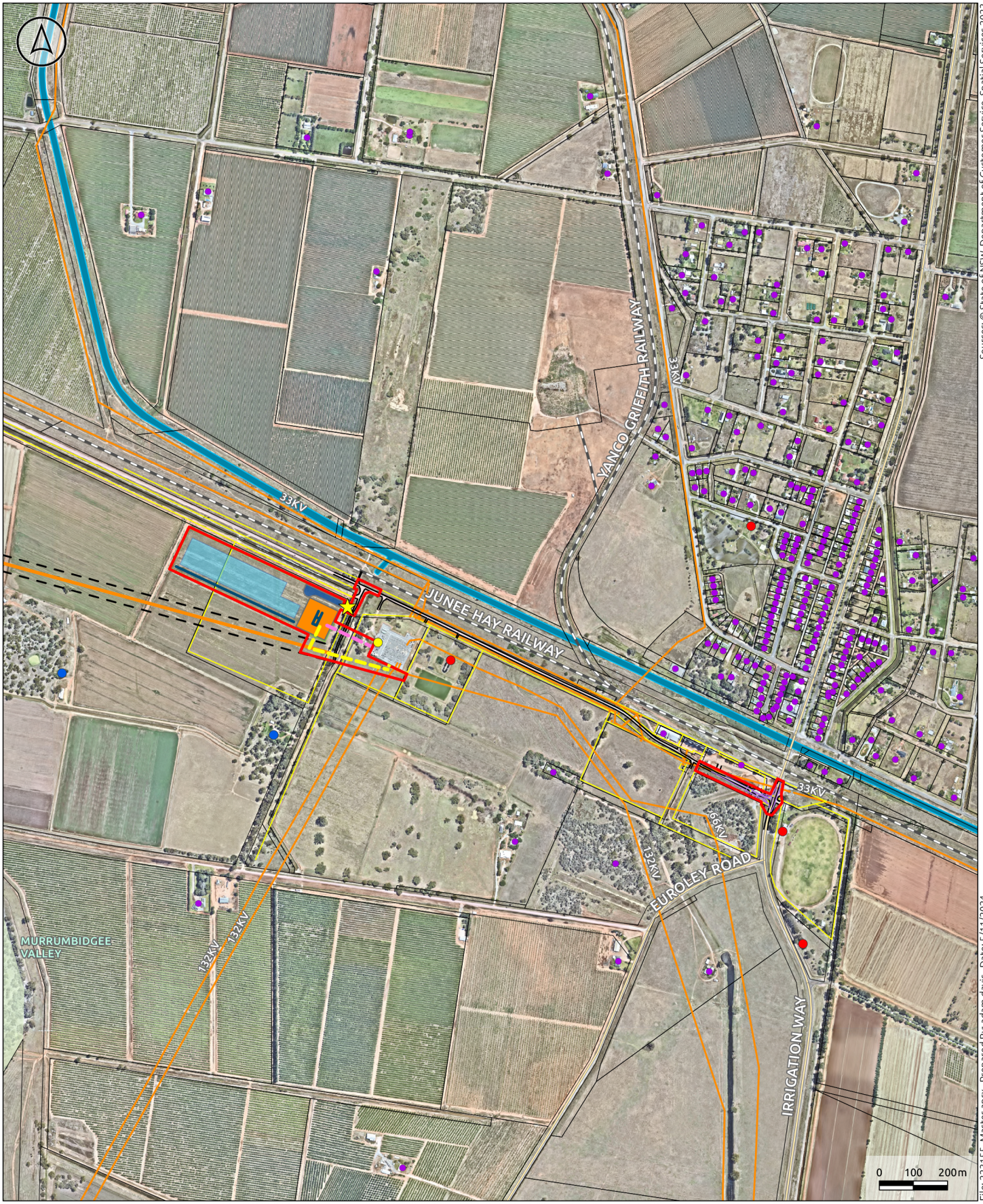
Key features of the project are summarised in **Table 2** and shown in **Figure 4**.

As the proposed development comprises a BESS with a capacity of greater than 30 MW, the development represents designated development by reference to Section 7 of Schedule 3 of the EP&A Regulations. However, Section 4.10(2) of the EP&A Act provides that state significant development is not designated development.

Table 2 – Project Summary

| Project Element | Summary of the Project |
|---|---|
| Site and development site | 10.3 Ha (BESS compound has an area of approximately 8 ha) |
| Site details | 120 Houghton Road, Yanco (Lots 516 and 521 DP751745)<br>Lot 7350 DP119951<br>Lot 10 DP8449631<br>Road reserves of Irrigation Way, Houghton Road and Hume Road |
| Development site | The development footprint of the BESS and associated operational and construction infrastructure. |
| Battery storage capacity | 250 MW/1,100 MWh |
| BESS Lifespan | Up to 23 years, with the possibility of upgrades to extend the operational life |
| Infrastructure | > An approximately 250 MW, 1,100 MW-hours (4 hour duration) BESS occupies the majority of the development site;<br>> Underground cabling connecting BESS and MVPS;<br>> A 33/132kV substation;<br>> An underground or overhead transmission line of up to approximately 450 metres long connecting the BESS substation to the Yanco Transgrid substation;<br>> Temporary construction compound including material laydown areas, site offices, vehicle parking, and amenities;<br>> Construction of a new property access from Hume Road;<br>> Chain-link/barbed-wire security fence up to 1.8 metres in height; and<br>> Specific native vegetation screening from identified visual impact locations if required. |
| Site Access | Access to Hume Road via construction of a new site access. |
| Access route | > Vehicles would access the site via Hume Highway, Irrigation Way, Houghton Road and Hume Road, utilising a proposed access location.<br>> It is anticipated that project infrastructure would be delivered from Port Kembla and transported to the site via roads approved for heavy vehicle use and then the existing access driveway (refer **Figure 15**). |
| Construction | > Construction is expected to commence in late-2025 and occur over an 8 month period, including a peak period of 4.5 months.<br>> Construction would occur during standard construction hours. However, it is anticipated that some activities that are inaudible and would not result in amenity impacts to surrounding receivers, may be required to occur outside of |

| Project Element | Summary of the Project |
|---|---|
| | standard hours in accordance with an Out-of-Hours Construction Protocol. |
| Operations and maintenance | The project would be operated remotely with occasional maintenance activities generally be undertaken by up to five (5) personnel. |
| Decommissioning and rehabilitation | > The development site would be progressively rehabilitated during the decommissioning period, including removal of the temporary construction facilities. Temporary construction facilities include temporary buildings installed on site to provide for workers associated with decommissioning.<br>> At the end of operational life, components above ground and below ground (with depth subject to agreement with landowner) would be removed and land rehabilitated to pre-development conditions. |
| Workforce | Up to 70 construction jobs and 5 operational jobs |
| Hours of Operation | 24 hours, 7 days a week |



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**Legend**

- Site Access
- Development Footprint
- Cadastre
- Surveyed Boundaries
- Railway
- Water Body
- NPWS Reserve
- Electricity Transmission Line
- Easement
- Indicative Landscaping
- Indicative Hardstand Areas
- Indicative Connection Asset
- Indicative BESS Area
- Indicative Access Road
- Road Upgrade
- Indicative Noise Wall

**Indicative ETL Connection**

- Option 1
- Option 2

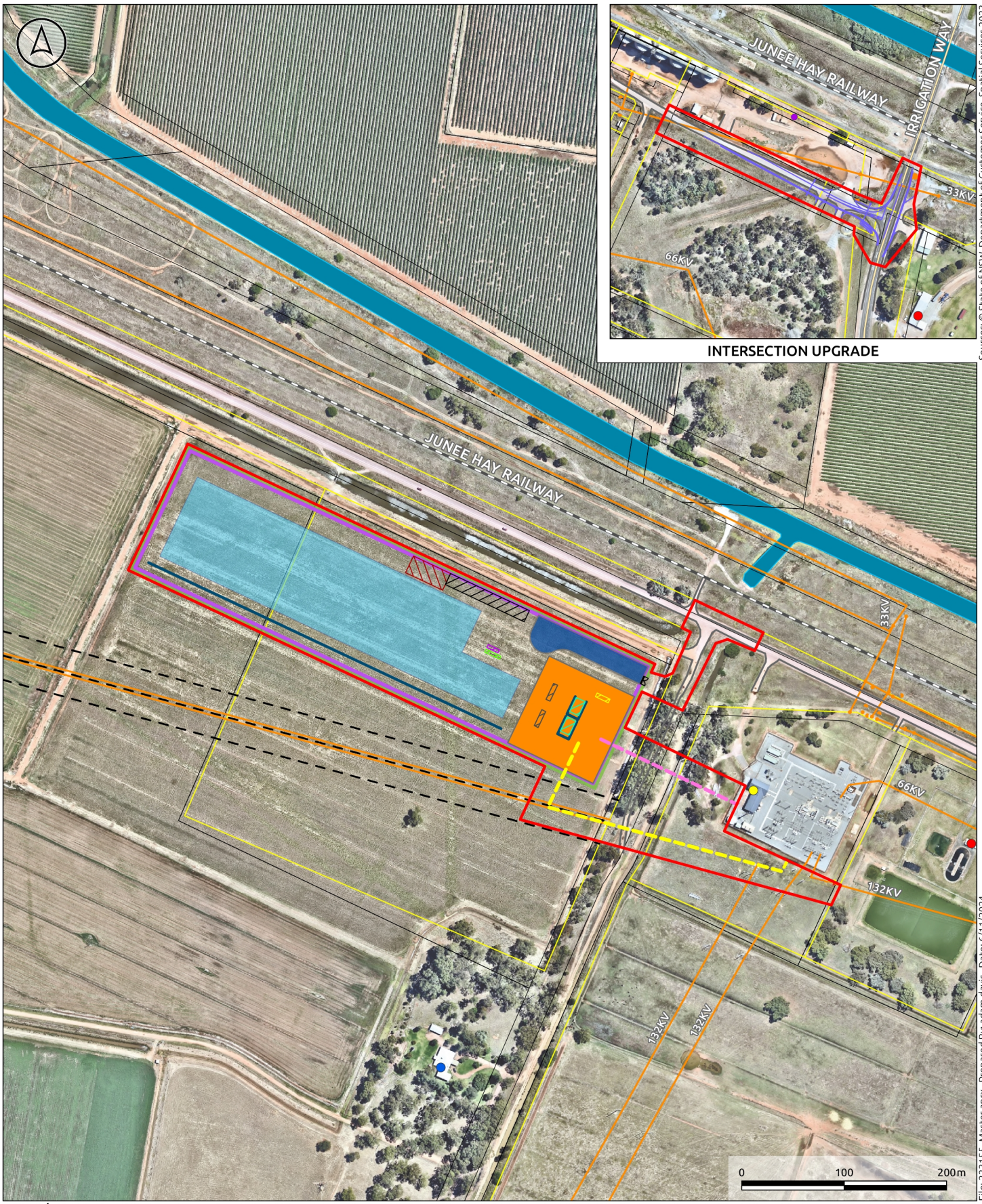
**Receivers**

- Associated Non-Residential
- Associated Residential
- Non-Associated Non-Residential
- Non-Associated Residential

Premise

**Yanco Battery Energy Storage System**

**Figure 3**
**Project Site**




INTERSECTION UPGRADE



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**Legend**

- Development Footprint
- Cadastre
- Surveyed Boundaries
- Railway
- Water Body
- Electricity Transmission Line
- Easement
- Indicative Landscaping
- Indicative Hardstand Areas
- Indicative Connection Asset
- Indicative BESS Area
- Indicative Car Park
- Indicative Temporary Construction Hardstand
- Indicative Construction Office
- Indicative Control Room
- Indicative Site Office
- Indicative Switching Room
- Indicative Transformer
- Indicative Fencing
- Indicative Noise Wall
- Indicative Access Road

**Indicative ETL Connection**

- Option 1
- Option 2

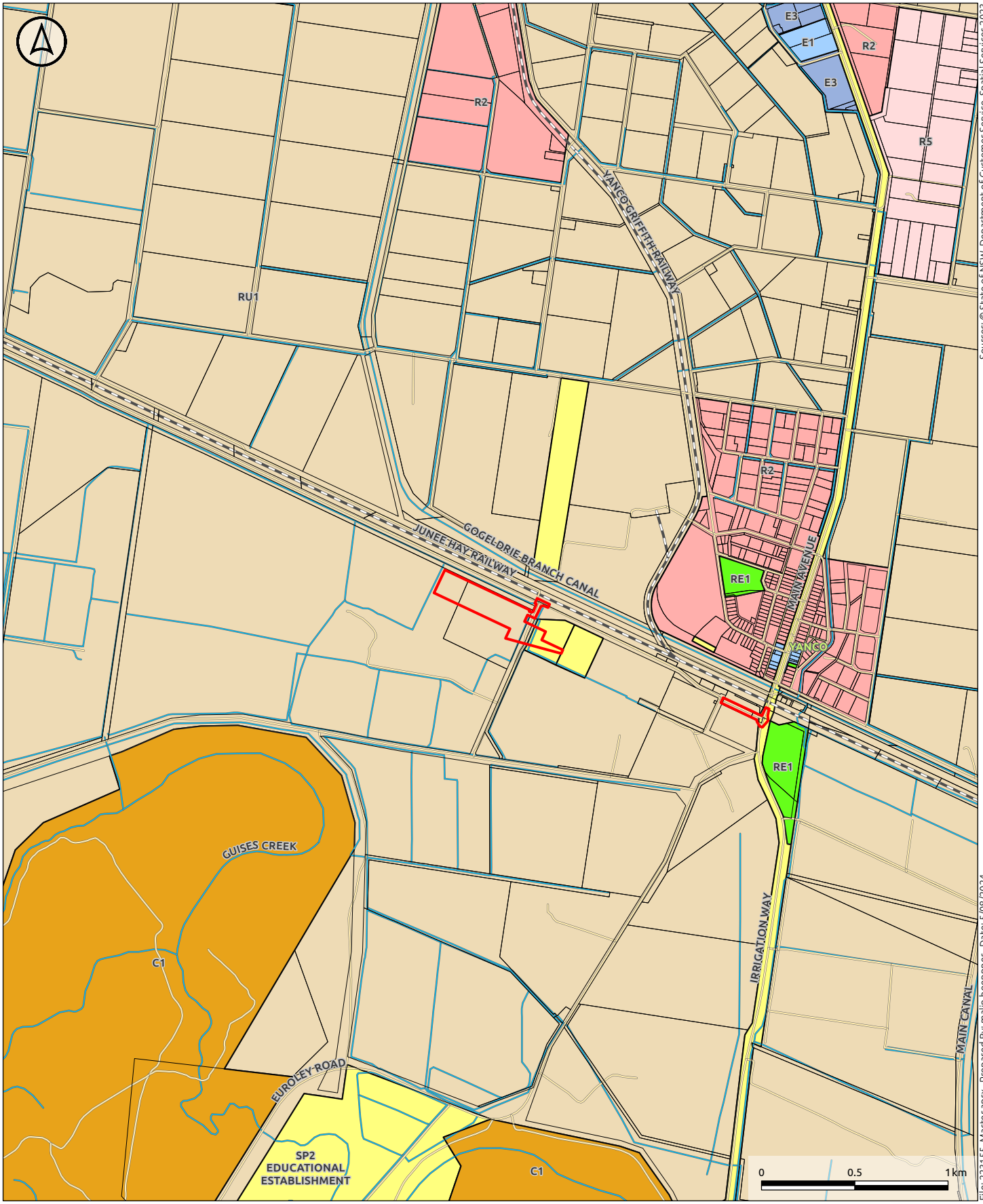
**Receivers**

- Associated Non-Residential
- Associated Residential
- Non-Associated Non-Residential
- Non-Associated Residential

Premise

**Yanco Battery Energy Storage System**

**Figure 4**
**Project Layout**



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**Legend**

- Development Footprint
- Cadastre
- Road
- Railway
- Water Body
- Watercourse

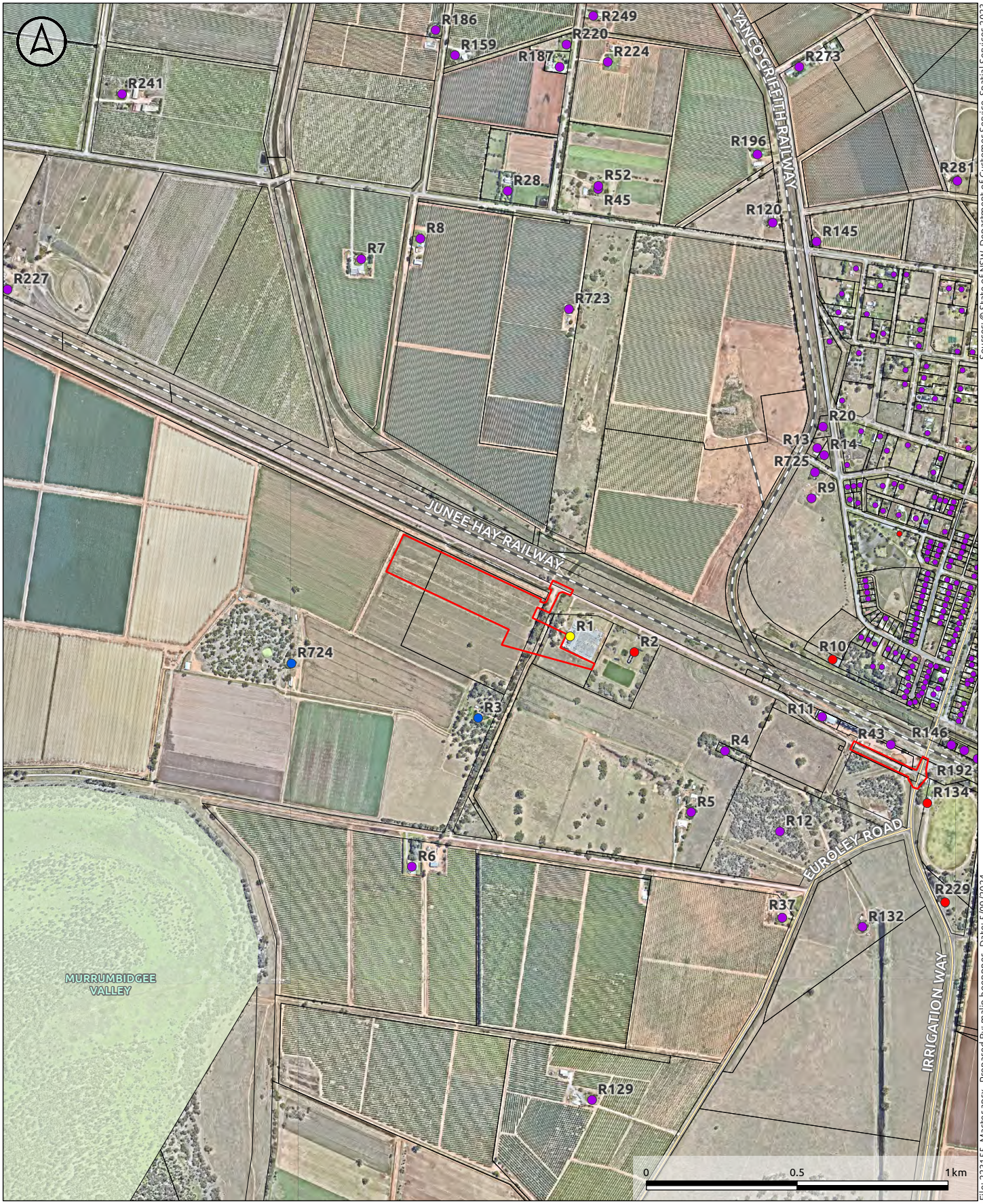
**Land Zoning (LZN)**

- C1
- E1
- E3
- R2
- R5
- RE1
- RU1
- SP2

Premise

**Yanco Battery Energy Storage System**

**Figure 5**
**Land Zoning**



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**Legend**

- Development Footprint
- Cadastre
- Road
- Railway

**Receivers**

- Associated Non-Residential
- Associated Residential
- Non-Associated Non-Residential
- Non-Associated Residential

Premise

**Yanco Battery Energy Storage System**

**Figure 5**
**Receivers**

## 3.2 Uses and Activities

The project comprises the development of electricity generating works, meaning a building or place used for the purpose of making or generating electricity, or electricity storage.

The Yanco BESS will operate in conjunction with the existing Yanco Substation on the adjoining site to manage and store electricity generated by the substation. This will positively contribute to the system security needs of the NEM.

Upon the commencement of operation, the only time personnel will be required on the site is for maintenance works. Personnel will access the site via the proposed site access from Hume Road in standard sized vehicles and occasionally a heavy vehicle may need to access the site for maintenance.

Specific project elements are discussed in the following sections.

### 3.2.1 BATTERIES

The proposed BESS contains enclosed lithium-ion type batteries which will be manufactured offsite and delivered to the site for installation. The number and exact layout of battery modules would be confirmed during detailed design. However, the location of this equipment would be limited to the areas shown on **Figure 4** and the siting of this equipment has formed the basis of the technical assessments that support this EIS.

For the purposes of the assessment of the BESS, a conservative approach was taken, whereby the maximum area and quantities of this infrastructure was considered, subject to this infrastructure being located wholly within the identified areas.

### 3.2.2 UNDERGROUND CABLING

Underground cabling and fibre optic cabling interconnecting equipment would be designed in accordance with the relevant Australian and international standards and manufacturer's specifications and installed in trenches. The cabling would be installed surrounded by thermally controlled bedding mix (such as sand, cement or similar) and backfilled with fill obtained on site.

### 3.2.3 TRANSMISSION LINE

The electrical connection from the BESS to the adjacent Yanco Substation would be via an approximately 450 metre long 132 kV powerline (overhead/underground) crossing Hume Road and Lot 7350 DP1199551.

The approximate location of the sub-transmission line has been identified but would be subject to detailed design considerations in consultation with Transgrid.

Land within the Hume Road reserve is identified as 'biodiversity' under the Leeton LEP, and predominantly comprises native vegetation along the roadside. Should the transmission line be above ground, the balance of the easement hosting the proposed transmission line would be maintained clear of vegetation. Should the transmission line be below ground, it would be under bored to minimise impacts to terrestrial vegetation. The impacts of both options have been considered in the project BDAR and via this EIS.

### 3.2.4 TRANSGRID TRANSMISSION SUBSTATION AND GRID CONNECTION

The existing substation would require some minor augmentation to accommodate the BESS infrastructure. The grid connection will involve equipment including switchgear, protection and control equipment, metering, reactive power equipment, filtering equipment, auxiliary transformers and enclosures/buildings for housing equipment.

The new feeder connection to the existing Yanco Substation is expected to comprise a single dedicated feeder bay and suitable overhead or underground conductor to which the required throughput meets Transgrid thermal rating standards. Transgrid standard design 132 kV feeder protection shall be installed for the new feeder.

### 3.2.5 INVERTERS, TRANSFORMERS AND SWITCHGEAR

Inverter stations would be installed adjacent to the batteries. Each would contain an inverter, switchgear and a step up transformer. The inverter stations would resemble 20 foot containers.

### 3.2.6 ACCESS AND INTERNAL TRACKS

Within the site, access tracks are limited to a gravel, all weather connection from the property entrance to the site compound/operations and maintenance buildings.

### 3.2.7 ANCILLARY TEMPORARY FACILITIES AND CONSTRUCTION COMPOUND

Ancillary facilities include:

- Material laydown areas, storage areas/enclosures;
- Site office;
- Internal access tracks
- Car parking areas for construction workers' transportation;
- Parking for staff and visitors.

### 3.2.8 SECURITY

The development site will be secured by security fencing surrounding the perimeter, with a height of up to 1.8 metres and access via security access gates. A CCTV system will also be installed throughout the site.

### 3.2.1 ACOUSTIC BARRIER

Permanent acoustic barriers would be installed within the site to mitigate acoustic impacts of the operational BESS. The barriers are proposed around the east, south and western sides of the transformers, with a total length of approximately 40 metres, and a height of approximately 4 metres. A barrier is also proposed along the southern elevation of the BESS equipment for a length of approximately 388 metres, and a height of approximately 4.5 metres. Acoustic barriers will allow up to 150mm gap above ground to avoid increasing flood risks within project compound. Detailed design will confirm the final location, length and height of the acoustic barriers to meet the project criteria.

### 3.2.2 VEGETATION SCREENING

Native vegetation screening will be established along the outer side of the perimeter fence. The screening will be installed to satisfy the recommendations of the visual impact assessment to ensure any residual visual impacts are mitigated.

## 3.3 Project Phases

### 3.3.1 CONSTRUCTION

The construction period is estimated to be 8 months and is expected to commence late-2025. Duration of peak construction period is approximately 4.5 months.

Construction or upgrading activities would occur during standard construction hours (7 am to 6 pm Monday to Friday, 8 am to 1 pm Saturdays; and at no time on Sundays and NSW public holidays.)

Some construction and upgrading activities that are inaudible and would not result in amenity impacts to surrounding receivers may be undertaken outside of standard hours in accordance with construction noise protocol.

A security fence will be installed on the development site boundary and access tracks will be constructed. Construction will require the use of water trucks, graders, flatbed trucks, skid steers, front end loaders, roller compactors, trenchers, backhoes, gravel trucks and aerial lifts.

Batteries required for the development would be manufactured offsite and delivered for installation following completion of concrete footing installation. Deliveries of other equipment will be made via flatbed trucks on the approved route and via the approved site entrances. The nominated route for over-dimensional movements is as follows:

- Port Kembla > Tom Thumb Road > Spring Hill Road > Masters Road > Princes Motorway > Mt Ousley Road > Picton-Wilton Road > Hume Highway > Sturt Highway > Newell Highway > Audley Street > Irrigation Road > Houghton Road > Hume Road > Site Entry

Standard movements (i.e., non over-dimensional) are likely to take a route from the Port of Sydney, as follows:

- Access from the Hume Highway (M31) via the Sturt Highway (A20) through Wagga Wagga to Narrandera, to Irrigation Way towards Yanco, left onto Houghton Road, left onto Hume Road, and then into the development site.

Given the generally flat nature of the development site and lack of vegetation, minimal preparation is required in advance of installing the BESS.

The construction phase will comprise seven key stages (stages 3, 4, 5, 6 overlap during the 4.5 month peak construction period):

1. Establishment, drainage, roads & fencing
2. Footing installation
3. Delivery and installation of cabling
4. Steel platform installation
5. MVPS & BESS delivery & installation, including electrical installation

6. Control room, transformer & switchgear delivery & installation
7. Commissioning & demobilisation

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

- Off-site manufacture of the BESS equipment.
- Vegetation clearing to provide a constructable site.
- Installation of fencing and gates to secure the development site, connection station and BESS.
- Levelling the development site as needed.
- Installation of concrete footings and steel platforms on which to install the BESS and MVPS containers.
- Delivery and installation of approximately 250 MW/1,100 MWh BESS.
- Underground cabling and construction of earthing system.
- Auxiliary power protection, indication and control systems.
- Lighting inside BESS and MVPS containers to provide illumination for operation and/or maintenance, when needed, at night.
- Control rooms and connection station.
- Ancillary high voltage equipment, such as circuit breakers, switching equipment, filters, transformers and other electrical protection equipment.
- Connection of the BESS to the Yanco Substation to east on Hume Road.
- Testing and commissioning.

The project is expected to generate up to 70 Full Time Equivalent (FTE) jobs during construction. This number has been derived by considering actual employment rates associated with similar scale projects completed by the proponent.

### 3.3.2 OPERATION

The BESS will be operational for a period of up to 23 years, operating 24 hours and day, seven days a week. The area of the BESS would be leased for the duration of the development from the associated landowners.

Once operational, the BESS will be operated by site-based staff whose routine work generally involves:

- Monitoring, testing and maintenance of onsite equipment;
- Receipt of goods;
- Removal of waste; and
- Other general site maintenance (e.g. vegetation management).

The above activities are expected to generate up to five (5) FTE jobs during operation, associated with operation, maintenance, and vegetation management.

The remainder of the development site could continue to be used for agricultural purposes surrounding the BESS development site, such as livestock grazing or cropping. This would assist to control fuel loads surrounding the development and maximise economic output from the subject land.

### 3.3.3 DECOMMISSIONING

It is anticipated that the BESS would be operational for a period of up to 23 years after which time the existing BESS would be removed and the development site would be decommissioned. Upon decommissioning, the following indicative steps would occur:

- BESS and associated infrastructure would be unbolted from concrete slabs and removed by crane onto transporters. All site infrastructure would be taken away from the development site for resale or to an appropriate recycling or waste facility;
- Underground services would be cut back to below ground level and capped, with the agreement of landowners; and
- The development site would then be landscaped to a safe, clean and stable state enabling it to return to an unhindered use for agricultural of other permissible purpose.

It is possible that the infrastructure may be upgraded rather than decommissioned and the lifespan extended, subject to necessary approvals and agreements with landowners. It is also possible that the site may be decommissioned sooner, subject to technology and project viability.

# 4. STATUTORY CONTEXT

## 4.1 Summary

In accordance with Section 3.5 of the *State Significant Development Guidelines – Preparing an Environmental Impact Statement* (DPIE 2022), the statutory requirements for the development are set out in **Table 3.**

Further discussion around statutory requirements and pre-conditions to approval are discussed in **Table 4**.

**Table 3 – Statutory Requirements**

| Category: | Assessment |
|---|---|
| **Power to grant approval** | Section 4.5 of the EP&A Act provides that the consent authority is the Independent Planning Commission (if the development is of a kind for which the Commission is declared the consent authority by an environmental planning instrument) or the Minister (if the development is not of that kind).<br>Section 4.36(2) of the EP&A Act provides that a State Environmental Planning Policy may declare any development, or any class or description of development, to be State significant development.<br>Section 2.6(1) of the Systems SEPP provides that development is declared to be State significant for the purposes of the EP&A Act if:<br>> 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<br>> The development is specified in Schedule 1 or 2 of the SEPP.<br>> The consent authority for the proposed development is likely to be the Minister as the proposed development satisfies:<br>– Section 2.6(1)(a) of the Systems SEPP on the grounds that it is permitted with consent under Section 2.361(b) of the Infrastructure SEPP; and<br>– Section 2.6(1)(b) of the Systems SEPP on the grounds that it is for the purposes of electricity generating works that has an EDC of more than $30 million in accordance with Section 20 of Schedule 1 of the SEPP.<br>> Unless it is the Independent Planning Commission if, in accordance with Section 2.7(1) of the Systems SEPP:<br>– The council of the area in which the development is to be carried out (RVC) has duly made a submission by way of objection under the mandatory requirements for community participation in Schedule 1 of the EP&A Act;<br>– At least 50 unique submissions (other than from a council) have duly been made by way of objection under the mandatory requirements for community participation in Schedule 1 to the Act; and |

| | |
|---|---|
| | – The development application is made by a person who has disclosed a reportable political donation under section 10.4 to the Act in connection with the development application. |
| **Permissibility** | Electricity generating works are prohibited in the RU1 Primary Production zone applying to the development site under the relevant local environmental plan (LLEP 2014).<br>Notwithstanding the above, the development is permitted with consent as the proposed development satisfies Section 2.6(1)(a) of the Systems SEPP as electricity generating works are permitted with consent within prescribed rural zones under Section 2.36(1)(b) of *State Environmental Planning Policy (Transport and Infrastructure) 2021* (the Infrastructure SEPP).<br>Under Section 2.35 of the Infrastructure SEPP, prescribed rural zones include the RU1 Primary Production zone which applies to the development site under the LLEP 2014. A proposed power line connection to the Yanco Transgrid substation is permissible as an ancillary component of an electricity generating works.<br>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 which have an EDC of more than $30 million in accordance with Section 20, Schedule 1 of the Systems SEPP. |
| **Other approvals** | Commonwealth approvals may be required for the following reasons:<br>> A search for potential matters of national environmental significance (MNES) that may trigger the need for referral to the Australian Department of Climate Change, Energy, the Environment and Water (DCCEEW) via the online Protected Matters Search Tool (PMST) - (results shown in **Appendix F**):<br>– Identified no World Heritage Properties or National Heritage Places protected by the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).<br>– Identified five (5) Wetlands of International Importance (Ramsar Wetlands).<br>– Identified thirty-seven (37) threatened species which may be present in or within proximity to the development site.<br>– Identified five (5) threatened ecological communities with the potential to occur in or within proximity to the development site.<br>– Identified ten (10) migratory bird species which may be present in or within proximity to the development site.<br>The project BDAR forms the view that the project is not likely to result in MNES impacts and thus referral to DCCEEW is not required.<br>A review of the National Native Title Tribunal's Native Title Register did not identify any Native Title claims or applications, or Indigenous Land Use Agreements applying to the development site under the *Commonwealth Native Title Act 1993* (the Native Title Act). |
| **Pre-condition to exercising the** | Pre-conditions to approval include consideration of the following: |

| | |
|---|---|
| **power to grant approval** | > Consideration as to whether the project site is suitable in its contaminated state - or will be suitable, after remediation - for the purpose for which the development is proposed to be carried out<br>> Consideration as to whether the project represents potentially hazardous or offensive development.<br>> Consideration of impacts associated with development with a frontage to a classified road.<br>> Consideration of impacts associated with earthworks.<br>> Consideration of impacts on land identified as biodiversity.<br>These matters are addressed in **Table 4**. |
| **Mandatory matters for consideration** | Pursuant to Section 4.15 of the EP&A Act, the following mandatory matters for consideration apply:<br>> Relevant environmental planning instruments, including:<br>– State Environmental Planning Policy (Resilience and Hazards) 2021 (the Hazards SEPP):<br>o Chapter 3 Hazardous and offensive development; and<br>o Chapter 4 Remediation of land.<br>– State Environmental Planning Policy (Transport and Infrastructure) 2021 (the Infrastructure SEPP):<br>o Chapter 2 Infrastructure.<br>– State Environmental Planning Policy (Planning Systems) 2021 (the Systems SEPP):<br>o Chapter 2 State and regional development.<br>– State Environmental Planning Policy (Biodiversity and Conservation) 2021 (the Biodiversity SEPP):<br>o Chapter 3 Koala habitat protection 2020<br>– LLEP 2014.<br>> The relevant Development Control Plan (DCP) (the Leeton DCP 2022). It should be noted that the application of a DCP is excluded from SSD under Section 2.10 of the Systems SEPP.<br>> The likely impacts of the development including environmental impacts on natural and built environments and social and economic impacts in the locality.<br>> The suitability of the development site for the development.<br>> The public interest. |

## 4.2 Pre-conditions to approval

**Table 4 – Pre-conditions table**

| Statutory reference | Pre-condition | Assessment |
|---|---|---|
| *State Environmental Planning Policy (Resilience and Hazards) – section 4.6(1)(b)* | A consent authority must be satisfied that the land is suitable in its contaminated state - or will be suitable, after remediation - for the purpose for which the development is proposed to be carried out. | A preliminary site investigation prepared by Cadeema (2024) concluded that there is no evidence of potentially land contaminating activities have occurred on the site other than for agricultural purposes. Therefore it was concluded that there is a negligible risk of contamination on the site, and no further investigations were recommended. |
| *State Environmental Planning Policy (Resilience and Hazards) – Chapter 3* | Section 3.7 of the Hazards SEPP requires consideration of relevant circulars and guidelines in consideration of whether a proposed development represents potentially hazardous or offensive development. Where a conclusion is reached that a project is either, or both, a potentially hazardous or offensive development, must prepare a PHA in relation to the project. | Whilst the project is not assessed as representing potentially hazardous or offensive development, by response to the SEARs, a PHA has been provided – refer to **Section 6.9** and **Appendix O**. |
| *State Environmental Planning Policy (Transport and Infrastructure) 2021* – Section 2.119 | Development with frontage to a classified road | The subject site is accessed from Hume Road, via Irrigation Way which is identified as a Classified Road. The development involves upgrades to the Irrigation Way and Houghton Road intersection.<br>The TIA considers the impacts of the project in the context of the operation of Houghton Road and Irrigation Way– refer **Section 6.7** and **Appendix L.** |
| *Leeton Local Environmental Plan 2014* | The Leeton LEP 2014 sets up the environmental planning provisions applicable to the Leeton LGA and is administered by Leeton Shire Council. | The project is wholly located within the RU1 Primary Production zone (refer **Figure 5**), which prohibits electricity generating works. Notwithstanding, the project is not inconsistent with the objectives of the zone, and is particularly |

| Statutory reference | Pre-condition | Assessment |
|---|---|---|
| | | consistent with the following objectives:<br>> To minimise the fragmentation and alienation of resource lands.<br>> To minimise conflict between land uses within this zone and land uses within adjoining zones.<br>The project is located on the edge of an agricultural area, adjoining an existing substation to minimise any fragmentation of the agricultural land.<br>The LUCRA considers the impacts of the project on adjoining land uses – refer **Section 6.4** and **Appendix H**. |
| | Section 6.1 of the LLEP requires consideration of a range of factors prior to the grant of consent for earthworks. | Relatively minor earthworks are required to provide a level development site to accommodate the proposed battery arrangement and install ancillary elements. Relevant heads of consideration are discussed in **Section 6.4**. |
| | Section 6.3 of the LLEP requires consideration of a range of factors prior to the grant of consent for works on land identified as biodiversity. | Works on land identified as biodiversity have been designed to reduce potential impacts. Relevant heads of consideration are discussed in **Section 6.1**. |

## 4.3 Environmental Planning and Assessment Act 1979

#### 4.3.1.1 Objects of the EP&A Act

In New South Wales (NSW), the relevant planning legislation is the Environmental Planning and Assessment Act 1979 (EP&A Act). The EP&A Act instituted a system of environmental planning and assessment in NSW and is administered by the Department of Planning, Housing and Infrastructure (DPHI). The objects of the EP&A Act are:

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

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

*(c) To promote the orderly and economic use and development of land,*

*(d) To promote the delivery and maintenance of affordable housing,*

*(e) To protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,*

*(f) To promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),*

*(g) To promote good design and amenity of the built environment,*

*(h) To promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,*

*(i) To promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,*

*(j) To provide increased opportunity for community participation in environmental planning and assessment.*

The proposed development is not considered to be antipathetic to the above objects.

## 4.4 Other environmental planning instruments

### THE LEETON SHIRE LOCAL ENVIRONMENTAL PLAN 2014

Section 1.2 sets out the aims of the Leeton LEP. The project is not antipathetic to the aims of the LLEP and is particularly aligned with the aims 2(a) (b) (g) and (h) on the basis that:

- The project has demonstrated through a thorough assessment of the potential impacts that the project can be developed with nothing other than minor impacts on the surrounding locality.
- The project will generate both construction and operational jobs, contributing to the ongoing economic grown and development of the Leeton area, as well as the state and country.
- As outlined in **Section 7.9**, the project is aligned with the principles of ESD.
- As outlined in **Appendix H**, the use of the site for electricity generating works is not anticipated to detrimentally impact the opportunity for the land to return to agricultural uses if the project is decommissioned. The project will preserve the agricultural values of the land to enable future opportunities for all forms of primary production.
- As outlined in **Appendix H**, the risk of land use conflicts has been considered and concluded that the mitigation measures discussed across the specialist reports will sufficiently mitigate the risk of land use conflicts.

By reference to the assessment within this EIS, the project is not antipathetic to the aims and objectives of the LLEP, and the RU1 zone specifically, and provides adequate consideration of relevant pre-

conditions to approval to demonstrate that the development can be achieved without resulting in significant or detrimental impacts to the locality or region. Taken in the round, the assessment confirms that the range of impacts are acceptable, and any residual impacts are adequately managed via recommended mitigation measures.

# 5. ENGAGEMENT

## 5.1 Introduction

This chapter provides an outline of the consultation and engagement activities carried out for the Yanco Battery Energy Storage System (BESS) project. It identifies who has been consulted, how the consultation was carried out, the feedback received and how the feedback has been addressed. The overarching objective for community engagement was to build relationships of trust that provided opportunities for the community to understand the project and to provide feedback about impacts and benefits that could be fed into project development and assessment.

This chapter outlines additional consultation and engagement activities for the development of the Environmental Impact Statement (EIS).

## 5.2 Secretary's Environmental Assessment Requirements

The Secretary's Environmental Assessment Requirements (SEARs) for the preparation of the EIS were provided for the project on 28 February 2024. SEARs relevant to community and stakeholder engagement are outlined in **Table 5.**

**Table 5 – Response to SEARs**

| SEARs item | Project response |
|---|---|
| **Consultation for SSD-67478479 (Yanco Battery Energy Storage System)** | |
| 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.<br>In particular, you must undertake detailed consultation with affected landowners surrounding the development, relevant government agencies and the relevant local Council(s). | Stakeholders were identified by various methods, including:<br>> inclusion of all stakeholders referenced in the SEARs<br>> review of Scoping Report to capture stakeholders and community from early engagement<br>> consideration of the local and wider community including:<br>• the project's location and proximity to the township of Yanco and Leeton<br>• the potential direct operation and construction impacts of the project limited to the towns<br>• the potential indirect impacts and operational benefits contributing to the Yanco and Leeton area<br>> networking with different individuals and community organisations<br>> discussion with Leeton City Council.<br>No consultation was conducted with exploration license mineral holders as there were none in the area. The key stakeholders surrounding the development, including affected landowners, relevant government agencies, and the local council, are outlined in **Table 6**. |

| SEARs item | Project response |
|---|---|
| **Consultation for SSD-67478479 (Yanco Battery Energy Storage System)** | |
| The EIS must detail how engagement undertaken was consistent with the Undertaking Engagement Guidelines for State Significant Projects (DPIE, 2022). | ACEnergy delivered an engagement program consistent with NSW Department of Planning, Housing and Infrastructure (DPHI) expectations around early and effective engagement for State Significant Projects.<br>ACEnergy approach addressed the core principles of *Undertaking Engagement Guidelines for State Significant Projects* (2024) and aimed to connect with the relevant local and state government authorities, relevant agencies and community stakeholders.<br>ACEnergy achieved this through a transparent approach, that:<br>> Helped the local community understand the project benefits, development approval process and how they could participate in the process.<br>> Undertook responsive engagement, by collecting and presenting information and outlining an engagement approach that demonstrated appropriate effort under relevant guidelines.<br>> Responded to community feedback by making relevant changes to the project and including appropriate mitigation measures in the EIS. |
| The EIS must 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. | The consultation process throughout the development of the EIS and the issues raised during each individual engagement activity are identified in **Table 7**. **Table 7** also outlines where changes have been made to the development design in response to these issues and provides explanations for instances where no changes have been made. |

## 5.3 Community and stakeholder engagement

ACEnergy and bd infrastructure prepared a community and stakeholder engagement plan (CSEP) for the EIS phase in February 2024. The overarching objective for our community engagement was to build relationships of trust that provided opportunities for the community to understand the project and to provide feedback about impacts and benefits that could be fed into project development and assessment. This section summarises the CSEP.

### 5.3.1 PURPOSE OF ENGAGEMENT

The engagement process for the project aimed to:

> provide an update and inform community and stakeholder members about the project, its impacts and benefits

- use quality engagement to develop relationships with the community and understand values relevant to the development of the project
- help the local community understand the project benefits, development approval process and how they can participate in the process
- demonstrate ACEnergy's commitment to appropriate and responsive engagement, by collecting and presenting information and outlining an engagement approach that demonstrates appropriate effort under relevant guidelines
- respond to community feedback by making relevant changes to the project and including appropriate mitigation measures in the EIS
- enable authentic conversations through all stages of the approvals process by using quality engagement and communications materials that enable community members and stakeholders to provide informed feedback.

The CSEP followed engagement principles from the following guidelines:

- *Undertaking Engagement Guidelines for State Significant Projects* (DPHI, 2024)
- *Social Impact Assessment Guideline for State Significant Projects* (DPIE, 2023).

### 5.3.2 STAKEHOLDERS

For the CSEP, stakeholders were identified through various methods, including:

- Inclusion of all stakeholders referenced in the SEARs
- Review of Scoping Report to capture stakeholders and community from early engagement
- Consideration of the local and wider community including:
  - The project's location and proximity to the township of Yanco and Leeton
  - The potential direct operation and construction impacts of the project limited to the towns
  - The potential indirect impacts and operational benefits contributing to the Yanco and Leeton area
- Networking with different individuals and community organisations
- Discussion with Leeton City Council.

Stakeholders are categorised based on their impact and/or interest and grouped into four main categories and ten subgroups (refer to **Table 6**).

**Table 6 – Stakeholder categorisation**

| Stakeholder group | Individual stakeholder subcategory | Description | Key focus |
|---|---|---|---|
| Government authorities | > Local Council | > Leeton City Council | > Detailed consultation.<br>> Direct impacts on Council assets and constituents during construction, operation and decommissioning. |

| Stakeholder group | Individual stakeholder subcategory | Description | Key focus |
|---|---|---|---|
| | | | > Interest in Voluntary Planning Agreements and community benefits. |
| | > State regulator | > DPHI | > Detailed consultation.<br>> Regulatory compliance and impact assessment.<br>> Interest in Voluntary Planning Agreements and community benefits. |
| Relevant government agencies | > Government agencies and departments | > Crown Lands<br>> Heritage NSW<br>> DPE Water<br>> DPI Agriculture<br>> NSW Department of Climate Change, Energy, the Environment and Water.<br>> Rural Fire Service<br>> Fire and Rescue NSW | > Detailed consultation.<br>> Compliance and feedback on social and environmental impacts of the project |
| Infrastructure and service providers | > Infrastructure owners | > Transgrid | > Detailed consultation.<br>> Connection to the relevant electricity infrastructure and connection capacity<br>> Impacts to Transgrid infrastructure |
| Community | > Affected landowners surrounding the development | > Surrounding residential landowners on streets within a 2km radius:<br>– Cudgel Street<br>– Binya Street<br>– Main Avenue<br>– Progress Street<br>– Houghton Road<br>– Euroley Road<br>– Irrigation Way | > Detailed consultation.<br>> Impacts during construction and operation including visual, noise, traffic and vibration.<br>> Social and environmental impacts and benefits associated with the project. |

| Stakeholder group | Individual stakeholder subcategory | Description | Key focus |
|---|---|---|---|
| | | – Hume Road<br>– River Road<br>– Research Road<br>– Hebden Street.<br>– Surrounding business landowners:<br>– Graincorp<br>– Murrumbidgee Irrigation | |
| | > Community groups | > Yanco Public School<br>> Yanco Powerhouse Museum<br>> Yanco Agricultural High School<br>> Yanco Agricultural Institute<br>> Narrandera Landcare<br>> Yanco Creek and Tributaries Advisory (contact Murrumbidgee Landcare)<br>> Council Leeton Business Chamber<br>> Yanco Lion's Club<br>> Can Assist Leeton<br>> Murrami and Yanco Country Women's Association<br>> Leeton Art Society<br>> Salvation Army. | > Concerns the direct and indirect environmental and social impacts of the project.<br>> Interest in operational benefits such as Voluntary Planning Agreements, benefit schemes, and employment opportunities. |
| | > Aboriginal stakeholders | > 14 Registered Aboriginal Parties (RAPs)<br>> Local Aboriginal Land Council | > Cultural significance or connection to Country impacted by the project. |

| Stakeholder group | Individual stakeholder subcategory | Description | Key focus |
|---|---|---|---|
| | | (LALC) - Leeton District LALC | |
| | > Broader community | > Leeton township<br>> Northern- eastern portion of the Yanco township | > General interest about the project among including environment, benefit sharing, energy supply, general impacts on the town |

## 5.4 Communication and consultation summary

The engagement strategy for the project utilised a variety of communication channels and activities to enhance community and stakeholder participation and feedback relevant to the project's scale, size and impact. Community engagement methods included both in-person and online approaches to reach a wider range of individuals and cater to their preferred mode of communication and have been supplemented by engagement in late 2023 during development of the scoping report, including:

- Posted and emailed project update newsletter
- A toll free, information email and dedicated website
- Advertising in The Irrigator newspaper and Facebook
- In person community information session with a supporting information flyer and news article
- Briefings and ongoing email and phone communication
- A community feedback survey.

This diverse range of engagement methods contributes to a more fulsome range of data collection, ultimately aiding in more informed decision-making for the project. A summary of engagement activities and issued raised with each stakeholder group are outlined in **Table 7** below.

## 5.5 Consultation summary

Table 7 – Consultation summary

| Stakeholder category | Individual stakeholder subcategory | Consultation summary | Issues raised | Project Response |
|---|---|---|---|---|
| **Government authorities** | Leeton City Council | A briefing was conducted between ACEnergy and Council on 7th Nov 2023 to introduce the project.<br>Email communications between ACEnergy and Leeton Shire Council between 1st March 2024 and 1st July 2024 to seek guidance on proposed usage of Houghton Rd and road upgrades. | Leeton Shire Council agreed with the proposed road usage and the proposed road upgrades at both Hume Rd/Houghton Rd and Irrigation Way/Houghton Rd intersections. | None |
| | DPHI | Ongoing engagement throughout the EIS preparation period. | None to note | None |
| **Relevant regulators, agencies, and service providers** | Heritage NSW (ACH) | The draft Aboriginal Cultural Heritage Assessment Report was provided via the Major Projects Portal on 11 September 2024 to discuss potential impacts and seek guidance. | Heritage NSW noted that as the ACHAR was in draft form and did not include the RAPs feedback. Heritage NSW recommended that the finalised ACHAR including RAPs feedback be submitted as part of the EIS, as which time Heritage NSW would review and provide comments. | No feedback from RAPs was received during the consultation period. The finalised ACHAR will be included in the EIS submission. |

| Stakeholder category | Individual stakeholder subcategory | Consultation summary | Issues raised | Project Response |
|---|---|---|---|---|
| | Fire and Rescue NSW | The draft Preliminary Hazard Analysis was provided via the Major Projects Portal on 19 September 2024 to discuss potential impacts and seek guidance. | FRNSW advised that a Fire Safety Study (FSS) is likely to be recommended. The FSS would be developed in accordance with Hazardous Industry Planning Advisory Paper No 22 as a condition of consent. | A FSS will be prepared in accordance with consent conditions. |
| | Rural Fire Service (RFS) | The draft Bushfire Assessment Report was provided via the Major Projects Portal on 20 September 2024 to discuss potential impacts and seek guidance. | The RFS have advised that they cannot pre review our bushfire report, and as such they recommended that the proposal be referred to the next stage of the process where they can undertake a full assessment of the report. | No response required. A bushfire assessment has been addressed in **Section 6.11**. |
| | Crown Lands | The draft Land Use Conflict Risk Assessment was provided via the Major Projects Portal on 20 September 2024 to discuss potential impacts and seek guidance. | Crown Lands have advised that all issues have been identified and addressed in the proposed LUCRA and that there were no further comments. Crown Lands note that ACEnergy have advised of future consultation in relation to the Houghton Road upgrades. | Further details will be provided to Crown Lands as the road upgrades are planned and developed. |
| | Biodiversity Conservation and Science | A summary of the Biodiversity Development Assessment Report (BDAR) was provided via the Major Projects Portal on 26 September 2024 to discuss potential impacts and seek guidance. | No response has been received to date. | No response required to date. |

| Stakeholder category | Individual stakeholder subcategory | Consultation summary | Issues raised | Project Response |
|---|---|---|---|---|
| | Transgrid | Email communications were sent on 29th August 2024 to seek owner's consent for the proposal.<br>Transgrid indicated they were working towards providing owner's consent by 30th September 2024. | Transgrid provided owner's consent including feedback as follows:<br>1. Transgrid does not propose to enact its Part 5 rights for the augmentation works at Yanco 132 k substation. All required grid connection works for Customer connection must be included in the EIS for DA approval of complete scope.<br>2. The development footprint would need to be extended to include the Yanco 132 kV substation switchyard to adequately capture all required connection works. Transgrid have confirmed that this can be completed in post-notification stage when the applicant responds to agency comments. | The applicant's response to Transgrid's feedback is as follows:<br>1. EIS has been updated to remove reference to Part 5 rights.<br>2. Development footprint will be updated in post-notification stage |
| | NSW DCCEEW Water | The draft Flood Risk and Groundwater Assessment was provided via the Major Projects Portal on 26 September 2024 to discuss potential impacts and seek guidance. | No response has been received to date. | No response required to date. |
| | Department of Primary Industries and Regional | The draft Land Use Conflict Risk Assessment was provided via the Major Projects Portal on 20 September 2024 to | NSW Resources have advised that they have reviewed the draft LUCRA and have no specific comments in relation to | No response required. |

| Stakeholder category | Individual stakeholder subcategory | Consultation summary | Issues raised | Project Response |
|---|---|---|---|---|
| | Development – NSW Resources | discuss potential impacts and seek guidance. | *Mining Act 1992* considerations and raises no issues regarding the Project at this stage. | |
| | Transport for NSW | A summary of the Traffic Impact Assessment was provided via the Major Projects Portal on 20 September 2024 to discuss potential impacts and seek guidance. | No response has been received to date. | No response received to date. |
| | UGL | Email communications were sent on 6 November 2023 to discuss the requirements for utilising the current alignment of Houghton Rd within TAHE land parcels as part of the proposed construction and operational traffic routes. Briefings and ongoing consultation were conducted on 6 December 2023, 19 December 2023, 12 April 2024, and 9 August 2024. | UGL informed us on 6 December 2023 about the application requirements for obtaining TAHE owner's consent. UGL indicated that TAHE owner's consent and Graincorp consent are required for the proposal to use Houghton Rd within TAHE land parcels as part of the proposed construction and operation traffic routes.<br><br>These requirements were modified following a meeting between UGL and ACEnergy on 19 December 2023.<br><br>On 12 April 2024, UGL recommended that ACEnergy seek Graincorp's consent for the use of the referenced section of Houghton Rd, where there is an exclusive | Consultation to continue throughout detailed design |

| Stakeholder category | Individual stakeholder subcategory | Consultation summary | Issues raised | Project Response |
|---|---|---|---|---|
| | | | easement with Graincorp as the sole beneficiary.<br>ACEnergy submitted an application for TAHE owner's consent on 9 August 2024. Ongoing consultation is currently taking place. | |
| | Telstra | Email communications were sent on 16 July 2024 to discuss potential impacts on their asset and seek guidance on requirements for the detailed design stage. Correspondence was received on 29 July 2024. | Email responses have been received for the construction requirements for works on or around Telstra assets regarding Houghton Road- Irrigation Way intersection upgrade. | Consultation to continue throughout detailed design |
| | Jemena | Email communications were sent on 16 July 2024 to discuss potential impacts on their asset and seek guidance on requirements for the detailed design stage. Correspondence was received on 1 August 2024. | Jemena indicates that intersection works at Houghton Road- Irrigation Way will require Jemena approval before any works. Email responses have been received for the construction requirements for works on or around Jemena assets. Reponses received during the EIS Phase. | Consultation to continue throughout detailed design |
| | Water (Leeton Shire Council) | Email communications were sent on 16 July 2024 to discuss potential impacts on their asset and seek guidance on requirements for the detailed design stage. Correspondence was received on 1 August 2024. | Email responses have been received for the construction requirements for works on or around Council water assets at Houghton Road-Irrigation Way intersection upgrade. Reponses received during the EIS Phase. | Consultation to continue throughout detailed design |

| Stakeholder category | Individual stakeholder subcategory | Consultation summary | Issues raised | Project Response |
|---|---|---|---|---|
| | | | | |
| | TPG | Email communications were sent on 16 July 2024 to discuss potential impacts on their asset and seek guidance on requirements for the detailed design stage. Correspondence was received on 16 July 2024. | Email responses have been received for the construction requirements for works on or around TPG assets at Houghton Road-Irrigation Way intersection upgrade. | Consultation to continue throughout detailed design |
| **Community** | Affected landowners surrounding the development (2km from the site) | A paper newsletter featuring project updates was distributed to 216 properties on April 12, 2024, with a scheduled delivery date of April 18, 2024 to all properties within 2km of the project site. The newsletter was subsequently emailed on April 24, 2024, to four residents, providing a project update and an offer for a briefing. | No emails, phone calls, or briefings were received or accepted by the affected landowners surrounding the project site. | ACEnergy will continue to reach out to affected landowners surrounding the development throughout the planning process. |
| | | Briefings, as well as ongoing email and phone communications, have been conducted with the neighbouring business GrainCorp since November 2023.<br><br>Murrumbidgee Irrigation was introduced to the Yanco BESS project in June 2024 through email. | A Murrumbidgee Irrigation engineer visited the site on 11th April 2024 to assess the project's proximity to their assets and expressed satisfaction with ACEnergy's design.<br><br>Since November 2023, ACEnergy has engaged in ongoing discussions with GrainCorp, seeking consent for the shared use of Houghton Road, a portion of which | |

| Stakeholder category | Individual stakeholder subcategory | Consultation summary | Issues raised | Project Response |
|---|---|---|---|---|
| | | | is owned by TAHE. Consent for shared use was granted in April 2024. Following the outcomes of a traffic assessment, it was determined that the road intersection between Houghton Road and Irrigation Way would require an upgrade. Since this intersection is located on TAHE land, additional consent from Grain Corp was necessary. Consent for the road upgrades and shared usage of Houghton Road was granted in August 2024. | |
| | | In-person information session at the Yanco Powerhouse Museum:<br>> An in-person drop-in session was held on 7 May 2024 in partnership with the Yanco Powerhouse Museum, located at 13 Binya St, Yanco NSW 2703. The session was attended by four community members who expressed a general interest in the project.<br>> Community flyers promoting the information session, were distributed to various locations in Leeton and Yanco on 26 April 2024 by the Yanco Powerhouse Museum, including two locations in Yanco | No surrounding landowners, businesses, and occupiers within a 2km radius from the project site attended the information session. | |

| Stakeholder category | Individual stakeholder subcategory | Consultation summary | Issues raised | Project Response |
|---|---|---|---|---|
| | | and at the Monthly Yanco Markets and Leeton Connect Facebook page on 29 April 2024. The flyer also included contact details and access to the website.<br>> An advertisement for the information session and survey, as well as a front-page article in The Irrigator was displayed in print and digitally on 26 April and 3 May 2024, respectively. | | |
| | | The tollfree-information line, project website and email have been operational since September 2023. | To date, we have not received any responses, emails, or calls from surrounding landowners, businesses, and occupiers. | |
| | | The community survey was open from 20 April 2024 until 30 July 2024. | One person responded to the survey. They outlined lifestyle preferences, cost of living, and the importance of local employment and opportunities in their area. They noted that supporting investment in renewable energy is essential, expressed neutrality towards a benefit-sharing program, and emphasised the importance of local employment opportunities. They did not express concern or any level of concern regarding the potential impacts associated with the | The Social Impact Assessment addresses key themes raised and mitigation strategies. Please refer to **Appendix Q**. These included utilising local resources such as labour, materials and accommodation where possible. |

| Stakeholder category | Individual stakeholder subcategory | Consultation summary | Issues raised | Project Response |
|---|---|---|---|---|
| | | | project. They showed interest in the project and expressed a desire to stay updated via the council. | ACEnergy will continue to reach out to affected landowners surrounding the development throughout the planning process. |
| | | To mitigate consultation fatigue, informal discussions were also conducted by bd infrastructure on behalf of Premise with two neighbouring landowners near the project site to understand land use conflicts for the LUCRA assessment. 3 emails and 2 direct calls were made on 26 April 2024 and 3 May 2024 to directly adjacent landholders to provide updates on the project and understand their current and future land uses, respectively. | To date, we have not received any responses via email.<br><br>Two neighbouring individuals were contacted by the project team via phone to provide information regarding LUCRA. The north and south neighbours are full-time agricultural farmers specialising in citrus and grapes. One neighbour expressed potential interest in expanding their operations and subdividing the land in the future, while the other neighbour has no immediate plans for changes to their current operations. Both neighbours have evaluated the potential impacts of the proposed construction and operation of a new battery on a neighbouring | The information gained has been considered in finalising the LUCRA. The site has been selected on land identified as having low potential productivity to mitigate impacts on agricultural production of the site and surrounding land. |

| Stakeholder category | Individual stakeholder subcategory | Consultation summary | Issues raised | Project Response |
|---|---|---|---|---|
| | | | property, and they have concluded that it will not significantly disrupt their current agricultural activities or future plans. Samsung has reached out to both neighbours regarding the possibility of hosting a battery on their land. | |
| | Community groups and peak bodies | Continued email correspondence has been maintained with community groups and peak bodies following the Scoping Phase. On 24 April 2024, a project update, newsletter, and briefing offer were sent out via email to:<br>21 community groups and peak bodies. | To date, we have not received any responses, emails, or calls. Community groups and peak bodies have not accepted the briefings.<br><br>Since October 2023, we have maintained ongoing communication with The Yanco Powerhouse Museum via phone and email. They are in favour of the project, have expressed no potential concerns regarding the project's impacts and have displayed a keen interest in the community benefit sharing program. The Yanco Powerhouse has proposed several projects for which they are seeking financial assistance, including improvements to their AV equipment to enhance the functionality of their theatre/meeting room, interactive displays for their museum, and the | ACEnergy has committed to granting $10,000 to the Yanco Powerhouse Museum from the Community Benefit Fund.<br>This money will be put towards upcoming projects nominated by the Museum Board. |

| Stakeholder category | Individual stakeholder subcategory | Consultation summary | Issues raised | Project Response |
|---|---|---|---|---|
| | | | construction of a new pavilion to accommodate additional exhibits. | |
| | | The community survey was open from 20 April 2024 until 30 July 2024. | No survey responses have been received by community groups and peak bodies. | |
| | | The toll free-information line, project website and email have been operational since September 2023. | No responses have been received by community groups and peak bodies. | ACEnergy will continue to reach out to Community groups and peak bodies throughout the planning process. |
| | | In-person drop-in session was held on 7 May 2024 at the Yanco Powerhouse Museum, located at 13 Binya St, Yanco NSW 2703. | No identified attendance from Community groups and peak bodies at the information's session. | |
| | Registered Aboriginal Parties (RAPs) and Leeton District LALC. | Registration of interest requests for RAPs were open on 15 January 2024 and coordinated by Premise. Please refer to the RAP report that is included in the Yanco BESS EIS. | No comments were received from the RAPs on the significance of the site through review of the assessment methodology, via initial correspondence or during site survey. | Refer to **Section 6.2** |
| | | Project newsletter and an offer of a briefing was emailed on 24 April 2024 to the Leeton District Aboriginal Land Council. | To date, we have not received any responses from the Leeton District LALC. | ACEnergy will continue to reach out to Leeton District LALC throughout the planning process. |
| | | The community survey was open from 20 April 2024 until 30 July 2024. | No survey responses have been received by Registered Aboriginal Parties (RAPs) and Leeton District LALC. | |

| Stakeholder category | Individual stakeholder subcategory | Consultation summary | Issues raised | Project Response |
|---|---|---|---|---|
| | | The toll free-information line, project website and email have been operational since September 2023. | To date, we have not received any responses, emails, or calls from the Leeton District LALC | |
| | Broader community (Leeton and Yanco townships) | The community survey was open from 20 April 2024 until 30 July 2024. | No survey responses have been received by the broader community (Leeton and Yanco townships). | ACEnergy will continue to reach out to the Broader community (Leeton and Yanco townships) throughout the planning process. |
| | | The toll free-information line, project website and email have been operational since September 2023. | To date, we have not received any responses or calls. One submission via email was made by a labour hire company looking for possible procurement pathway during construction. | |
| | | In-person drop-in session was held on 7 May 2024 at the Yanco Powerhouse Museum, located at 13 Binya St, Yanco NSW 2703. | Four people from Yanco, Leeton and one from Griffith attended the information session, who expressed a general interest in the project's location, construction and operation timeline. No concern around any potential impacts were mentioned. | |

Several factors were considered during the site selection, which was informed by experiences from previous development projects undertaken by the Applicant. As a result, many common issues for renewable projects and BESS projects were addressed prior to community consultation stages. There were a limited number of issues raised during consultation. As a result it was not considered necessary to make further amendments to the final design.

## 5.6 Future community engagement

ACEnergy is committed to building ongoing relationships with the local community and impacted neighbours. This commitment to appropriate and responsive engagement will continue through all stages of the project.

The next stage for project planning is the public display of this EIS. To engage with the community during this phase, ACE in collaboration with bd infrastructure, will:

- distribute a newsletter addressing key community insights
- host online information sessions for community members, organisations, and representatives, as well as in-person drop-in sessions for local residents, advertised in local media outlets
- conduct ongoing consultation with regulatory agencies to address issues raised during the EIS exhibition phase and in preparation for the Response to Submissions (RTS)
- monitor a dedicated community phone line and email for complaints and feedback
- maintain the project website and social media channels
- proactively engage with the media to raise awareness about the project within the community

bd infrastructure will ensure that the community is informed about the outcomes of the EIS exhibition, responses to submissions, and the next steps for the project.

By maintaining open lines of communication with stakeholders, we aim to address and mitigate any identified impacts from the project planning stage and maximise the benefits of the project for all involved.

# 6. ASSESSMENT OF IMPACTS

This section provides a detailed summary of the findings of the assessment of the potential impacts of the project. The scale and nature of the impacts of the project on each matter has informed the following table which ranks the matters based on the potential impacts generated by the project; from significant impacts ('high impact matters') through to those with minimal impacts ('low impact matters').

**Table 8 – Impact assessment level**

| High Impact Matters | Medium Impact Matters | Low Impact Matters |
|---|---|---|
| Noise | Biodiversity | Historic heritage |
| Transport, traffic and access | Aboriginal heritage | Water |
| Bushfire | Land | Contamination |
| Visual | Hazards | Waste |
| | Social | Economic |
| | | Cumulative |

## 6.1 Biodiversity

### 6.1.1 INTRODUCTION

A Biodiversity Development Assessment Report (BDAR; Habitat Environmental Services, 2024) has been provided in **Appendix F**. The assessment has been undertaken in accordance with the NSW Biodiversity Assessment Method (BAM) (DPIE 2020a) under the *NSW Biodiversity Conservation* Act 2016 (BC Act) and the *Biodiversity Conservation Regulation 2017* (BC Regulation). The BDAR has been prepared to quantify the impacts of the proposed development upon biodiversity values based upon the methods of the BAM. The BDAR includes (among other things):

- Stage 1 – A biodiversity assessment, including mapping plant community types (PCTs), assessment of potential threatened species, and assessment of potential candidate threatened species.
- Stage 2 – An impact assessment, including identification of potential impacts of the proposed development, avoidance and mitigation measures, and biodiversity office requirements.

A summary of the BDAR is provided in the following sections and includes a summary of the recommended mitigation measures.

### 6.1.2 EXISTING ENVIRONMENT

The site is located within the Riverina Interim Biogeographical Regionalisation of Australia (IBRA) bioregion, and within the Murrumbidgee IBRA Sub Region. The site is within an area predominantly comprising agricultural land uses, with a flat topography, and with sparse occurrences of native vegetation.

The Mitchell Landscape data maps the site as Murrumbidgee Scalded Plains, which comprises quaternary alluvial plains with extensive scalding. The soil types within this landscape typically comprise grey, brown and red cracking clays and red brown texture contract soils. This landscape often includes

low shrublands, and grasslands of saltbushes, burrs, cotton-bush, bush minuria, white-top grass, windmill grass, and hill wallaby grass.

The development site does not contain any natural watercourses. Watercourses within the surrounding area comprise man-made irrigation channels that typically traverse road reserves and adjoining lots.

Habitat notes that the percentage of native vegetation cover within the 1,500 m landscape buffer is 7.23% (96.82 Ha).

#### 6.1.2.1 Native vegetation assessment

Habitat ecologists completed several detailed vegetation surveys between November 2023 and January 2024. As the development footprint was not clearly determined at the time of surveys, the mapping and data exceeds the requirements of the BAM. The vegetation mapping was completed through rapid data points, walking transects and aerial photo interpretation.

The surveys confirmed that no PCTs were mapped within the development site, however there were two PCTs mapped nearby. The mapped PCTs were located along Hume Road and to the south of the Houghton Road and Irrigation Way intersection and were identified as the following:

- PCT 74 – Yellow Box – Red River Gum tall grassy riverine woodland of NSW South Western Slopes Bioregion and Riverina Bioregion.
- PCT 26 – Weeping Myall open woodland of the Riverina Bioregion and NSW South Western Slope Bioregion.

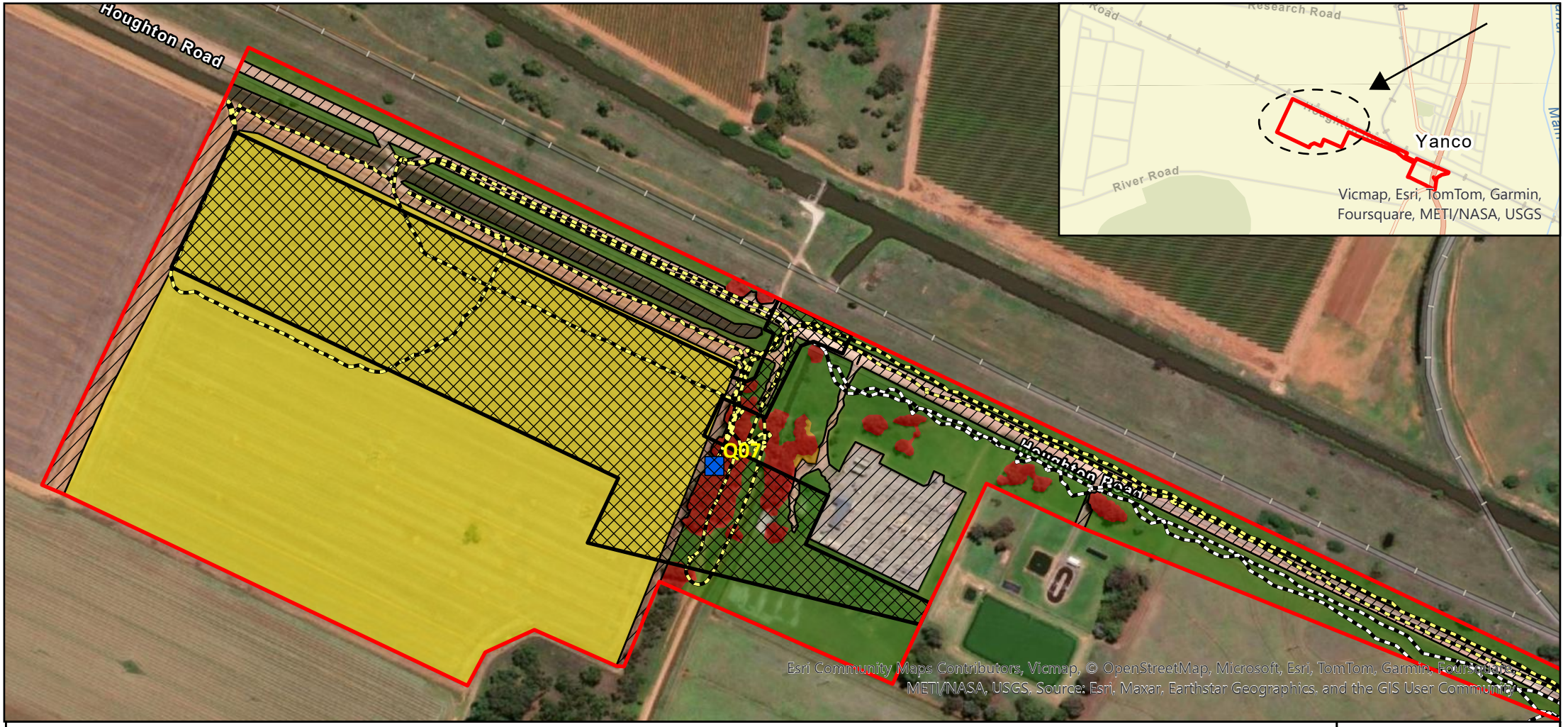
While there are no PCTs mapped within the development footprint, vegetation surveys concluded that vegetation within the footprint is commensurate with the two nearby PCTs.

Based on these PCTs, vegetation zones (VZ) were delineated into three zones as described below:

- VZ 01 – PCT 74 – Woodland Regrowth
- VZ 2 – PCT 74 – Planted Roadside Vegetation
- VZ 3 – PCT 26 – Woodland Regrowth

**Figure 7** and **Figure 8** below show the areas of the PCTs and non-native vegetation identified via the detailed vegetation surveys completed by Habitat.

The BDAR concludes that the vegetation identified as PCT 74 and PCT 26 are both considered to meet the criteria of a Critically Endangered Ecological Community (CEEC) and are considered Threatened Ecological Communities (TECs) under the BC Act. However, the PCTs are not considered TECs under the EPBC Act, as they do not meet the criteria for an Endangered Ecological Community (EEC) in accordance with the Commonwealth Conservation Advice.




# Figure 6 - Plant Community Types (BESS)

Habitat ENVIRONMENTAL SERVICES

- Study Area (Investigation Area)
- Subject Land (Development Footprint)
- BAM Plot
- Survey Track (09-10/11/23)
- Survey Track (07-08/01/24)

Vegetation Zone (VZ) - Plant Community Type (PCT) - Condition Class

- VZ 01 - PCT 74 - Woodland Regrowth
- VZ 02 - PCT 74 - Planted Roadside Vegetation
- VZ 03 - PCT 26 - Woodland Regrowth
- Non-native Vegetation (Agricultural Crops)
- Non-native Vegetation (Exotic Grassland)
- Cleared/ Developed

0 130 260 Meters


# Figure 7 - Plant Community Types (Intersection Upgrades)

Habitat ENVIRONMENTAL SERVICES

- Study Area (Investigation Area)
- Subject Land (Development Footprint)
- BAM Plot
- Survey Track (09-10/11/23)
- Survey Track (07-08/01/24)

Vegetation Zone (VZ) - Plant Community Type (PCT) - Condition Class

- VZ 01 - PCT 74 - Woodland Regrowth
- VZ 02 - PCT 74 - Planted Roadside Vegetation
- VZ 03 - PCT 26 - Woodland Regrowth
- Non-native Vegetation (Agricultural Crops)
- Non-native Vegetation (Exotic Grassland)
- Cleared/ Developed

0 100 200 Meters


# Figure 8 - Threatened Species Detected (Superb Parrot)

Habitat Environmental Services

Study Area (Investigation Area)
Subject Land (Development Footprint)
Superb Parrot Detection

Vegetation Zone (VZ) - Plant Community Type (PCT) - Condition Class
VZ 01 - PCT 74 - Woodland Regrowth
VZ 02 - PCT 74 - Planted Roadside Vegetation
VZ 03 - PCT 26 - Woodland Regrowth
Non-native Vegetation (Agricultural Crops)
Non-native Vegetation (Exotic Grassland)
Cleared/ Developed

0 100 200 Meters

#### 6.1.2.2 Threatened species assessment

To determine the presence of threatened species a search of BioNet Atlas was undertaken, as well as on site habitat assessments. Habitat ecologists completed several habitat assessments via random meandering between November 2023 and January 2024.

The BDAR summarises that there is low to nil likelihood of the occurrence of the any of the threatened flora species returned by the NSW BioNet Atlas and the BAM-C. This is due to the habitat degradation and vagrancy.

The BDAR also states that there may be highly mobile threatened fauna species that occasionally forage within the site or surrounding site as part of a broader habitat network. Despite this, the BDAR summarises that due to the highly degraded habitat, it is unlikely that the site is important to the long-term survival of any threatened fauna species.

Due to the lack of suitable habitat within the study area of the BDAR, no targeted surveys were conducted, however opportunistic surveys were undertaken during vegetation sampling and habitat assessments.

One threatened species was identified during on site surveys, which was determined to be a group of Superb Parrots. The Superb Parrots were observed foraging within the woodland patch to the south of the Houghton Road - Irrigation Way intersection as shown in **Figure 9**. A habitat assessment of the native vegetation areas to be impacted found that the VZs did not contain the habitat constraints for the species such as certain hollow bearing trees. As the development will only involve the removal of foraging habitat only, and no breeding habitat, the BDAR concludes that a species polygon is not required.

### 6.1.3 ASSESSMENT IMPACTS

The BAM considers a project could result in either or both direct or indirect impacts. Impacts can also be either prescribed or uncertain, or serious and irreversible impacts. Each of these impacts is discussed in the following sections.

#### 6.1.3.1 Direct impacts

The proposed development will result in direct impacts to native vegetation identified within and surrounding the development footprint. This includes areas required for ancillary aspects of the development, including the transmission line and required road upgrades. The direct impact on native vegetation will comprise clearing of 0.51 Ha within VZ 2 and 3. Of these zones, the development impacts will be limited to 0.5 Ha of VZ 2, and a negligible impact (0.1 Ha) on VZ 3. Additionally, there will be 8.76 Ha of non-native vegetation to be directly impacted by clearing activities.

These direct impacts on native vegetation will require biodiversity offsets, comprising 8 credits for PCT 74 and 1 credit for PCT 26.

The development will result in the removal of 0.51 Ha of low condition woodland habitat which is considered marginally suitable for foraging activities by Superb Parrots. This land has been subject to long term management and therefore has been cleared of key habitat such as hollow-bearing trees. Therefore, it is unlikely that the habitat to be removed will impact on the long-term survival of any threatened species.

The BDAR concludes that, as the study area is unlikely to be important habitat for EPBC Act listed species and that an EPBC referral to the Commonwealth Minister for the Environment is not recommended.

#### 6.1.3.2 Indirect impacts

There is potential for indirect impacts to occur as a result of the proposed development. Indirect impacts that may occur during the construction or operational phase include:

- Increased edge effects;
- Increased noise and vibration during construction impacting on nocturnal fauna species;
- Increased light spill during operation impacting nocturnal fauna species; and
- Changes to hydrology indirectly impacting downstream aquatic environments.

#### 6.1.3.3 Cumulative impacts

The BDAR highlights that while Habitat are aware of an ecological assessment completed for a nearby BESS at 649 Ronfeldt Road, Yanco, the assessment concluded no areas of native vegetation or threatened species habitat to be present.

As the proposed development site and the nearby BESS site each lack biodiversity values it is considered that cumulative impacts are likely to be negligible. No other relevant projects were identified within the locality with potential to result in cumulative impacts.

There is insufficient information available about the proposed Comet Park BESS to reliably form a conclusion about potential cumulative impacts between the two projects. It is noted that the scoping report identifies the Comet Park BESS land as being consistent with category 1 – exempt land. On this basis, the likelihood of predictable cumulative impacts appears to be low.

Similarly, a review of the BDAR prepared to support the Yanco Solar Farm shows the majority of the site as consisting of non-native vegetation with native vegetation predominantly associated with the transmission line connection route. The areas of clearing are associated with PCT 26/PCT 74, as for this project, but represent very small areas of clearing of this community (0.05 ha). Given the very small areas involved, cumulative significant impacts are not anticipated.

#### 6.1.3.4 Prescribed impacts

The prescribed impacts to be considered under the BAM have been addressed in **Section 7.5** of **Appendix F**. The key considerations and conclusions have been listed below:

- Due to the current lack of habitat connectivity within the vicinity of the site, the removal of the identified vegetation is likely to have negligible impact on fauna movement.
- The site is clear of natural aquatic landscape features, therefore impacts on water quality and aquatic habitats is unlikely. Notwithstanding, mitigation measures have been included to further mitigate indirect impacts.
- The development will result in an increase in vehicle movements to and from the site. Mitigation measures will be implemented, such as reduced speed limits, to reduce potential for fauna vehicle strikes.

#### 6.1.3.5 Serious and Irreversible Impacts

The removal of 0.5 hectares of PCT 74 will impact on one entity at risk of serious and irreversible impacts (SAIIs). Given the vegetation to be removed is part of a narrow fragmented patch comprising planted vegetation, the BDAR concludes that removal is unlikely to reduce the extent of the CEEC such that its long-term survival or recovery will be severely affected within the locality. Therefore, it is considered that the development will not result in SAIIs.

#### 6.1.3.6 Avoiding and minimising impacts

Findings from early surveys were provided in a Biodiversity Assessment Summary Report, which was considered during site selection and incorporated by the applicant into the project design and development to ensure impacts were avoided and minimised where possible.

The BDAR found that based on the extent of the development footprint proposed, that the impacts will be limited to the 0.51 hectares of native vegetation to be removed from the development site, allowing for 2.66 hectares of native vegetation to be retained. The BDAR concludes that approximately 84% of the native vegetation on site will be avoided.

### 6.1.4 MITIGATION MEASURES

The following mitigation measures have been recommended in the BDAR to further minimise direct and indirect impacts of the project:

- Avoid and minimise clearing impacts to native vegetation where possible.
- Clearly delineate the boundaries of the project footprint to prevent any unnecessary clearing beyond its extent. This includes the installation of appropriate fencing along the eastern extent of the Subject Land. Fencing should prohibit entry into the retained vegetation area and minimise indirect impacts during construction such as the movement of dust and rubbish into the forest and wetland.
- Ensure vehicle and equipment parking areas and stockpile areas are identified and positioned to avoid areas containing ecological value. Stockpiling must not occur within, or in proximity (5m) to, areas of native vegetation retained under the proposed development.
- Appropriate signage such as 'no go zone' or 'environmental protection area' should be installed surrounding the area of retained native vegetation and wetlands.
- Clearly identify and communicate the location of any 'no go zones' in site inductions.
- Tree protection measures will be implemented to protect retained trees surrounding the Subject Land. Tree protection measures should consider allowances for Tree Protection Zones in accordance with AS4970 (Standards Australia, 2009).
- Limit removal of trees to that required within the project footprint where possible.
- Pre-clearance surveys will be undertaken to determine if any inhabiting fauna, or habitat features (i.e. nests or hollows) are present 24 hours prior to clearing.
- A staged approach is required to the removal of vegetation (trees and shrubs) to minimise the potential for impacts to fauna by providing them with an opportunity to vacate hollows and relocate naturally.
- Avoid clearing vegetation during the breeding season of threatened fauna species, such as the Superb Parrot (spring/ early summer).

- Ensure a licensed wildlife carer and/or ecologist is present during vegetation clearing/habitat removal.
- Source controls such as sediment fences, mulching and jute matting will be utilized where appropriate, especially along the eastern boundary of the proposed development area that runs adjacent to a first-order stream.
- Site-based vehicles will carry spill kits.
- Erosion and sediment control will be required for the development in accordance with Managing Urban Stormwater: Soils and Construction (Landcom, 2004) prior to commencement of construction.
- Limit the use of pesticides in the project footprint where possible to avoid contamination of nearby watercourses/wetland areas.
- Speed limits within the Subject Land should be limited to 40 km/hr.
- This limit should be clearly signed at all entry points to site.
- The Subject Land should be separated from vegetated areas throughout the construction and operational phases of the development. This separation should be achieved through physical barriers including fencing and appropriate signage.
- The fungal pathogens Phytophora cinnamomi and Myrtle Rust (*Puccinia psidii*) are likely to occur within the LGA, however, it is unknown if they occur within the Subject Land. These pathogens can have devastating impacts on native plant communities and inhabiting fauna if not properly managed.
- Appropriate washdown facilities will be available to clean vehicles and equipment prior to arrival on-site and prior to departure.
- Ensure soil and seed material is not transferred
- Increased human activity (from workers and traffic levels) directly adjacent to sensitive habitat areas may cause disturbance to flora and fauna species in adjoining habitat.
- Impacts from construction and operational activities, such as disturbance to an animal's normal behaviour patterns due to noise, vibration, lighting or dust may cause areas of previously suitable habitat to become sub-optimal and may cause fauna species to vacate areas of previously suitable habitat.
- Measures to mitigate impacts on flora and fauna from noise, vibration, waste, light and air pollution such as:
    - Restriction of public access and associated impacts from domestic pets, waste dumping and damage to adjoining vegetation must be enforced pre, during and post construction.
    - Fence sensitive areas to delineate 'no go' zones.
    - Levels of lighting associated with the proposed development (during construction and operation) will be reduced to a minimal level and directed away from retained vegetation areas to reduce any adverse effects upon the essential behavioural patterns of light-sensitive fauna. Lighting design and utilization during construction and operational phases of the development should be based on principles detailed in Appendix A of the National Light Pollution Guidelines for Wildlife (DEE 2020). This includes consideration of adaptive controls, and measures to reduce light intensity and inappropriate light spill into retained vegetation and fauna habitat.
    - Lighting should also comply with Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting.

- Noise minimization practices in accordance with standard practises.
- Dust control measures such as covering loads where required; amending operations under excessive wind conditions including ceasing operations if required; use of water tankers as required, to control dust; rehabilitation through vegetation of surfaces to be left unsealed; and truck wheel washes or other dust removal measures.

## 6.2 Aboriginal heritage

### 6.2.1 INTRODUCTION

An Aboriginal Cultural Heritage Assessment Report (ACHAR) is provided in **Appendix G**. The objectives of the ACHAR were to:

> Assess the Aboriginal cultural heritage values of the site, including archaeological and community cultural values, and the significance of identified values.
> Identify Aboriginal cultural heritage values that may be impacted by the proposed work and implement measures to avoid significant impacts to these elements.
> Ensure appropriate Aboriginal community consultation in undertaken through the assessment process.
> Identify any recommended further investigations, mitigation and management measures required, should the proposed works proceed.

This assessment was undertaken in accordance with the following requirements and guidelines:

> SEARs SSD-67478479.
> Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW 2010) (Consultation Requirements).
> *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW* (Code of Practice; (Department of Environment, Climate Change & Water [DECCW] 2010).
> Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (Office of Environment & Heritage [OEH] 2011) (The ACHAR Guide).
> The Burra Charter (ICOMOS 2013).

### 6.2.2 EXISTING ENVIRONMENT

Aboriginal communities are based largely on varying language groups rather than the geographical boundaries of an area. It is likely that these boundaries in pre-European Aboriginal society were fluid and often intersected into different towns or regions. The Wiradjuri Aboriginal people/s are associated with the Leeton region, although other Aboriginal language groups were likely to have also existed within the region. Evidence suggests that Aboriginal people/s have lived in the Murray Darling region for at least 40,000 years with the Murray River in particular, was one of the most densely populated areas in pre-contact Australia, with Aboriginal occupation likely to have been the heaviest in the lower and central portions of the river.

Previous archaeological assessments have determined that Aboriginal occupation areas within the Leeton region were typically located within close proximity to a water course, particularly the Murrumbidgee River, and swamp lands such as the Tuckerbil Swamp. The local Aboriginal community within the Leeton region lived at a site known as 'Koonadan' prior to the arrival of Europeans to the

area. Koonadan is located approximately 16.5 km north of the development site and is characterised by sand hills, situated adjacent to the Tuckerbil Swamp.

A review of the Aboriginal Heritage Information Management System (AHIMS) online database identified one (1) previously recorded Aboriginal sites located with close proximity to the Yanco BESS site. The AHIMS database results also identified an additional 114 Aboriginal sites, including one (1) Aboriginal place (Koonadan), located within the wider context of the site. Aboriginal sites located within 50 m of the site are identified in **Figure 10**.

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**Legend**

- Development Footprint
- Cadastre
- Road
- Railway
- Water Body
- Watercourse
- Aboriginal Heritage Site

Premise

**Yanco Battery Energy Storage System**

**Figure 11**
**AHIMS Sites**

### 6.2.3 ASSESSMENT IMPACTS

A pedestrian archaeological survey of the development site was undertaken to confirm the presence of the previously recorded Aboriginal heritage site and the presence of any additional, previously unrecorded Aboriginal heritage sites. This survey was undertaken by two (2) Archaeologists from Premise who were accompanied by a representative from the Leeton and District Local Aboriginal Land Council (LALC) and a representative Registered Aboriginal Party (RAP).

The survey identified that the land was actively used for agricultural activities and had recently been cropped. Land along the boundary of the survey area contained eroded dirt tracks with high visibility. Materials identified across these areas consisted primarily of quartz, quartzite as well as some silcrete. No newly recorded Aboriginal sites or objects were identified during the archaeological survey of the area. Moreover, no specific cultural knowledge was provided on the development site, however, it was noted that Aboriginal people once camped along the irrigation areas north west of the development site.

Land within the TransGrid site was also surveyed as well as land along Houghton Road and Irrigation Highway where road works are proposed. No Aboriginal sites were identified in these areas. Overall, the development impact area was characterised as being highly disturbed with a low archaeological potential.

The previously recorded Aboriginal site, located to the north of the development site could not be relocated during the inspection. Due to the proximity of this Aboriginal site from the development, there is potential for impacts to occur. Considerations for minimising impacts to this known Aboriginal heritage site, located immediately north of the proposed BESS site has occurred through design refinements. Intersection upgrades for access into the BESS have been designed to avoid this site along.

### 6.2.4 MITIGATION MEASURES

The following measures should be implemented to minimise impacts to Aboriginal heritage:

- A proposed 10m buffer is to be implemented around the previously identified AHIMS #49-5-0211 site so as to avoid any impacts to this item.
- Prior to works commencing a Chance Finds Protocol (CFP) is to be developed for the site. The CFP must include the procedure and management of unexpected finds relevant to Aboriginal cultural heritage.
- The CFP must include procedures for:
  - notifying Heritage NSW, a heritage consultant and RAPs or the Local Aboriginal Land Council (LALC) where unexpected finds are identified.
  - If suspected human remains are located during any stage of the proposed works, work must stop immediately, and the NSW Police notified. An Archaeologist or Physical Anthropologist should be contacted in the first instance where there is uncertainty whether the remains are human.
- All impacts must remain within the assessed study area or further archaeological investigation may be required.

## 6.3 Historic heritage

### 6.3.1 INTRODUCTION

The project SEARs issued by DPHI on 28 February 2024 (refer to **Appendix A**) require an assessment of the impact on historic heritage with regard to the NSW Heritage Manual.

The below assessment has been undertaken in accordance with NSW Department of Planning and Environment (NSW DPE) *Assessing heritage significance 2023* guidelines for assessing places and objects against the Heritage Council of NSW criteria. Information from these guidelines has been drawn from documents written as part of the NSW Heritage Manual. These guidelines replace the previous documents within the NSW Heritage Manual.

### 6.3.2 EXISTING ENVIRONMENT

The broader areas of Leeton and Yanco have been utilised by European settlers since the mid to late 1800s for large pastoral properties. A review of the NSW Government Historical Imagery Viewer (NSW Government, 2022) has confirmed the development site has been used for agricultural production since at least 1967 (refer **Figure 11**). Moreover, extensive agricultural land use across the Leeton LGA has taken place since at least approximately 1912 with the implementation of the Murrumbidgee Irrigation Area scheme. This included the construction of irrigation channels across the region and the utilisation of these for irrigation farming. The town of Leeton was purpose built and designed for the Murrumbidgee Irrigation Area project in 1914.

**Figure 11 – Historic Aerial Imagery (1967)**


A review of the State Heritage Inventory (SHI), Schedule 5 of the LLEP and of the DCCEEW Australian Heritage Database has confirmed that the development site is not a state or local heritage listed item.

However, the following local heritage listed sites under the LLEP are recorded as being located within 2 km of the development site:

- Yanco Powerhouse Museum (#I94) located approximately 1.1 km northeast.
- Hotel Yanco (#I109) located approximately 1.4 km northeast.
- Yanco School of Arts (former) (#I100) located approximately 1.4 km northeast.
- Water Trough (#I108) located approximately 1.4 km northeast.
- Yanco Post Office (former) (#I99) located approximately 1.4 km northeast.
- Yanco Water Tower (#I95) located approximately 1.5 km northeast.
- St Mary's Anglican Church (former) (#I96) located approximately 1.5 km northeast.
- St Patricks Catholic Church (#I110) located approximately 1.6 km northeast.
- Catholic Convent (#I97) located approximately 1.6 km northeast.
- Yanco Agricultural Institute (includes various listings including #I103, #I104, #I105, #I106 and #I107) located approximately 2km east.

The Yanco Heritage Conservation Area is also listed under the LLEP and is located approximately 1.5 km northeast of the development site, encompassing the southern portion of the town of Yanco, along Main Avenue and Short Street. Additionally, the Yanco Agricultural High School (#02021) located approximately 3 km south of the development site, is listed as a state heritage item under the SHR.

The location of nearby heritage items are shown in **Figure 12**.




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**Legend**

- Development Footprint
- Cadastre
- Road
- Railway
- Water Body
- Watercourse
- State Heritage Register Curtilage

**EPI Heritage**

- Conservation Area - General
- Item - General

Premise

**Yanco Battery Energy Storage System**

**Figure 12**
**Heritage**

### 6.3.3 ASSESSMENT IMPACTS

Heritage significance is graded using the seven (7) criteria listed under the NSW DPE *Assessing heritage significance 2023* guidelines:

- Historical significance;
- Historical association;
- Aesthetic/creative/technical achievement;
- Social, cultural and spiritual;
- Research potential;
- Rare; and
- Representative.

The development site is not a heritage listed item nor does it fall within any of the above listed criterion. Overall, the proposed development will not result in physical impacts to a heritage item.

Notwithstanding, there is potential for the development to result in visual impacts to nearby heritage sites and the heritage conservation area. However, due to the proximity of nearby heritage items (the closest situated approximately 1.1 km northeast) adverse visual impacts are not anticipated to occur as a result of the development. The addition of vegetative screening around the BESS will further mitigate potential impacts to the aesthetic and visual significance of nearby sites.

### 6.3.4 MITIGATION MEASURES

Notwithstanding the above, there is potential for unknown archaeological remains to be discovered and encountered during the construction of the BESS. While the potential to discover items of heritage significance is considered low, a precautionary principle applies. Appropriate mitigation measures would be implemented during the construction phase of the project to minimise the potential for adverse impacts in the form of an unexpected finds protocol.

## 6.4 Land

### 6.4.1 INTRODUCTION

A Land Use Conflict Risk Assessment (LUCRA) is provided in **Appendix H** and includes an assessment of the suitability of the development, including:

- Assessment of potential impacts of the development on existing land uses;
- Compatibility during construction, operation and decommissioning of the BESS; and
- Consideration of the zoning provisions applying to the land.

A summary of the LUCRA is provided in the following sections, together with consideration of other relevant matters.

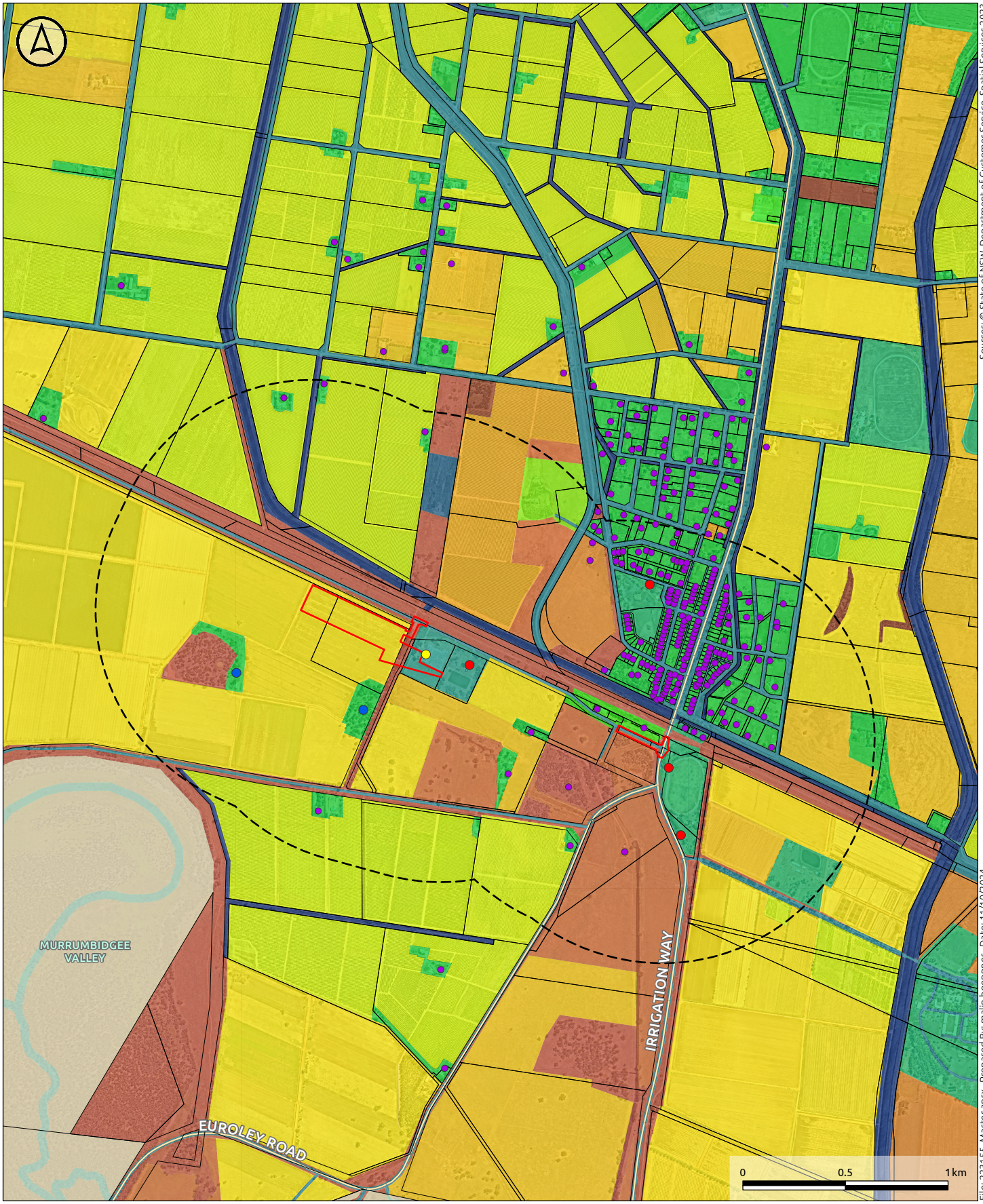
### 6.4.2 EXISTING ENVIRONMENT

The development site is located within the RU1 Primary production zone and is currently used for agricultural production, including irrigated cropping (refer **Figure 13**). The existing substation located to the east of the development site is identified as utilities, while other notable land uses in the locality include residential and farm infrastructure, irrigated perennial horticulture, channel/aqueduct, utilities

and grazing irrigated modified pastures land uses. The development site is generally cleared of vegetation due to historic cropping activities.

The development footprint is clear of existing infrastructure or buildings, however elsewhere on Lot 516 DP 7517415 there are two (2) existing dwellings, including one (1) situated to the south of the development site and the other situated to southwest of the development site.

The development site would be accessed directly from Hume Road via a new access arrangement provided along the eastern boundary of Lot 521 DP 7517415. The development footprint includes the intersections of Hume Road and Houghton Road, and Houghton Road and Irrigation Way, both of which will be upgraded to meet Austroads design requirements.



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**Legend**

- Development Footprint
- Locality
- Cadastre
- Road

**Receivers**

- Associated Non-Residential
- Associated Residential
- Non-Associated Non-Residential
- Non-Associated Residential

**Landuse 2017**

- 1.1.0 Nature conservation
- 1.2.0 Managed resource protection
- 2.1.0 Grazing native vegetation
- 3.2.0 Grazing modified pastures
- 3.3.0 Cropping
- 3.4.0 Perennial horticulture
- 4.1.0 Irrigated plantation forests
- 4.2.0 Grazing irrigated modified pastures
- 4.3.0 Irrigated cropping
- 4.4.0 Irrigated perennial horticulture
- 5.2.0 Intensive animal production
- 5.3.0 Manufacturing and industrial
- 5.4.0 Residential and farm infrastructure
- 5.5.0 Services
- 5.6.0 Utilities
- 5.7.0 Transport and communication
- 5.9.0 Waste treatment and disposal
- 6.3.0 River
- 6.4.0 Channel/ aqueduct

Premise

**ACENERGY PTY LTD**

**Yanco Battery Energy Storage System**

**Figure 13**

**Land Use and Receptors**

### 6.4.3 ASSESSMENT IMPACTS

#### 6.4.3.1 Agricultural utility

Agriculture is the dominant land use in the locality, with irrigated cropping occupying the entirety of the development site, along with majority of the land to the northwest, west and south.

The development site and locality is not mapped as containing any land identified via Strategic Regional Land Use Policy including Strategic Agricultural Land - Biophysical (otherwise referred to as 'BSAL'). The development site is mapped via the draft state significant agricultural land map, however this mapping has not been adopted at the time of writing.

The Agricultural Land Utility Assessment (ALUA) prepared for the site by Cadeema (2024) provided in **Appendix I**, indicates that there will not be a significant loss in agricultural production with the transition of land from existing 'winter' cropping to a BESS site. The site has low to moderate agricultural productivity potential. Irrigation of the site is limited by the expense and availability of water, which requires high yielding, high quality agricultural production to be viable. As the proposed BESS will comprise approximately 8 ha of the 357 ha property, which is generally a lower productive area, the AULA finds that the removal of the 8 ha would not adversely impact the agricultural productively. Therefore it is concluded that there is limited agricultural suitability and productivity potential of the site, and the temporary removal of agriculture from the site is not expected to have adverse impacts on the site, locality or wider region.

#### 6.4.3.2 Flood prone land

The development site is not mapped as flood prone land and includes flood free access into the development site. There are two watercourses in proximity to the development site which are located to the north. Potential flood impacts resulting from these watercourses along with pre and post development flood scenarios have been addressed in **Section 6.8** and **Appendix M**.

#### 6.4.3.3 Crown lands

The development footprint is not contained within any Crown land parcels.

The intersection upgrade to Houghton Road and Irrigation Way adjoins two (2) Crown Land reserves, R68769 and R68244. No change to land within the Crown land reserve is proposed and therefore there is no requirement to attain a Crown land reserve use permit for the construction of the development.

Notwithstanding, ongoing consultation with Crown Lands will be undertaken during the detailed design and construction phase of the project to manage potential impacts.

#### 6.4.3.4 Soil

The development site is located within the Riverina Bioregion. The bioregion consists mostly of sandy soils, saline soils and heavy grey and brown clays. Australian Soil Classification (ASC) Soil Type map identifies that the BESS and proposed access roads are located on Chromosols (CH) soils (refer **Figure 14**). This landscape consists primarily of red-brown earths. These red-brown and grey clays support grassland communities in the bioregion which are considered naturally significant.

Based on ALUA, it is determined that the soils within the site are moderately to poorly drained. The assessment finds that soil impacts may occur through traffic and infrastructure induced compaction with soil organic matter reduction, deterioration and/or erosion causing sediment mobilisation as part

of the development. It is recommended that vegetation cover is maintained and maximised to protect the surface soil structure.

#### 6.4.3.5 Contamination

The preparation of the LUCRA included a check of the NSW EPA Contaminated Land Record and List of NSW contaminated sites notified to the EPA on the 8th of July 2024. The review of available records confirms that there are no known contaminated sites at or near the site. A Preliminary Site Investigation completed by Cadeema (2024) (**Appendix N**) found no evidence of the carrying out of potential contaminating activities and therefore it is concluded that the development site unlikely to be contaminated. This is further discussed in **Section 6.9**.

#### 6.4.3.6 Cumulative impacts

Notable energy projects within the surrounding area include:

- 5 MW BESS located at 649 Ronfeldt Road approximately 1.6 km west of the development site;
- The approved Yanco Solar Farm is located approximately 1.8 km north of the development site; and
- The Comet Park BESS located 200m to the south of the development site. This project is seeking SEARs and will comprise a 150 MW BESS.

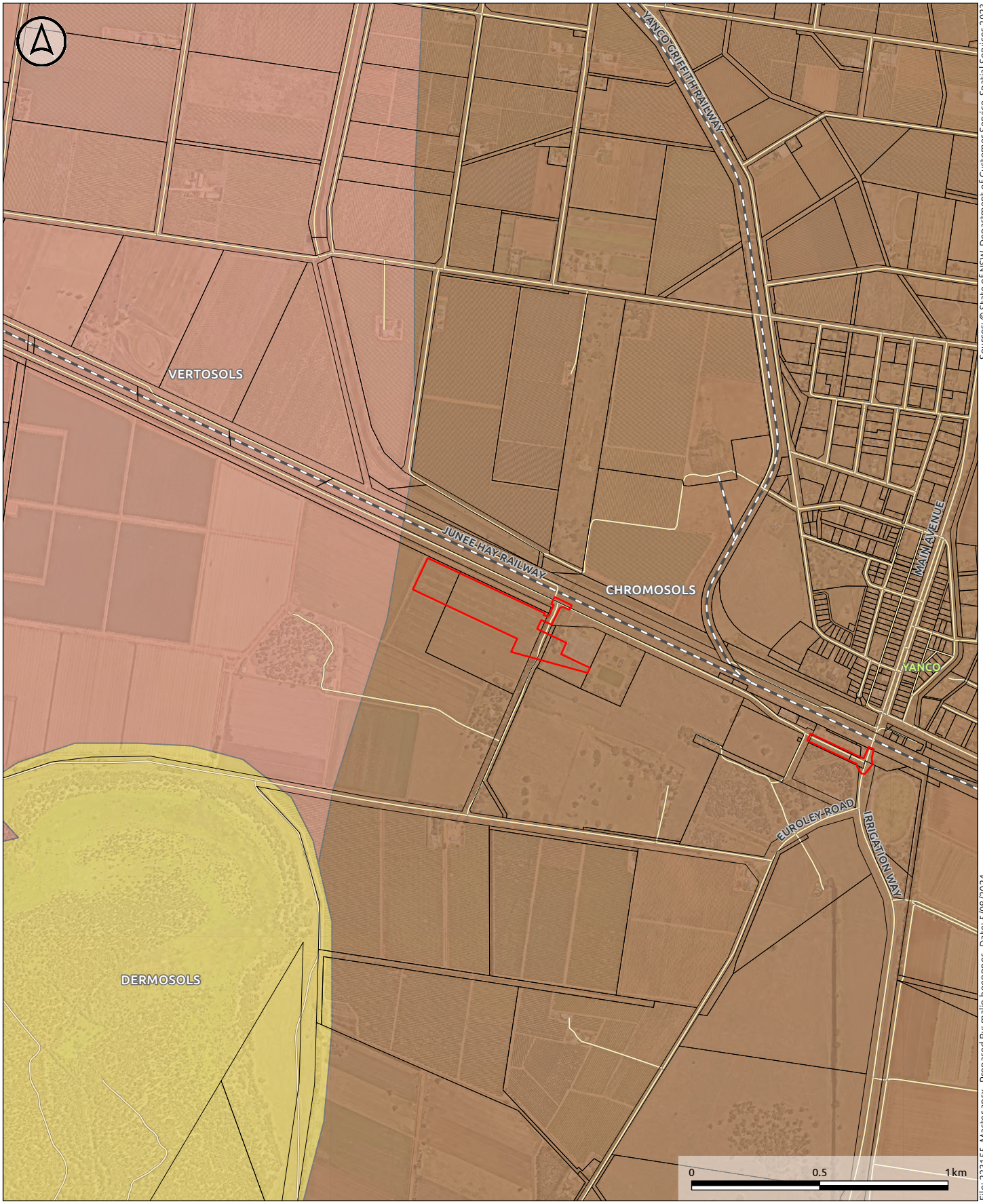
Consultation with these project developers, including the Comet Park BESS if it is approved, would occur during the detailed design construction and operational phases of the Yanco BESS project, minimising the potential for significant cumulative impacts and potential land use conflicts.

The project is not expected to prevent the establishment of other future land uses.

#### 6.4.3.7 LUCRA Conclusions

The LUCRA has identified and assessed potential land use conflicts and evaluated the associated risk, which concluded that the over risk ranges from low to moderate.

While a total of 47 potential land use conflicts were identified, the revised risk ranking identified 38 low risk and 9 moderate risk conflicts. The effective implementation of management strategies is likely to minimise the risk of potential land use conflicts.



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**Legend**

- Development Footprint
- Cadastre
- Road
- Railway

**Australian Soil Classification**

- Chromosols
- Dermosols
- Vertosols

Premise

**Yanco Battery Energy Storage System**

**Figure 14**
**Australian Soil Classification**

### 6.4.4 MITIGATION MEASURES

Mitigation measures are reflective of those recommended throughout the range of specialist reporting prepared to support the proposal and are summarised in **Appendix E**.

- Compliance with mitigation measures specified in the EIS is anticipated to reduce the risk of land use conflicts.
- The reversibility of the project would allow the site to be returned to its existing land use, therefore minimising potential for long term conflict and impacts to future agricultural activities.
- Compliance with the following crime management measures is anticipated to reduce the risk of conflict related to the increased risk of vandalism and theft for surrounding residents:
  - Maintenance of the existing key access point to ensure the delineation between private and public is clear;
  - Existing boundary fencing is to be maintained and/or installed to ensure site access is controlled;
  - Appropriate signage should be installed;
  - Landscaping is to be maintained to remove opportunities for concealment.
- Ongoing consultation with stakeholders will identify and address concerns if they arise.
- Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved).

## 6.5 Visual

### 6.5.1 INTRODUCTION

A Visual Impact Assessment (VIA; IRIS Visual Planning + Design, 2024) is provided at **Appendix J**. The assessment has been prepared in accordance with the guidance provided in the following:

- *Large-Scale Solar Energy Guideline* (NSW DPE 2022), including the *Technical Supplement – Landscape and Visual Impact Assessment*;
- *Guidance note EIA-N04 Guidelines for Landscape Character and Visual Impact Assessment* (TfNSW 2020); and
- *The Guidance Note for Landscape and Visual Assessment* (GNLVA), Australian Institute of Landscape Architects Queensland (2018).

The assessment has been prepared to assess the visual impact of the Yanco BESS project. The VIA includes (among other things):

- A summary of the proposal, site and planning context;
- An assessment of potential visual impacts; and
- A summary of the avoidance, mitigation and offsetting of impacts.

A summary of the VIA is provided in the following sections, as well as the recommended mitigation measures.

### 6.5.2 EXISTING ENVIRONMENT

The development site is located in a flat rural landscape and is surrounded by land historically cleared and used as cultivated farmland. The landscape comprises several irrigation channels that feature raised

embankments which provide some screening from the surrounding road network. There are also patches of road side vegetation that also provides screening.

The site is located adjacent to the Yanco Substation, which features major existing transmission lines, and is in close proximity to the Junee Hay railway.

The area surrounding the site features scattered rural homesteads to the north, west and south of the site. These dwellings are generally clustered with other large agricultural buildings as well as established trees and vegetation.

The two closest dwellings (R3 and R724) are identified as associated dwellings. The closest non-associated dwellings are identified as R4, R5 and R6 and are located at least 800 metres from the development site.

The VIA identifies that the visual catchment of the development is limited by the surrounding landform and vegetation. Generally, the visual catchment shows potential for views extending to the north and north east to properties near Research Road, and to the south and east across the fields.

#### 6.5.2.1 Dwelling entitlements

Premise have undertaken a review of available data to identify any nearby properties with capacity to lawfully accommodate a dwelling. This process included a review of the LSC DA tracker for dwelling and subdivision approves, as well as a review of commercially available spatial data to identify land parcels within the visual catchment of the project that achieve the relevant minimum lost size as per Clause 4.2B of the LLEP.

A review of the DA tracker identified five (5) approved development applications that provided for a dwelling or a subdivision that may result in a dwelling. Due to the limits of the DA tracker, further information was requested from Council to determine if these sites were within two kilometres. Information received from Council determined that for the applications identified that either the relevant consent did not provide for further dwelling development (i.e. conditions prohibiting dwellings) or were outside the two kilometre buffer. As a result, no dwelling entitlements were identified through the DA tracker.

Additionally, the review of spatial data concluded that within the visual catchment and within the 2 kilometre buffer there were no lots that met the minimum lot size of 150 hectares. Therefore no additional lots were identified with a dwelling entitlement though spatial data.

### 6.5.3 ASSESSMENT IMPACTS

#### 6.5.3.1 Public domain visual impacts

Views have been selected to represent the locations where the proposed development would be seen from the public domain. These viewing locations have prioritised locations where there would be a larger number of potential viewers, such as the highway and surrounding streets. Representative views considered in the VIA include:

- Viewpoint 1: Views from Houghton Road
- Viewpoint 2: Views from Hume Road
- Viewpoint 3: Views from River Road

- Viewpoint 4: Views from Binya Street
- Viewpoint 5: Views from Research Road.

The assessment of these viewpoints found that with no mitigation measures the visual impact resulting from the proposed development ranged from negligible impacts to very low impacts. However, where the assessment considered planting of screening vegetation the visual impacts were reduced to negligible impacts.

Further, the VIA confirmed that there were no significant or scenic vistas within or near the visual catchment of the project.

#### 6.5.3.2 Views during construction

During the construction period, the works would involve construction vehicles including cranes and other equipment rising above the height of the development. While the impacts on views during this time may be slightly more prominent, these visual impacts of the construction are anticipated to be short-lived and therefore minimal overall impact.

#### 6.5.3.3 Views at night

The lighting of the surrounding landscape is generally quite low, with scattered lighting from surrounding rural dwellings, and the glow of Yanco to the north. The development involves relatively low levels of light in the context of site. The development is considered to have a low district brightness and moderate visual sensitivity at night.

There is not expected to be any construction at night. Therefore, there would negligible visual impact at night during construction.

During operation there would be some minor security lighting provided at the BESS facility, with lighting mounted outside the maintenance and operation building. Notwithstanding, lighting would not noticeably alter prevailing light levels in the area and there would be a negligible magnitude of change and visual impact at night.

#### 6.5.3.4 Views from surrounding dwellings

Dwellings located within around one kilometre of the site have been considered for potential view impacts. Dwellings outside of this buffer are unlikely to be experience prominent views of the site and unlikely to be impacted, with the exception of R9 and R723 which have been included for consideration.

Of the nine dwellings identified for further consideration, only seven were considered to have a potential view to the proposal and required detailed assessment. A detailed assessment found that only the two assessed dwellings R3 and R724 would experience a low visual impact if no mitigation were imposed. The remaining dwellings experienced negligible impacts with no mitigation imposed. However, with consideration of the proposed vegetation screening, it was concluded that the visual impact would be negligible for all seven dwellings that were considered.

### 6.5.4 MITIGATION MEASURES

The development has been located adjoining existing electricity infrastructure, away from dwellings, and has been positioned to avoid landscape features such as irrigation channels and mature eucalyptus trees. Additionally, landscaping screening has been incorporated into the development, along the

perimeter fencing. These incorporated measures assist in avoiding and minimising potential visual impacts.

In addition, the VIA recommends the following mitigation measures:

- Lighting during construction and operation would be designed and operated in accordance with AS4282-2019 Control of the obtrusive effects of outdoor lighting.
- Noise walls and buildings to be painted a colour that blends with the local landscape (such as Colorbond Cottage Green, Woodland grey, Pale Eucalypt or similar) to reduce their prominence of these structures in views to the proposal.

## 6.6 Noise

### 6.6.1 INTRODUCTION

A Noise Impact Assessment (NIA, Assured Environmental 2024) is provided in **Appendix K**. It includes assessment of:

- Construction noise;
- Operational noise;
- Road traffic noise; and
- Vibration impacts.

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

### 6.6.2 EXISTING ENVIRONMENT

The project site is located an area predominantly comprising agricultural lands and is located adjacent to the Transgrid Yanco Substation. The topography of the landscape is flat, with limited vegetation and structures within the vicinity.

The NIA identifies that there are seven residential receivers within one kilometre of the development site.

### 6.6.3 ASSESSMENT IMPACTS

#### 6.6.3.1 Construction noise

The NIA includes an assessment of construction noise impacts to the nearby sensitive receivers. The construction phase of the project is anticipated to take approximately 8 months, with varying activities undertaken throughout this phase. It is also noted that there may be overlap with the construction of the nearby Yanco Solar Farm.

The NIA is based on the worst case scenario noise levels and concludes that during the loudest stages of the BESS construction that the nearby receivers would exceed the Noise Affected criteria of 50 dB(A) but would not exceed the Highly Noise Affected criteria of 75 dB(A). Mitigation measures are recommended in the NIA to reduce the noise impacts for nearby receivers. Additionally, during any work that generates high noise levels that have impulsive, intermittent, low frequency or tonal characteristics, surrounding sensitive receivers will be consulted with regularly.

Additionally, the NIA has assessed the noise impacts of the roadworks for the road upgrade. The road works are expected to take place over a relatively short two week timeframe, with the noisiest works to be completed for only short periods of time. The assessment identified five receivers located closest to the road upgrades with potential to be impacted by noise impacts. Four of these receivers were identified as 'highly noise affected', and one was shown to be just 'noise effected' to be used as a benchmark for all other further receptors classified as 'noise effected' by distance. As a result, all feasible and reasonable mitigation is recommended to be applied. In addition to receivers identified in the table, it is assumed that all receptors not identified in table that are located within 180 metres to 3000 metres to the site would be considered to fall into the noise affected criteria. The NIA recommends that receivers within three kilometres of the road works be notified, and that construction contractor consider potential controls to minimise potential impacts, including:

- negotiated agreements and/or respite periods to restrict work activity.
- identification of times when the community is less sensitive to noise, including options for longer periods of construction in exchange for restrictions on construction times.
- Alternative accommodation during construction

A construction noise management plan is proposed with appropriate mitigation measures to address the construction noise of the development and these short term road noise impacts.

The NIA states that the construction of the Yanco Solar Farm is expected to commence construction July 2025 and will take approximately 9 months to complete. As Yanco BESS is expected to commence construction in November 2025, it is anticipated that there will be a 5 month overlap between the projects. Cumulative impacts have been considered for four receivers that are identified in assessment for both projects. Based on the worst case scenario the highest noise levels from both projects are not considered to exceed the Highly Affected Noise criteria of 75 dB(A). Therefore additional noise controls in relation to cumulative impacts are not considered necessary.

#### 6.6.3.2 Road traffic noise

The NIA includes an assessment of the road traffic noise impacts during the construction phase of the project. The assessment considers an estimated peak of 33 light vehicles and 16 heavy vehicles, in addition to OSOM vehicles and associated escort vehicles. As it is unlikely that the OSOM vehicles will arrive at the same time, the assessment considers two OSOM vehicles and eight light escort vehicles per peak hour. The assessment considers the potential noise emissions that may occur on the proposed route of entry to the site along Houghton Road. Given the existing low traffic volumes of the roads surrounding the site, and the low traffic volumes expected to be generated during hours of construction the assessment concludes that there would be negligible impacts. The NIA concludes that the predicted noise levels are well below the assessment criteria of 50 to 60 dB(A) for the proposed entry route.

During the operational phase of the BESS, road traffic impacts are expected to be negligible due to minimal staffing required on site.

#### 6.6.3.3 Operational noise

The NIA includes an assessment of operational noise impacts to existing receptors based on baseline noise levels equivalent to the minimum background noise levels, noise sources and source locations.

An assessment of the operational noise levels without mitigation measures in place concluded that compliance with the intrusive noise criteria would not be achieved, with exceedances identified at receivers R724 and R03.

However, periods when assessed against worst-case meteorological conditions with consideration of mitigation measures (including acoustic barriers) it was concluded that the predicted noise levels at each of the receivers would achieve compliance with the NPfI requirements for all receivers for day, evening and night periods.

The NIA includes recommendations of mitigation measures discussed in **Section 6.6.4**.

#### 6.6.3.4 Vibration

The NIA includes an assessment of potential vibration impacts during the construction phase. The assessment considers the amenity criteria associated with the three categories of vibration, comprising continuous vibration, impulsive vibration, and intermittent vibration.

The NIA states that due to the distance of the development site from nearby receivers, the proposed construction works will achieve compliance with the relevant vibration criteria. The NIA concludes that due to this compliance, the potential vibration impacts are considered unlikely.

During operation of the BESS, it is anticipated that the vibration impacts will be negligible due to the nature of the equipment and minimal staff operations.

### 6.6.4 MITIGATION MEASURES

To mitigate the potential for operational noise impacts of the BESS, the NIA recommends the following:

- Noise barriers are proposed as shown in Figure 4 of the NIA. 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.
- The southern noise barrier is approximately 388 m length and 4.5 m in height, the barrier also has been modelled to include 150 mm gap between the ground and bottom of the barrier. (Barrier construction to allow for flood design).
- Southern acoustic barrier are to be constructed such that there is a 10 m spacing between the acoustic barriers and bass equipment to allow for fire safety.
- The barriers around the large scale 175 MVA transformers are 4 m in height. The barrier may be open on the northern face
- Placement of the MVPS equipment as discussed with ACEnergy; MVPS front face of all units to be facing north to help with directionality or loudest side away from closest sensitive receivers
- Similarly, placement of BESS equipment as discussed with ACEnergy, BESS front side (loudest) facing towards the north for all BESS units to help with the noise directionality away from closest sensitive receivers to the south

# 6.7 Transport, traffic and access

## 6.7.1 INTRODUCTION

A Traffic Impact Assessment (TIA; Trafficworks, 2024) is provided in **Appendix L**. The assessment has been prepared to assess the construction, operational and decommissioning traffic impacts, and the access arrangements for the BESS.

The assessment responds to the SEARs and details how road impacts of the project traffic, particularly from standard heavy vehicle use and over-dimensional vehicles requiring escort, will be avoided or managed using road-use management strategies. The assessment has been prepared in consultation with Transport for NSW and Leeton Shire Council.

The TIA includes (among other things):

- Existing traffic environment;
- A traffic assessment considering traffic generation and distribution;
- Cumulative traffic impacts;
- Route assessment; and
- Intersection assessment.

A summary of the TIA is provided in the following sections, as well as the recommended mitigation measures.

## 6.7.2 EXISTING ENVIRONMENT

Access to the site is available via an existing access point to Hume Road, connecting to Houghton Road at the northeast corner. For the purposes of the development, a new access will be required to be constructed.

The road network includes Hume Road, Houghton Road, and Irrigation Way (Euroley Road).

Hume Road is a local road which provides access between Houghton Road to the north east and River Road to the south west. It has an unsealed carriageway width of 3 metres within a road reservation width of 40 metres, and accommodates single lane, two-way vehicle movement.

Houghton Road is a local road which provides access between Whitton to the north west and Irrigation Way to the south east. The eastern end of Houghton Road runs through land owned by Transport Asset Holdings (TAHE) and is managed on their behalf by UGL. The road alignment passes through these private landholdings and is the subject of a right of access in favour of Graincorp land to the north. Where the road adjoins Hume Road, the road has an unsealed carriageway width of 9.5 m. 600 metres west of Irrigation Way the road changes to a sealed carriageway width of 5.5 m. The carriageway is within a road reservation width of 60 metres and accommodates two-lane, two way vehicle movement.

Irrigation Way is a classified state arterial road managed by TfNSW providing access to Narrandera to the south east and Griffith to the north west. It has a sealed carriageway of 7.6 m within a road reservation width of 60 metres and accommodates two way vehicle movement.

Trafficworks commissioned a traffic survey to determine the existing traffic volumes at the Irrigation Way and Houghton Road intersection. The survey determined that the peak hour periods for the

intersection were 7 am to 8 am, and 4 pm to 5 pm. Survey recorded a total of 244 vehicle movements in the morning peak period, and 387 vehicle movements in the evening peak period.

Hume Road has no available traffic volume data, however based on the knowledge that the road services two dwellings and farmland, it is estimated that there would be no more than 20 vehicle movements per day. This would equate to two vehicles per peak hour.

A review of crash history in the vicinity of the site for the five-year period between 2018 and 2022 reported that no casualty crashes have occurred on the roads near the site. In light of this it is considered that no further investigation of crash history is required.

### 6.7.3 ASSESSMENT IMPACTS

#### 6.7.3.1 Traffic generation

##### 6.7.3.1.1 Construction traffic

The construction of the project will take 8 months, with construction expected to commence late 2025. This timeframe will result in peak traffic periods commencing February/March 2026. It is expected that up to 25 construction staff vehicles will access the site per day, resulting in a total of up to 50 vehicle movements per day. Shuttle buses will also be utilised to accommodate the amount of construction workers required on site. This will involve four 22-seater shuttle buses, with two travelling from Yanco, one from Griffith and one from Narrandera. Assuming regular work hours, it is expected that 25 light vehicles including four shuttle buses will access the site during a given peak hour.

The largest design vehicle is a 26 m B-double.

##### 6.7.3.1.2 Oversize and overmass vehicles

Peak traffic movements for heavy vehicles are expected to occur in month 3 and months 5 to 6. It is expected that up to 14 heavy vehicles will access the site per day, resulting in a total of up to 28 heavy vehicle movements per day. Heavy vehicle movements will be managed by the project team through a delivery schedule to reduce chances of more than four heavy vehicle deliveries within the same hour. The lengths of these vehicles has not yet been determined at this stage of the development, however a conservative approach has been undertaken which considers the impact of all potential lengths of heavy vehicles.

Based on regular working hours, it is anticipated that heavy vehicle access to the site will predominantly occur outside of commuter peak hours.

The route assessment undertaken by Rex J Andrews confirms that the development will require a total of eight OSOM vehicles requiring escort to the development site. The report confirms that all OSOM vehicles and loads will be capable of a lowered height of 4.9m, to allow for use of the proposed route.

##### 6.7.3.1.3 Operational traffic

Once operational, onsite operations are limited to monitoring and maintaining the facility by on-site staff. Up to 5 light vehicles are anticipated to access the site per day, resulting in a total of up to 10 vehicle movements per day throughout the operational life of the development.

No heavy vehicles are expected to be required during operations, except for in unlikely events such as equipment damaged by fire.

#### 6.7.3.1.4 Decommissioning

The proposed development is subject to a 23 year lease. If not renewed at the end of the 23 year period, the facility operator will decommission the development and return the site to the pre-existing state. At such time, a decommissioning and rehabilitation plan will be prepared and provided to regulators for review and acceptance.

### 6.7.3.2 Traffic distribution

The TIA assumes that, based on the surrounding road network, the following distributions:

- Light vehicles accessing the site are expected to predominantly arrive from Yanco/Leeton/Griffith to the north (approximately 75%) and Narrandera from the south (approximately 25%).
- Heavy vehicles accessing the site are expected to arrive from Narrandera from the south (approximately 70%) and Yanco/Leeton to the north (approximately 30%).

Heavy vehicles arriving from the south via Narrandera are anticipated to consist of vehicles hauling equipment from Port Botany to the site. The nominated route for these movements will involve access from the Hume Highway via the Sturt Highway through Narrandera to Irrigation Way, left onto Houghton Road, left onto Hume Road and then to the subject site.

The heavy vehicle route is approved for use by heavy vehicles including 26 metre B-doubles, with the exception of the last 800 metres of unsealed local roads. While many of the deliveries will be via rigid 12.5 metre single unit trucks or 19 metre articulated trucks, it is noted that the grid transformer will be an exception. The grid transformer will require delivery to be undertaken by a specialist haulage contractor and is subject to licencing from the National Heavy Vehicle Regulator (NHVR).

The peak hour traffic generation during construction is expected to be 25 light vehicles and one (1) heavy vehicle. Noting the above assumptions around traffic generation, this results in 18 light vehicles arriving from the north and 8 vehicles from the south during the AM peak hour, and 18 light vehicles leaving to the north and 8 vehicles leaving to the south during the PM peak hour.

### 6.7.3.3 Traffic assessment

An analysis of the intersection of Houghton Road and Irrigation Way was completed and traffic conditions for 2026 were forecast based on existing volumes. The forecast allowed for a 1% p.a. increase in local roads and 3% p.a. increase in arterial roads. The forecast resulted in a total of 284 AM vehicle movements, and 436 PM vehicle movements.

The TIA includes a summary of the SIDRA analysis of intersections associated with the site access which has been reproduced in **Table 9**.

The degree of saturation (DOS) of an intersection is the ratio between the arrival flow of traffic and the intersection capacity during a flow period. A DOS of 1.0 indicates the capacity of an intersection in a situation where all parameters are optimal.

The SIDRA analysis reveals that the intersection of Houghton Road and Irrigation Way will operate well under capacity with minimal queuing or delays during the construction phase.

Table 9 – SIDRA analysis results summary

| Movements | DOS | | 95% queue (m) | | Average delay (sec) | |
|---|---|---|---|---|---|---|
| | AM | PM | AM | PM | AM | PM |
| Irrigation Way (south approach) | 0.080 | 0.132 | 0.0 | 0.0 | 0.8 | 0.2 |
| Irrigation Way (north approach) | 0.110 | 0.099 | 2.4 | 0.2 | 1.5 | 0.2 |
| Houghton Road (west approach) | 0.006 | 0.053 | 0.1 | 2.1 | 6.2 | 9.0 |

In terms of car parking generation, while the RTA guide does not provide a parking requirement for BESS facilities, an empirical assessment was undertaken in the TIA to determine the estimated parking demand on site. The site plan identifies a hardstand area and a formal on-site parking area sufficient to accommodate 25 light vehicles, in addition to shuttle buses, to address construction and operational parking demand.

#### 6.7.3.4 Cumulative impacts

The Yanco Solar Farm is to be located approximately 10 kilometres south of Leeton and, based on current available information, could potentially commence construction in July 2025, 4 to 5 months earlier than the Yanco BESS. The information available for the solar farm indicates that all site traffic will access Irrigation Way to the north of the intersection with Houghton Road, and there will be a maximum of 90 movements per day generated by the peak construction phase of the solar farm. The TIA concludes that the solar farm project will equate to a negligible increase in traffic on Irrigation Way at the Houghton Road intersection.

#### 6.7.3.5 Route assessment

The proposed development involves multiple over-dimensional movements. The largest over-dimension vehicle movement requiring escort is for the delivery of HV transformers. To manage this movement, a route assessment has been prepared by Rex J Andrews to support the TIA. Port Kembla has been identified as the port to which the HV transformer equipment will be imported.

The route considered in the assessment is as follows:

- Tom Thumb Road > Spring Hill Road > Masters Road > Princes Motorway > Mt Ousley Road > Picton-Wilton Road > Hume Highway > Sturt Highway > Newell Highway > Audley Street > Irrigation Road > Houghton Road > Hume Road > Site Entry

The analysis concludes that the route will require minor upgrades before deemed suitable for the proposed escorted vehicle movement. The key matters that will need further consideration include bridge assessments, consideration of overhead structures and overhead utilities (as the maximum load is 5.2 metres high) and maintaining the pavement of existing roads. With consideration of the height restrictions on the proposed route, the Rex J Andrews route assessment confirms that the load can be lowered to 4.9 metres when required.




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**Legend**

- Local Government Area
- Major Road
- Development Site
- Port Kembla
- Material Transport Route

Premise

**Yanco Battery Energy Storage System**

**Figure 15**

### 6.7.4 MITIGATION MEASURES

The TIA recommends the following mitigation measures:

- Update the subject site plan to include a designated parking area to satisfy the parking demand of 25 vehicles during the development's construction phase.
- The intersection of Irrigation Way and Houghton Road should be upgraded in accordance with the prepared Strategic Design plan.
- The intersection of Houghton Road, Hume Road and the subject site access should be upgraded in accordance with the prepared Functional Layout plan.
- Implement a traffic management plan to ensure no heavy vehicles arrive and depart simultaneously along Houghton Road.

## 6.8 Water

### 6.8.1 INTRODUCTION

A Flood Risk and Groundwater Assessment Report (Water Technology Pty Ltd, 2024) (FRGA) has been provided in **Appendix M**. The assessment included the following:

- Characterisation of surface water in development site and surrounding area
- Review of background information and topographic data
- Review of existing groundwater information available
- Development of a baselines hydraulic model to reflect flood behaviour and mechanisms
- Identification of potential impacts on surface water and water quality
- Preliminary hydrogeological assessment to determine groundwater levels and potential

### 6.8.2 EXISTING ENVIRONMENT

The site is located approximately 4.3 km north of the Murrumbidgee River (refer **Figure 16**). There is an existing flood study completed by Leeton Shire Council from 2019 that considered the flooding risks in the area surrounding the development site. While the development site was located just outside of the flood study area, based on the levels shown on the PMF mapping and existing levels of the site, it is evident that the site is relatively clear of flood impacts. To inform direct catchment runoff modelling, it was noted that there were several hydraulic structures within proximity to the site, including channels and drains, for which details were obtained from the land owner.

The development site is identified within the groundwater vulnerability mapping under the LLEP, which aims to ensure key groundwater systems are maintained and protected from depletion or contamination.

The development site is located in the Lower Murrumbidgee Alluvium, which is considered to be a highly productive alluvial aquifer. A 5km buffer around the site showed approximately two thirds of the buffer were within the Lower Murrumbidgee Shallow Groundwater Source, with the remaining third within the Lachlan Fold MDB Shallow Groundwater Source.

The Lower Murrumbidgee Alluvium Shallow Aquifer extends to a depth of 40m below surface and generally comprises yellow/brown sands and clays. The Lower Murrumbidgee Alluvium Deep Aquifer underlies the shallow aquifer and in some areas extends a further 400m below surface. The deep aquifer

generally comprises grey to white sans with some clay. Groundwater in both the shallow and deep aquifers flow east to west.

A review of the groundwater salinity data from surrounding bores suggested that the shallow aquifer has a lower salinity that the deep aquifer of the area. Recorded data from surrounding bores indicated that the groundwater levels in the shallow aquifer range from 1.75 m to 6.28 m, whereas the levels in the deep aquifer range from 15.73 m to 15.92 m.

Both terrestrial and aquatic groundwater dependent ecosystems are located 1 km to the south of the project adjoining the Murrumbidgee River. Of these the terrestrial GDEs are considered to have high potential for groundwater interactions.

### 6.8.3 ASSESSMENT IMPACTS

#### 6.8.3.1 Flood

As identified in the FRGA, the site is located above the PMF levels predicted in the 2019 flood study for the area and therefore riverine flooding of the site is considered unlikely. The detailed design of the development would incorporate crushed rock and concrete pads/footings for the batteries and other infrastructure. This is expected to mitigate the requirement for earthworks that could alter the flooding mechanism in or around the site.

In terms of direct catchment runoff, modelling has been completed to identify the maximum flood depth, velocity and hazard for each modelled AEP across the modelled event durations. Based on the modelling, it is considered unlikely that the development will adversely impact on the existing flood behaviours of the area. There is due to the lack of significant topography changes required for the construction. As a result, the development is not predicted to result in direct or indirect damage to the local community during the occurrence of a significant flood event.

Based on the flood depth, velocity and hazard of levels estimated in the flood modelling, the FRGA concludes that the site is categorised as low risk to surface water flooding. Notwithstanding, mitigation measures have been recommended in the unlikely event of flooding.

#### 6.8.3.2 Groundwater

No groundwater dewatering is expected to be required during the construction period. Due to this it is considered unlikely that GDEs within a 5km buffer would be impacted by the construction of the Yanco BESS.

Regarding the likelihood of contamination, no significant volumes of chemicals or fuels are expected to be stored on site. As such, the potential for groundwater contamination is considered to be minimal. Potential contamination incidents would be limited to a minor fuel leak or hydraulic hose leak or similar, all of which could likely be managed via spill kits and soil removal. Therefore, there is considered to be a low likelihood of contamination during construction.

During operation, likelihood of contamination is also considered to be low due to the design and placement of the battery units and the management of chemicals on site. The selected batteries are considered the safest type in the industry and do not contain heavy metals. In the unlikely event of battery failure, the battery units are self-contained, with anti-leak connections, therefore limiting any potential for contamination release. Through mitigation measures recommended in the PHA in

**Appendix O** , it is anticipated that any potential battery fires would be contained and reduce the risk of a larger fire breaking out on the site.

While another potential source of contamination is the storage of up to 100 L of fuel stored on site, this would be stored in a bunded enclosure and would be managed through safe management practices. It is therefore considered that likelihood of contamination during operation is also low.

The FRGA also noted that as there was low to negligible risk to the groundwater, no cumulative impacts are expected.

### 6.8.4 MITIGATION MEASURES

Mitigation measures in relation to surface water flooding include:

- Any sensitive infrastructure such as inverters and battery storage etc, should be located 450mm above finished ground level. This would ensure infrastructure is located above the 1% AEP flood level with a minimum of 230 mm freeboard.
- The footings should be designed to withstand the flood velocities described in this report, which are mostly low within the development site.
- It is recommended that best practice principles to stormwater and sediment control be incorporated into the design, construction and operation phases of the BESS site.
- It is anticipated that vehicles can safely access and egress from the development site, however consideration should be given to not restrict the movement of emergency vehicles on Houghton Road with any scheduled roadworks associated with construction

Mitigation measures to prevent potential chemical spills from reaching the groundwater system include:

- Self-bunded battery storage units
- Self-bunded fuel storage areas
- Regular maintenance and inspection of fuel bund, oil bund and battery storage units
- Development of site management plans that detail responses to leaks such as spill kits, removal and appropriate testing and disposal of impacted soils and options for installing groundwater monitoring bores in the case of a significant fire or unexpected leak.




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**Legend**

- Development Footprint
- Cadastre
- Road
- Railway
- Water Body

**Watercourse**

- Strahler = 0

- Groundwater Bores
- Electricity Transmission Line

**Groundwater Dependent Ecosystems (GDE) Probability**

- High
- Medium
- Low
- Non GDE

Premise

**Yanco Battery Energy Storage System**

**Figure 16**
**Water**

# 6.9 Contamination

## 6.9.1 INTRODUCTION

A Preliminary Site Investigation (PSI) for potential contamination was conducted by Cadeema (2024) and provided in **Appendix N**. The PSI included a review of historical site land uses, an assessment of environmental factors on and around the site, review of public records, review of historical imagery, a detailed site inspection, soil sample collection, soil laboratory analysis, and a subsequent assessment of whether there was a risk of contamination onsite.

## 6.9.2 EXISTING ENVIRONMENT

The development site consists of open, irrigable, land formed agricultural cropping and grazing land, and has been owned by the current landowner since the mid 1970's. It is understood that the land was irrigated periodically and used for sheep grazing and cropping land for approximately 50 years prior. Since the land owner obtained the land it has been used for irrigated summer and winter crops, lucerne, and some minor rice production, over a 30 year period. The land is currently used for rotational winter cropping such as wheat, barley, and canola due to difficulties with summer cropping. It is anticipated that the remaining land will continue to be used for winter cropping throughout the construction and operation of the BESS.

The development site is predominantly surrounded by irrigable agricultural cropping and grazing land, consistent with the existing use of the site. To the immediate north, the boundary adjoins Houghton Road, with Junee Railway and Ronfeldt Road on the far side of Houghton Road. To the east the site boundary adjoins Hume Road which is adjacent to a water authority irrigation channel and the Yanco Substation. The Yanco Substation appears to have been established between 1945 and 1968.

## 6.9.3 POTENTIAL CONTAMINATION SOURCES

From an analysis of historical land uses, the PSI finds that the adjacent Yanco substation presents the highest risk of land contamination. This is due to required maintenance activities, which can include dielectric fluid that may be present in water run-off from the substation.

A review of public records also identified a 2011 Clean Up Notice for a property 380 metres to the northwest of the site. However, it appears that this has since been cleaned up and is therefore not considered to present cause for concern.

Observations through desktop analysis, site inspection and interviews concluded there was no evidence of potential sources of contamination on site.

## 6.9.4 CONTAMINATION STATUS

Cadeema collected one soil sample from the site which was analysed in the laboratory for a range of potential soil contaminants. The data from the sample indicated typical and expected soil chemical characteristics, with not significant impacts by contaminants. Soil contaminant levels recorded were considered well below levels that trigger further investigation. It was found that the main contaminants associated with substations and historical agricultural pesticides were low and not of concern.

The PSI concluded that the site has a very low risk on contamination and that no further investigations were recommended. As such, no mitigation measures are recommended in this instance.

## 6.10 Hazards

### 6.10.1 INTRODUCTION

A Preliminary Hazard Analysis has been prepared by Riskcon (2024) in accordance with the Hazard Industry Planning Advisory Paper No. 4 - Risk Criteria for Land Use and Safety Planning, Hazard Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis (DOP, 2011) and Multi-Level Risk Assessment (DOP, 2011). The PHA accompanies this EIS at **Appendix O**.

The PHA has been prepared to provide:

- A summary of the assessment methodology in the context of the site and project description;
- Identification of hazards;
- Analysis of consequences;
- Frequency analysis and risk assessment; and
- Conclusions and recommendations.

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

### 6.10.2 ASSESSMENT IMPACTS

The key objectives of the PHA are to:

- Complete the PHA according to the Hazardous Industry Planning Advisory Paper (HIPAP) No. 6 – Hazard Analysis; and
- Assess the PHA results using criteria in HIPAP No. 4 – Risk Criteria for Land Use Planning.

The Multi-Level Risk Approach (MLRA) has been adopted in preparing the PHA. The MLRA has been prepared in accordance with the Multi-Level Risk Approach Guidelines (DPI, 2011). The MLRA Guidelines are intended to assist industry, consultants and the consent authorities to carry out and evaluate risk assessments at an appropriate level for the project being studies.

The approach to the MLRA was as follows:

- Hazard analysis – to identify potential hazards in the context of the site, location and project details.
- Consequence analysis – for those hazards identified via the hazard analysis as having a potential impact;
- Frequency analysis – those hazards identified via the consequence analysis of having the potential to occur off-site were then considered in the context of an initiating event and the probability to occur for failure of safeguards;
- Risk assessment and Reduction – the results of the consequence and frequency analysis for those incidents carried forward via the PHA were combined with the risk in the context of HIPAP No. 4 risk criteria. Where this risk was exceeded, a further assessment of the risk was completed in the context of the proposed mitigation measures; and
- Reporting – a summary of the outcome of the assessment.

Via the MLRA, a number of risks were considered and discounted. Those that were carried forward as having a residual risk requiring further assessment are:

- Li-ion battery fault, thermal runaway and fire;
- Victorian Big Battery fire review;
- 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

#### 6.10.2.1 Li-ion battery fault, thermal runaway and fire

As noted in the Riskcon PHA, despite improvement in battery technology there are several degradation mechanisms which can result in thermal runaway that are primarily a result of high discharge, overcharging, or water ingress into the battery which results in a host of by-products being formed within the battery during charge and discharge cycles.

As a result, Li-ion batteries are equipped with several safety features to prevent the batteries from overcharging or discharging at voltages which result in battery degradation, leading to shorting of the battery and thermal runaway.

The PHA includes a review of the batteries proposed to be used for the Yanco BESS, which are based on a battery chemistry of Lithium Iron Phosphate (LiFePO4, or simply LFP). LFP is considered to be one of the safest battery chemistries within the industry, having a thermal rise of 1.50 C/min. Where other typical lithium ion battery chemistries have a thermal rise of 200-4000 C/min, the gradual temperature rise of LFP does not result in a fire and incident propagation to other batteries.

In the event that LFP chemistries ignite by artificial means, the combustion by-products release carbon dioxide which reduces the oxygen concentration within a confined space reducing the combustion rate. Any fire would be further supressed by a fire suppression system fitted within each container to prevent escalation to other battery units.

In addition to these measures, different means of preventing battery ignition can be implemented, such as physical construction arrangements, battery monitoring, heat detection etc. These can be implemented on a system-by-system basis specific to the system needs.

The Riskcon PHA concludes that LFP technology does not cause fire during thermal runaway and that should fire develop within one container it would not transfer to nearby containers due to fire safety design features.

The incident is not carried forward for further analysis.

#### 6.10.2.2 Victorian Big Battery Fire Review

The Riskcon PHA includes a review of the Victorian Big Battery (VBB) Fire to determine whether similar incidents could occur at the Yanco BESS.

The Riskcon PHA reports that the main reason for fire propagation within the VBB was strong winds blowing flames from one Megapack to the unprotected vent atop an adjacent Megapack, resulting in the ignition of a plastic fan which impacted battery modules directly beneath. Riskcon have made recommendations in relation to vent locations and covers to ensure the issue is mitigated for the Yanco BESS.

Further, the PHA notes that there is sufficient space on site to maintain required minimum 3 metre separation distance to prevent incident propagation between BESS subunits. Based on this Riskcon consider the propagation of two units unlikely.

This incident has not been carried forward for further analysis.

#### 6.10.2.3 Li-ion battery fire and toxic gas dispersion

As noted in the Riskcon PHA, in the event of a BESS fire by-products of combustion toxic gases may be formed as a by-product of combustion, including:

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

These gases are discussed in further detail below.

##### 6.10.2.3.1 Carbon Dioxide

The Riskcon PHA identifies that while li-ion batteries are predominately composed of metal structures, ancillary equipment and materials include wiring, plastic and anodes etc that would liberate carbon dioxide during a fire.

Notwithstanding, The PHA states that based upon a review of sensitive areas and similar BESS fires (i.e., Victoria BESS fire), it is not considered that that the formation of carbon dioxide would not result in downwind impacts sufficient to cause injury or fatality.

This incident has not been carried forward for further analysis.

##### 6.10.2.3.2 Carbon Monoxide

The Riskcon PHA identifies that while there is potential for fire to occur within the BESS units which could form carbon monoxide if there is insufficient oxygen to sustain combustion, the combustible load within the BESS which could result in the formation of carbon monoxide is low.

The PHA states that the formation of carbon monoxide at levels which result in a substantial downwind impact are not considered credible and the incident has not been carried forward for further analysis.

##### 6.10.2.3.3 Fluorine gases

With regard to fluorine gases, the Riskcon PHA notes that hydrogen fluoride (HF) is the main fluorine gas of concern in a Li-ion battery fire.

For toxic gas dispersion of HF to occur, a battery container fire is necessary as the initiating event.

Given that the potential for a fire to occur is considered negligible due to the highly stable and safe battery chemistries used, the initiating event is considered unlikely.

This incident has not been carried forward for further analysis.

#### 6.10.2.4 Electrical equipment failure and fire

With respect to electrical equipment failure and fire, the Riskcon PHA notes that type of equipment used within the project is ubiquitous throughout the world and across industry segments and is not a unique fire scenario.

Although there is potential for equipment within the switch room to fail and result in arcing and overheating, any fire would be relatively slow in growth and would be unlikely to result in substantial impacts in terms of offsite impact or incident propagation.

This incident has not been carried forward for further assessment.

#### 6.10.2.5 Transformer internal arcing, oil spill, ignition and bund fire

As noted in the Riskcon PHA, while there is potential for the oil in a transformer to ignite if pressure rise in a transformer exceeds structural integrity of the reservoir, it is considered that the transformers are common units with a low potential for failure. Further, it is considered that the separation distance to the site boundary and other adjacent units would be unlikely to result in incident propagation and offsite impacts. This incident has not been carried forward for further analysis.

#### 6.10.2.6 Transformer Electrical Surge Protection Failure and Explosion

The Riskcon PHA states 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.

Notwithstanding, these surge protectors do not protect against all events such as a major lightning strike, or significant deterioration, leakage of water into the transformer or physical damage, such as a fallen tree. While there is potential for an explosion to occur under these circumstances, the transformers are common units with a low potential for failure.

This incident has not been carried forward for further analysis.

#### 6.10.2.7 Electromagnetic field impacts

The Riskcon PHA states that BESS create Electromagnetic Fields (EMFs) from operational equipment such as transmission lines, transformers and the electrical components found within BESS units, inverters etc. This equipment has the potential to produce ELF EMFs in the range of 30 to 300 Hz.

Riskcon reports that there are currently no standards in Australia to govern exposure limits to Extremely Low Frequency (ELF) EMF. However, the International Commission on Non-Ionizing Radiation Protection (ICNIRP) has provided some guideline which limits exposure to 2,000 milligauss (mG) for member of the public in a 24 hour period.

The PHA concludes that as the strengths of EMF attenuate rapidly with distance, the ICNIRP reference level for exposure to the general public will not be exceeded and impacts to the general public in surrounding land uses would be negligible.

This incident has not been carried forward for further analysis.

#### 6.10.2.8 Assessment conclusion

The Riskcon PHA concludes that their review of the aforementioned incidents indicates that there was no observed offsite impact and that any risk at the site boundary is not considered to exceed the acceptable risk criteria.

### 6.10.3 MITIGATION MEASURES

The PHA provides the following recommended mitigation measures:

- End-to-end spacing (short side) of BESS containerised units shall be a minimum of 3 m
- Back-to-back spacing (long side) of BESS containerised units shall be a minimum of 3 m
- Distance from electrical compartment surface to the wall of other containers 1.1 m.
- Spacing between BESS container accumulations (i.e. 4 containerised units) shall be a minimum of 3 m.
- The BESS containerised units shall be provided with the fire protection system specified by the BESS manufacturer.
- Prior to construction, the total area required for the BESS units shall be verified against the available space to demonstrate there is adequate area to achieve the required spacing.
- The vents shall not be located above battery packs within the BESS container.
- The vent covers of the BESS shall be constructed of non-combustible material.
- Prior to commissioning, the UL test data for the selected battery units shall be made available to the DPHI.

## 6.11 Bushfire

### 6.11.1 INTRODUCTION

A Bushfire Assessment Report (BAR) has been completed for the project by Cool Burn Fire and Ecology (2024) and is provided in **Appendix P**. The BAR was prepared to address the requirements of the NSW RFS publication *Planning for Bushfire Protection* (2019) (PBP).

The BAR has been prepared to:

- Address the SEARs
- Inform stakeholders of potential bushfire risks
- Recommend mitigation measures to ensure the bushfire risk is at an acceptable level
- Demonstrate consistency with the aims and objectives of PBP

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

### 6.11.2 EXISTING ENVIRONMENT

The development footprint is located clear of land mapped as bushfire prone land (refer **Figure 17**) however vegetation and topography on and surrounding the site puts the site at risk of a bushfire threat. The site is generally flat and comprises grasslands and irrigated cropping. These vegetation types have potential to facilitate a grass fire and therefore it is considered that a bushfire threat exists.

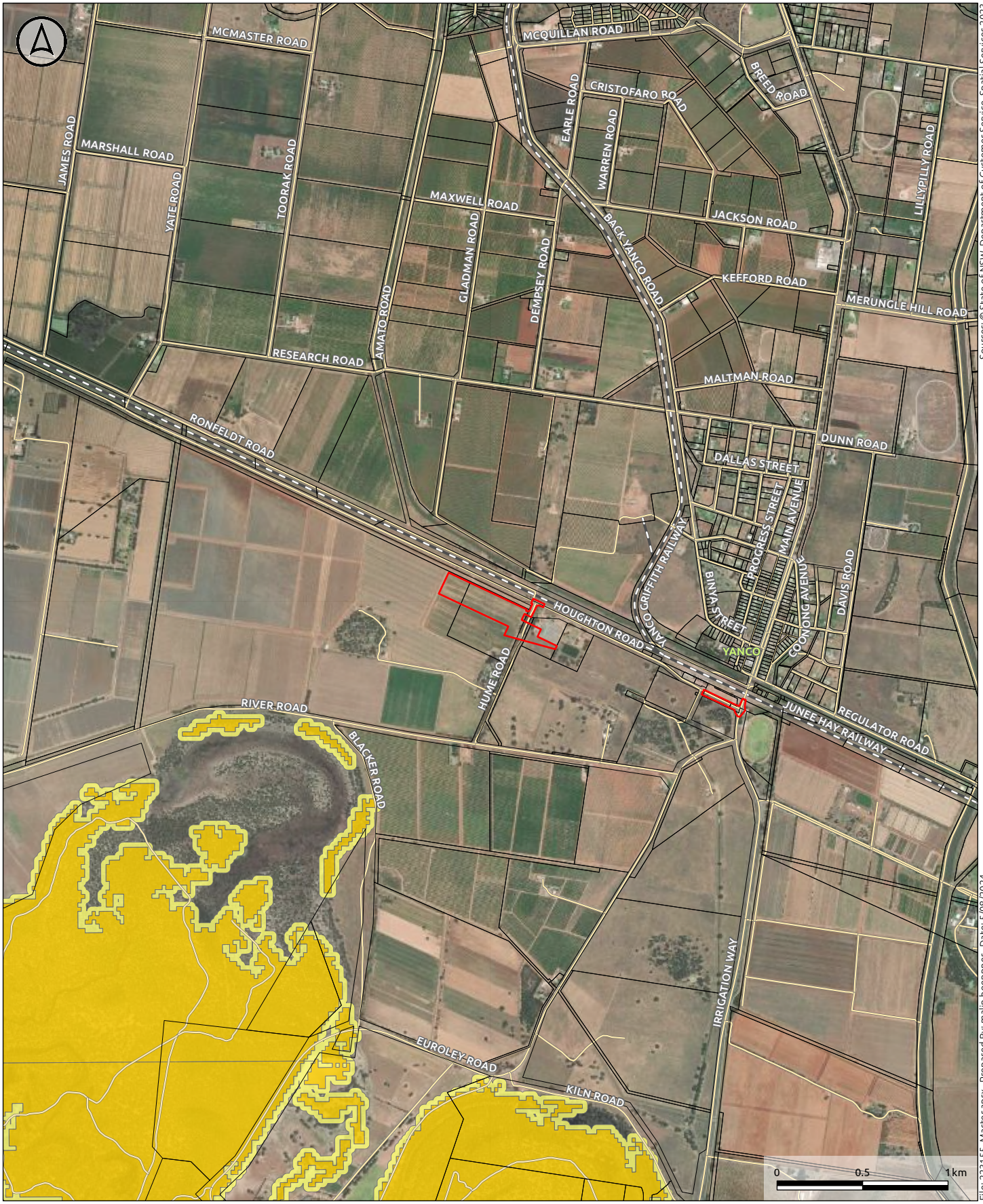
There is very little bushfire history mapped for the Yanco locality, with the most recent and nearest bushfire recorded as the River Road fires (2014/2015) located in the wetlands to the south. It is assumed these fires were ignited due to a lightning strike.

The Murrumbidgee Irrigation Area Bushfire Risk Management Plan 2008 identifies the top sources of bushfire ignition as lightning and accidental ignitions via farm machinery, equipment and operations.

### 6.11.3 ASSESSMENT IMPACTS

The BAR notes that the development footprint is located on lots that are:

- Located within the Leeton LGA and have a Fire Danger Index (FDI) classification of Forest FDI 80 and Grassland FDI 110. However, over the next 25 years the BAR flags that climate change is expected to result in higher Fire Danger Ratings (FDR).
- Generally flat with no effective slope, and comprise managed grasslands, derived native grasslands, and grassy woodlands remnants
- In the context of PBP, the BAR notes that the project has been developed to achieve compliance with the specifications and requirements of the PBP subject to the recommended mitigation measures outlined in **Section 6.11.4**.



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**Legend**

- Development Footprint
- Cadastre
- Road
- Railway

**Bushfire Prone Land**

- Vegetation Buffer
- Vegetation Category 2

Premise

**Yanco Battery Energy Storage System**

**Figure 17**
**Bushfire Prone Land**

### 6.11.4 MITIGATION MEASURES

The following mitigation measures would be implemented to achieve compliance with PBP:

- Asset Protection zone (APZ) buffers will be a minimum 10m width provided around project-related infrastructure and to the outer perimeter (vegetation screen and south wall define limit). Temporary construction and laydown areas, site access and associated fencing do not require specific APZ.
- APZ to be managed as Inner Protection Area (IPA) for the life of development. The following vegetation management requirements apply in the APZ:
  - Trees (there would be no trees within the APZ).
  - Shrubs (there would be no shrubs within the APZ).
  - Grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and leaves and vegetation debris should be removed.
  - Roads and paved/cleared areas are suitable within the APZ
- Landscape maintenance includes APZ around infrastructure, the proposed vegetation screening and land management across the surrounding Project area to reduce fire intensity and rate of spread as it may approach a structure or structures.
  - APZ management to maintain fuel loads as required as per Section 5.2 of this report.
  - Vegetation screening greater than 10m from infrastructure (APZ), maintained to remove dead/dry vegetation and fuel build-up.
  - The vegetation screens will be managed under a landscape or vegetation management plan so that they are managed in perpetuity as a low threat and do not increase the threat toward the structures.
  - Landscape management requires ongoing monitoring and maintenance.
  - Bushfire fuel management surrounding development can be achieved in ongoing agricultural practices such as grazing, cropping, slashing etc.
  - A BEMOP to guide landscape and APZ management, monitor and manage potential fuel loads surrounding the Project area.
- The noise wall design and material will be non-combustible outer layer (e.g. sheet metal or cementitious layer) front and back and a fire-retardant core, and not increase the risk of fire toward the BESS infrastructure.
- On-site water supply (minimum 10,000 L) to be strategically positioned, as per Fire Safety Study specifications.
  - Water supply to be accessible and have appropriate firefighting appliance connections.
  - Water supplies to be detailed in a Bushfire and Emergency Management Operation Plan (BEMOP) or similar planning strategy.
- Main access, internal roads and alternate egress provide for safe, reliable, and unobstructed passage by a Cat 1 firefighting vehicle as per Section 5.5 of the BAR (**Appendix P**) and maintained for the life of the development.
- The width and capacity of the access provides for safe, reliable, and unobstructed passage by a Cat 1 firefighting vehicle within acceptable operational limits:
  - The trafficable surface has a minimum width of 4m.
  - The access has a minimum 4m height clearance overhead, free from any obstructions.
  - Curves inner radius 6m.

- Crossfall less than 6 degrees.
- Surfaces and crossing structures are capable of carrying vehicles with a gross vehicle mass of 15 tonnes and an axle load of 9 tonnes.
- Turnaround provisions of 12 m radius or T junction at the termination of each access track and in position of any dedicated water supply tanks.
- All access will be detailed in the BEMOP

> A BEMOP should be prepared to support emergency management for the Project and ensure bushfire protection actions are maintained.

> The Plan should be developed in consultation with the local NSW RFS District Office and the Emergency Management Plan and be communicated to relevant stakeholders.

> A BEMOP will guide annual monitoring of the fire mitigation works for the Project operations and surrounding landholding:

- APZ and landscape fuel load management.
- Access provisions.
- Water supplies.
- Emergency Response in coordination with the Fire Safety Study and Emergency Management Plan.

## 6.12 Waste

### 6.12.1 INTRODUCTION

Premise has conducted a review of likely waste impacts associated with the construction and operation of the project. The legislative framework and assessment of impacts is provided in the following sections.

### 6.12.2 EXISTING ENVIRONMENT

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

### 6.12.3 ASSESSMENT IMPACTS

#### 6.12.3.1 Construction

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; and

> 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 (i.e., 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.

#### 6.12.3.2 Operation

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 intended life of the project is up to 23 years, it is possible that batteries may require replacement 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* (National Transport Commission 2020, Ed. 7.7). 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 solar farms and large-scale batteries and uptake of electric vehicles increases in Australia in response to the shifting methods of energy generation and management, there is the likely potential for increase in batteries requiring recycling or disposal. This will increase opportunities for onshore recycling operations and avoid the need for export of these materials, a shift that is now increasingly evident in the domestic market.

#### 6.12.3.3 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.

Most 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 or sub-station) would remain on site, subject to agreements with the landowner.

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

### 6.12.4 MITIGATION MEASURES

A Waste Management Plan for all phases of the project would be prepared and implemented prior to the commencement of any works on the site.

# 6.13 Social

## 6.13.1 INTRODUCTION

A Social Impact Assessment (SIA; bd infrastructure Pty Ltd, 2023) is provided in **Appendix Q**. The assessment has been prepared in accordance with the *Social Impact Assessment Guideline* (DPE, 2023). The SIA outlines the following:

- A social baseline of the social locality
- An assessment of potential social impacts
- Identification of mitigation measures for potential social impacts

A summary of the SIA is provided in the following sections, as well as the recommended mitigation measures.

## 6.13.2 EXISTING ENVIRONMENT

The SIA identifies the social locality as the Yanco Suburb and locality (SAL) and Leeton SAL. When determining the social locality several factors were considered. Some of the key considerations included the following:

- The project is located in a rural area and is considered to be small scale in comparison to other major projects such as transport and extractive industry projects.
- The development site is located 1.5 km from Yanco and is therefore distanced from direct social impacts.
- No vulnerable or marginalised people were identified during engagement activities that would influence the social locality.
- A main social trend relevant to the project is the lack of affordable housing, which is a consistent issue nation-wide.
- The SIA acknowledges the Wiradjuri People as the first inhabitants of the land on which the development site is located. The social locality incorporates part of the land identified as Wiradjuri Land.

Within the nominated social locality the following characteristics are considered:

- A population of approximately 10,330 people
- The median age within the Yanco SAL (25 years) is significantly lower than Leeton SAL (38 years) and NSW (39 years).
- A greater percentage of Aboriginal and/or Torres Strait Islander residents (Yanco (6.3%) and Leeton (7.2%)) compared to NSW (3.4%).
- Yanco SAL generally has a higher percentage of lone person households, whereas Leeton SAL comprises a higher proportion of couple families with children.
- Yanco SAL (77.8%) has a higher proportion of owned and mortgaged dwellings compared to Leeton (66.1%) and NSW (64%).
- Yanco SAL (14.6%) has a lower proportion of rented dwellings compared to Leeton (30.5%) and NSW (32.6%).
- Yanco SAL has a 100% occupancy of private dwellings which is significantly higher than the Leeton SAL (91.7%) and NSW (90.6%) occupancy rates.

- The Socio-economic Index for Areas (SEIFA) score indicates a relatively high level of socio-economic disadvantage for Leeton SA2.
- Yanco SAL (2.3%) and Leeton SAL (2.4%) generally have a lower unemployment rate than NSW (3%).

### 6.13.3 ASSESSMENT IMPACTS

Key non-enhanced positive and unmitigated negative impacts have been identified and summarised in **Table 10**.

**Table 10 - Summary of Assessed Social Impacts**

| Social Impact | Nature | Social Impact Category | Project Phase | Social impact significance |
|---|---|---|---|---|
| Business revenue and employment<br>- 70 new jobs<br>- Stimulate local businesses | Positive | Livelihood | Construction | Medium (likely, moderate magnitude) |
| Business revenue and employment<br>- 5 full-time long term<br>- Cumulative industry investment in renewable energy | Positive | Livelihood | Operation and Cumulative | Medium (likely, moderate magnitude) |
| Community benefit and energy transition<br>- Benefit-sharing programs<br>- Active community engagement | Positive | Community | Operation and cumulative | Medium (likely, moderate magnitude) |
| Amenity<br>- Potential noise, vibration, visual changes and traffic congestion | Negative | Way of life | Construction and cumulative | Low (possible, minimal magnitude) |
| Amenity<br>- Operational noise | Negative | Way of life | Operation | Low (possible, minimal magnitude) |
| Workforce accommodation<br>- Influx of temporary construction workers | Negative | Community | Construction and cumulative | Medium (possible, minor magnitude) |

| | | | | |
|---|---|---|---|---|
| Local road network access and transport services<br>> Potential temporary road access and parking disruptions<br>> Access to transport services | Negative | Accessibility | Construction and cumulative | Low (unlikely, minor magnitude) |
| Aboriginal cultural heritage<br>> Disturbances to archaeological items or other culturally significant locations | Negative | Culture | Construction | Low (unlikely, minor magnitude) |
| Potential operational fire risks and EMF | Negative | Health and Wellbeing | Operation | Low (unlikely, minor magnitude) |
| Visual Impacts<br>> Potential for projects to transition area character from rural to energy generation activities | Negative | Surrounds | Cumulative | Low (unlikely, minor magnitude) |

While the above assessment assumes that the project will not implement mitigation measures, several measures have been identified that will have the effect of improving non-enhanced positive impacts and reduce unmitigated negative impacts.

Direct discussions are ongoing between the ACEnergy and LSC to reach agreement on the method and amount of benefit sharing. This will continue post lodgement with a final agreement to be reached prior to the application being determined.

### 6.13.4 MITIGATION MEASURES

The SIA recommends the following mitigation measures to improve non-enhanced positive impacts and mitigate negative impacts:

> Target local economic benefits through procurement of local goods and services.
> Track and report on local content used for the project.
> Prioritise hiring local workers with requisite skills and experience.
> Use online and offline methods to share and register interest in project opportunities.
> Engage regularly with local businesses about construction periods and potential increases in trade.
> Encourage project workforce to support local businesses through local spending initiatives (e.g., vouchers).
> Develop and implement an Industry Participation Plan addressing:
  - Opportunities for supply of goods and services, employment, training (including Aboriginal participation), and sustainable procurement.
  - Metrics to track goals for each opportunity.

- Engagement with Leeton Shire Council, local businesses, and the Leeton Chamber of Commerce to understand procurement limitations and aspirations.

> Partner with LGAs and organisations to inform prospective workers about participation in the project.
> Use a project-specific website and existing LGA communication channels.
> Collaborate with local employment, apprenticeship, and training providers to enhance local hiring potential.
> Develop and implement local content initiatives with procurement goals for the operation phase.
> Identify community funding opportunities.
> Engage in community involvement initiatives, potentially in partnership with nearby renewable energy SSD proponents.
> Promote and use the Community Stakeholder Engagement Plan (CSEP) to continue collaborating with stakeholders and the community to identify opportunities.
> Maintain ongoing communication with local residents throughout the project to ensure transparency and during work that produces impulsive, intermittent, or low-frequency noise, regular consultation with sensitive receptors is advised.
> Staff training on noise management is recommended.
> Shuttle bus service - organising shuttle buses from Griffith and Narrandera for a portion of the workforce. This will reduce the demand for local accommodation and help mitigate worker travel fatigue.
> Accommodation provider coordination - continue discussions with accommodation providers, ensuring proactive planning to secure availability in Yanco, however unlikely this may be due to accommodation stock levels.
> Maintain ongoing dialogue with the Yanco Solar Farm team and accommodation suppliers to address potential cumulative impacts and ensure coordination and if possible sequencing of workforce.
> Develop an Accommodation, Employment, and Procurement Strategy/Plan to support local businesses in becoming competitive and sustainably servicing the construction workforce over the 8-month project period.
> Designed and operated in accordance with AS4282-2019 to minimise obtrusive effects.
> Noise walls and buildings will be painted in colours that blend with the local landscape.

## 6.14 Economic Impacts

### 6.14.1 CONSTRUCTION

Key economic impacts during construction would include:

> Increased employment;
> Investment in the local economy; and
> Pressure on local services.

During the peak of construction, the project would generate up to 70 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. Noting the currently proposed timing of the Yanco Solar Farm, and the sequential peak construction phase for that project and the proposed Yanco BESS it is potentially likely that workers coming off the Yanco Solar Farm may be able to be employed in the construction of the Yanco BESS. This would alleviate some of the pressures, as these workers would already be resident in the locality.

Given the limited size of Yanco, it is expected that workers would reside in Leeton and Griffith 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 the small area of land involvement and that upon commencement of operations, co-located agricultural opportunities would be investigated.

### 6.14.2 OPERATION

During operation the project will provide up to 5 full time jobs, generally comprising maintenance activities. 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 land will continue to generate an income.

### 6.14.3 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.

## 6.15 Cumulative Impacts

### 6.15.1 INTRODUCTION

A review of the potential for cumulative impacts has been prepared by Premise.

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

### 6.15.2 EXISTING ENVIRONMENT

A review of the major project website for renewable projects within the region was completed. Two nearby projects identified that are considered to require assessment with regard to cumulative impacts. The identified renewable energy projects are detailed in **Table 11**.

**Table 11 – SSD Renewable projects**

| Location: | Stage: | Distance (Direction) from Site: |
|---|---|---|
| Yanco Solar Farm | Approved but not yet constructed/operational | 2.5 km north |
| Comet Park BESS | Prepare SEARs | 400m south |

A review of other major projects in the locality found that there were no non-renewable projects were identified as likely to result in cumulative impacts. However, it was noted that there is a small scale BESS located at 649 Ronfeldt Road, Yanco which was approved by Leeton Shire Council on 5 August 2024.

### 6.15.3 ASSESSMENT IMPACTS

With only three renewable projects identified in close proximity to the development site, it is considered that there is limited capacity for the opportunity for cumulative impacts. Notwithstanding, an assessment of the potential cumulative impacts has been undertaken within the supporting specialist reports and are discussed below. The key cumulative impacts considered include the following:

- Biodiversity
- Land
- Noise
- Traffic
- Social and economic

#### 6.15.3.1 Biodiversity

As discussed in the BDAR, the cumulative impacts relating to biodiversity are expected to be negligible. Similarly to the Yanco BESS, the Ronfeldt Road BESS and Comet Park BESS and both located clear of native vegetation and on sites that are considered to lack significant biodiversity values. In particular, the scoping report for the Comet Park BESS is seeking a BDAR waiver due to the lack of biodiversity disturbance expected. On this basis it is considered unlikely that the Yanco BESS will result in any significant cumulative impacts relating to biodiversity when considered in conjunction with other nearby projects.

#### 6.15.3.2 Land Use

As discussed in the LUCRA, while there are renewable projects located in close proximity to the site, it is considered that ongoing consultation with developers will allow for suitable management of cumulative impacts throughout the construction and operation phases.

In terms of surrounding land uses, the surrounding agricultural uses in conjunction with the Yanco BESS are not anticipated to result in cumulative impacts. Furthermore, the Yanco BESS is not expected to prevent the establishment of other future land uses.

#### 6.15.3.3 Noise

As discussed in the NIA, the Yanco Solar Farm is expected to commence construction four months prior to the planned commencement of the Yanco BESS, resulting in a five month overlap. An assessment of both projects against common receivers found that the highest noise levels would remain within an acceptable noise limit. While the Comet Park BESS has also lodged a request for SEARs, it cannot be known with certainty whether the project will be permitted to proceed at this early stage. If the project is to proceed past SEARs ongoing communication with developers would allow for early management of potential acoustic impacts.

#### 6.15.3.4 Traffic

As discussed in the TIA, there may be a five month overlap between Yanco Solar Farm and Yanco BESS. During this period, the TIA considers that the anticipated traffic movements would be well within the capacity of the road network, particularly with consideration of the capacity of the Houghton Road/Irrigation Way intersection. The TIA concludes that there would be negligible impacts on the Houghton Road/Irrigation Way intersection.

Further, as mentioned, Comet Park BESS is in early stages of project development with limited information available in terms of intended construction dates. However, communication throughout project planning will allow for traffic related cumulative impacts to be managed appropriately.

#### 6.15.3.5 Social and economic

As discussed in the relevant assessments for social and economic impacts, the likely cumulative impacts relate to an overall investment in renewable energy industry, community benefit sharing programs, influx of construction workforce, and pressure on local services including accommodation. While these cumulative impacts comprise both positive and negative impacts, mitigation measures recommended in the relevant assessments are considered sufficient to suitably manage the cumulative impacts of the development in conjunction with surrounding renewable projects. These social and economic mitigation measures include, but are not limited to, requirements for an accommodation strategy, ongoing communication and monitoring of local services and businesses, and consideration of timing in project planning.

### 6.15.4 MITIGATION MEASURES

Mitigation measures in relation to cumulative impacts have been included in the relevant impact assessments. The following mitigation measure is recommended in addition to the previously addressed matters:

- Maintain ongoing dialogue with surrounding renewable developers and accommodation suppliers to address potential cumulative impacts and ensure coordination and if possible sequencing of workforce.

# 7. JUSTIFICATION OF THE PROJECT

This section 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

## 7.1 Design of the project

The project design has been carefully designed and informed by the findings of specialist reports completed in relation to the project, to ensure that impacts are avoided and minimised where possible.

The Yanco 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 project via a new 132 kV line connected to the existing Yanco Substation 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.

Several feasible alternatives have been considered (refer **Section 2.4**) have been considered, and it was concluded that proceeding with the project with the current design (Option 4) was the preferred pathway. The development site has been carefully selected to identify a site that is immediately adjacent to the existing Yanco Substation and in a location that minimises fragmentation of agricultural land.

The construction schedule for the project will consider the timing of other major projects in the region to ensure that cumulative impacts are minimised.

Where impacts have been identified or are unavoidable, mitigation measures have been identified to mitigate impacts on the local or regional environment. These mitigation measures have been identified throughout the EIS and summarised in **Appendix E**.

## 7.2 Consistency with 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 23 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 2.2** of this EIS.

## 7.3 Compliance with relevant statutory requirements

The project is characterised as SSD as the proposal is for the purpose of electricity generating development works with an EDC of more than $30 million, pursuant to Clause 20 of Schedule 1 of the Planning Systems SEPP.

Pursuant to the LLEP, the project is on land zoned as RU1 Primary Production.

Electricity generating works are permitted with consent in the RU1 land use zone via the Infrastructure SEPP. The BESS is wholly located within the RU1 zoned land, including the proposed transmission line connecting to the substation and the existing access driveway.

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

## 7.4 Community views

Consultation with the community about the project identified general interest in the project, with limited responses to engagement activities. Of the responses, areas of interest included cost of living and important of local employment and opportunities in the area, as well as support for renewable investments in the area. Responses from the greater community of Yanco, Leeton and Griffith expressed general interest in the projects location, construction and operation timeline.

Refer to **Section 0** of this EIS for a detailed discussion.

## 7.5 Economic, social, environmental and cumulative impacts

The proposed development is likely to have a net positive economic impact derived from creating local employment opportunities during the construction, operation and decommissioning phases, as well as by contributing to electricity supply from renewable sources and stability. Improved electricity supply and stability are expected to contribute towards downward pressure on electricity prices paid by residents of the local area, as well as by users of the broader electricity network.

The unmitigated social impacts assessed in the SIA resulted in an overall impact significance of low to medium significance for both positive and negative impacts. It is expected that the mitigation measures recommended in the SIA will further improve these impacts

With consideration of the specialist reports relating to the project, the project has been sited and designed to minimise environmental impacts. Where environmental impacts cannot be avoided mitigation measures have been included.

A review of the NSW Major Projects portal and Leeton Shire Council DA tracker has been completed to identify potentially significant projects within the Yanco area. Whilst there are a range of projects in development or in operation within the locality of the project, there is limited capacity for the opportunity for cumulative impacts. Refer to **Section 6.15** for a detailed discussion of impacts.

## 7.6 Compliance monitoring and communication

Throughout construction, mitigation 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 and Emergency Management Operation Plan
- Soil and Water Management Plan
- Emergency Response Plan
- Fire Safety Study
- Community Stakeholder 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 hazards and environmental monitoring and ongoing noise monitoring to ensure ongoing compliance with adopted criteria.

The site is expected to operate for a period of approximately 23 years, after which it would either be approved for an extended timeframe or be decommissioned. Decommissioning would be in accordance with the measures outlined in a decommissioning management plan.

## 7.7 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.

## 7.8 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 7.9.** It has been consistently 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 is in the public interest.

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

## 7.9 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

### 7.9.1 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 EIS and all mitigation measures are summarised in **Appendix E**.

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 on renewable forms of energy generation is sustainable.

### 7.9.2 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 E** to mitigate potential impact associated with noise and vibration, traffic and transport, drainage and water quality, Aboriginal heritage, soils, and waste.

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.

### 7.9.3 CONSERVATION OF BIOLOGICAL DIVERSITY AND ECOLOGICAL INTEGRITY

The third principle of the 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 6.1.4**.

### 7.9.4 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.

## 7.10 Site suitability

As outlined throughout this EIS, the site is suitable for the proposed purpose on the basis that:

- The site is within an agricultural area with limited residential receivers;
- The site is not unduly constrained such that the development would result in significant impacts to the receiving environment;
- The site is proximal to existing electrical infrastructure (substation and transmission lines) to meet the objectives of the project and substantial upgrades are not required;
- The co-location with the existing substation ensures that the project would not result in a radical transformation of the locality; and
- The project has been refined (as discussed in **Section 2.5**) to ensure the design and delivery of the project would not lead to unreasonable impacts.

## 7.11 Conclusion

This EIS has been prepared pursuant to Part 4, Division 4.7 of *the Environmental Planning and Assessment Act 1979* (the EP&A Act), Part 8, Division 5 of the *Environmental Planning and Assessment Regulation 2021* (the EP&A Regulation), *State Significant Development Guidelines – Preparing an Environmental Impact Statement* (DPIE, 2022) and SEARs issued by DPHI on 28 February 2024 in response to the Scoping Report.

An assessment of potential environmental impacts has identified limited minor adverse residual 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 12 – References


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|---|
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| References |
| --- |
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# APPENDIX A

## SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

# APPENDIX B

## SEARS CHECKLIST

Table 13 – SEARs requirements

| | Details | Section of EIS where issue addressed |
|---|---|---|
| **General Requirements** | In particular, the EIS must include: | |
| | > a stand-alone executive summary; | Refer to **Executive Summary** |
| | > a full description of the development, including:<br>– details of construction, operation and decommissioning, including any staging of the development;<br>– a high quality site plan at 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);<br>– a high quality detailed constraints map identifying the key environmental and other land use constraints that have informed the final design of the development; and<br>– confirmation if the project is designated development in accordance with the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the Regulation; | 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, other proposed or approved energy facilities, major projects, rural/residential development, Crown lands within and adjacent to the project site and subdivision potential); | Refer to **Section 2.2, Section 6.4 and Section 7** |
| | > a risk assessment of the potential impacts of the development, identifying the key issues for further assessment; | Refer to **Section 6** |
| | > an assessment of the likely impacts of the development on the environment, and any other significant issues identified in the above risk assessment, 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 2.1** |
| | – an assessment of the likely impacts of all stages of the development, (which is commensurate with the | Refer to **Section 6 and Section 6.15** |

| Details | Section of EIS where issue addressed |
|---|---|
| level of impact), including any cumulative impacts of the site and existing, approved or proposed developments in the region and impacts on the site and any road upgrades, taking into consideration any relevant legislation, environmental planning instruments, guidelines, policies, plans and industry codes of practice including the Cumulative Impact Assessment Guideline (DPE, 2022); | |
| – 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 E** |
| – 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 E** |
| > a consolidated summary of all the proposed environmental management and monitoring measures, identifying all the commitments in the EIS | Refer to **Appendix E** |
| > a detailed evaluation of the merits of the project as a whole having regard to: | |
| – the requirements in Section 4.15 of the EP&A Act, including the objects of the Act and how the principles of ecologically sustainable development have been incorporated in the design, construction and ongoing operations of the development; | Refer to **Section 4** and **Section 7.9** |
| – the suitability of the site with respect to potential land use conflicts with existing and future surrounding land uses; and | Refer to **Section 7.10** |
| – feasible alternatives to the development and its key components, including siting and project design alternatives to avoid areas of biodiversity value, opportunities for shared infrastructure with proposed developments in the region, and the consequences of not carrying out the development; and | Refer to **Section 2.4** |
| – 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. | Refer to **Section 2.3** |
| > Provide the estimated development cost (EDC) of the development prepared in accordance with the relevant | Provided with the application |

| | Details | Section of EIS where issue addressed |
|---|---|---|
| | planning circular using the Standard Form of EDC Report. | |
| | > Provide an estimate of the retained and new jobs that would be created during the construction and operational phases of the development, including details of the methodology to determine the figures provided. | Refer to **Section 3.3.1** |
| | > The development application must be accompanied by: | |
| | – the consent of the owner/s of the land (as required in Section 23(1) of the EP&A Regulation); and | Provided with the application |
| | – a declaration from a Registered Environmental Assessment Practitioner that the EIS includes the information specified in the Department's *Registered Environmental Assessment Practitioner Guidelines*. | Refer to **Certification** |
| **Key Issues** | > **Biodiversity** – including:<br>– an assessment of the biodiversity values and the likely biodiversity impacts of the project in accordance with Section 7.9 of *the Biodiversity Conservation Act 2016* (NSW) (BC Act), the *Biodiversity Assessment Method* (BAM) 2020 and documented in a Biodiversity Development Assessment Report (BDAR).<br>– The BDAR must:<br>• be prepared using the approved BDAR template;<br>• document the application of the avoid, minimise and offset framework including assessing all direct, indirect and prescribed impacts in accordance with the BAM;<br>• assess the impacts associated with all ancillary infrastructure, including the transport route road upgrades;<br>• include an assessment for serious and irreversible impacts (SAII) in accordance with Section 9.1 of the BAM; and<br>• include a strategy to offset any residual impacts of the development in accordance with the BC Act, unless BCS and DPHI determine the proposed development is not likely to have any significant impacts on biodiversity values;<br>– an assessment of the likely impacts on listed aquatic threatened species, populations or ecological | Refer to **Section 6.1** |

| | Details | Section of EIS where issue addressed |
|---|---|---|
| | communities, scheduled under the *Fisheries Management Act 1994*, and a description of the measures to minimise and rehabilitate impacts;<br>– a cumulative impact assessment of biodiversity values in the region from nearby developments; and - if an offset is required, details of the measures proposed to address the offset obligation. | |
| | > **Heritage** – including:<br>– an assessment of the impact (including impacts from proposed road upgrades) 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);<br>– 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<br>– assess the impact to historic heritage having regard to the *NSW Heritage Manual*. | Refer to **Section 6.2** and **Section 6.3** |
| | > **Land** – including:<br>– 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, land contamination, permissibility, strategic context and existing site constraints;<br>– an assessment of the potential impacts of the development on existing land uses on the site and adjacent land, including:<br>• agricultural land, flood prone land, nearby drinking water catchments , Crown lands, mining, quarries, mineral or petroleum rights (if relevant);<br>• a soil survey to determine the soil characteristics and consider the potential for salinity, acid sulfate soils and erosion to occur; and | Refer to **Section 6.4** |

| | Details | Section of EIS where issue addressed |
|---|---|---|
| | • a cumulative impact assessment of nearby developments;<br>– an assessment of the compatibility of the development with existing land uses, during construction, operation and after decommissioning, including:<br>• consideration of the zoning provisions applying to the land, including subdivision (if required);<br>• completion of a Land Use Conflict Risk Assessment in accordance with the Department of Industry's *Land Use Conflict Risk Assessment Guide*. | |
| | > **Visual** – including a detailed assessment of the likely visual impacts (including night lighting) of all components of the project (including transmission lines, substations and any other ancillary infrastructure) on surrounding residences (including approved developments, lodged development applications and dwelling entitlements) and key locations, scenic or significant vistas and road corridors in the public domain and provide details of measures to mitigate and/or manage potential impacts. | Refer to **Section 6.5** |
| | > **Noise** – including an assessment of the construction noise impacts (including impacts from proposed road upgrades) of the development in accordance with *the Interim Construction Noise Guideline* (ICNG), operational noise impacts in accordance with the *NSW Noise Policy 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 | Refer to **Section 6.6** |
| | > **Transport** – including:<br>– an assessment of the peak and average traffic generation, including over-dimensional vehicles/ heavy vehicles requiring escort and construction worker transportation;<br>– an assessment of the likely transport impacts to the site access route(s), including over-dimensional vehicles/ heavy vehicles requiring escort, site access point(s), any Crown land, particularly in relation to the capacity and condition of the roads, road safety and intersection performance; | Refer to **Section 6.7** |

| | Details | Section of EIS where issue addressed |
|---|---|---|
| | – a cumulative impact assessment of traffic from nearby developments;<br>– 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 authorities | |
| | > **Water** – including:<br>– an assessment of the likely impacts of the development (including flooding) on surrounding watercourses (including their Strahler Stream Order) and groundwater resources and measures proposed to monitor, reduce and mitigate these impacts including water management issues;<br>– a site water balance for the development;<br>– details of water requirements and supply arrangements for construction and operation;<br>– assessment of the impacts of the development, including any changes to flood risk and overland flows on-site or off-site, and detail design solutions and operational procedures to mitigate flood risk where required;<br>– 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);<br>– assessing the impacts of the development, including any changes to flood risk and overland flows on-site or off-site, and detail design solutions and operational procedures to mitigate flood risk where required; and<br>– where the project involves works within 40 metres of any river, lake or wetlands (collectively waterfront land), identify likely impacts to the waterfront land, and how the activities are to be designed and implemented in accordance with the DPI *Guidelines for Controlled Activities on Waterfront Land* (2018) and (if necessary) *Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (DPI 2003), and *Policy & Guidelines for Fish Habitat Conservation & Management* (DPE, 2013). | Refer to **Section 6.8** |

| | Details | Section of EIS where issue addressed |
|---|---|---|
| | > **Hazards** – including:<br>– a preliminary risk screening completed in accordance with the *State Environmental Planning Policy (Resilience and Hazards) 2021*;<br>– a Preliminary Hazard Analysis (PHA) prepared in accordance with *Hazardous Industry Planning Advisory Paper No. 6 – Guideline for Hazard Analysis* (DoP, 2011) 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). The PHA must also consider the location of the BESS and verify the cumulative impact on surrounding land uses; and<br>– *Health* - an assessment of potential hazards and risks including but not limited to fires, 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*; and<br>– *Bushfire* – identify potential hazards and risks associated with bushfires / use of bushfire prone land including the risks that a BESS would cause bush fire and demonstrate compliance with the RFS *Planning for Bush Fire Protection 2019* | Refer to **Section 6.9, Section 6.10** and **Section 6.11** |
| | > **Social** – including an assessment of the social impacts in accordance or benefits of the project for the region and the State as a whole in accordance with the *Social Impact Assessment Guideline* (DPE, 2023), including consideration of any increase in demand for community infrastructure services and consideration of construction workforce accommodation. | Refer to **Section 6.13** |
| | > **Economic** – including an assessment of the economic impacts or benefits of the project for the region and the State as a whole and provide details of any proposed voluntary benefit sharing programs. | Refer to **Section 6.14** |
| | > **Waste** – including a waste management assessment or plan (as appropriate) to identify, quantify and classify the likely waste stream to be generated throughout all stages of the project, and describe the measures to be | Refer to **Section 6.12** |

| | Details | Section of EIS where issue addressed |
|---|---|---|
| | implemented to reduce waste generation, manage, reuse, recycle and safely dispose of this waste, and an assessment of sewerage (if required). | |
| **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.<br>In addition, the EIS must include high quality files of maps and figures of the subject site and proposal. | This EIS |
| | The assessment of the key issues listed above must take into account relevant guidelines, policies, and plans as identified.<br>A list of some of the legislation, policies and guidelines that may be relevant to the assessment of the project can be found at:<br>> https://www.planning.nsw.gov.au/Policy-and-Legislation/Planning-reforms/Rapid-Assessment-Framework/Improving-assessment-guidance<br>> https://www.planningportal.nsw.gov.au/major-projects/assessment/policies-and-guidelines; and<br>> http://www.environment.gov.au/epbc/publications#assessments | Refer to **Section 4** |
| **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.<br>In particular, you must undertake detailed consultation with affected landowners surrounding the development, relevant government agencies and the relevant local Council(s).<br>The EIS must:<br>> detail how engagement undertaken was consistent with the Undertaking Engagement Guidelines for State Significant Projects (DPIE, 2022); and<br>> 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 0** |
| **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 | The development application is submitted within |

| | Details | Section of EIS where issue addressed |
|---|---|---|
| | SEARs will be required, please consult with the Planning Secretary 3 months prior to the expiry date | two years of the SEARs issue date. |

# APPENDIX C

## DETAILED MAPS AND PLANS

# APPENDIX D

## STATUTORY COMPLIANCE TABLE

Table 14 - Commonwealth Legislation

| Statutory Reference | Pre-Condition | Relevance | Section in EIS |
|---|---|---|---|
| *Environment Protection and Biodiversity Conservation Act 1999* | Direct or indirect impacts to a Matter of National Environmental Significance (MNES) | The study area is unlikely to be important habitat for EPBC Act listed species, therefore the BDAR states that an EPBC referral to the Commonwealth minister for the environment is not recommended. | **Section 6.1** |
| *Native Title Act 1993* | Objective of the Act is to recognise and protect Native Title. | No sites listed on the Native Title register are impacted by the project | **N/A** |

Table 15 - NSW Legislation

| Statutory Reference | Section/Clause | Pre-Condition | Relevance | Section in EIS |
|---|---|---|---|---|
| *Aboriginal Land Rights Act 1983* | Section 36 | The NSW Aboriginal Land Council may make a claim for land on its own behalf or on behalf of one or more Local Aboriginal Land Council. | No impacts to land the subject of an Aboriginal land claim as a result of the project | **N/A** |
| *Biodiversity Conservation Act 2016* | Section 7.9 | Any SSD or SSI application is required to be accompanied by a BDAR unless the Planning and Environment Agency Heads determine that the proposed development is not likely to have any significant impact on biodiversity values. | The proposed development is SSD and has not been assessed by the Planning and Environment Agency Heads. A BDAR is required. | **Section 6.1** |

| | | | | |
|---|---|---|---|---|
| *Contaminated Land Management Act 1997* | Section 11 | The EPA may declare any land it believes to significantly contaminated as significantly contaminated land. | A PSI has been completed which concluded that the development site is suitable in its current state for the proposed purpose. | **Section 6.9** |
| *Electricity Infrastructure Investment Act 2020* | Section 19 | The Minister may declare a renewable energy zone (REZ) by reference to a specified geographical area of the State and a specified generation, storage or network infrastructure (including planned or existing infrastructure). | The development site is not within a REZ. | **N/A** |
| *Environmental Planning and Assessment Act 1979* | Section 1.3 | Objects of the Act | The proposed development is consistent with each of the Objects of the Act, with the exception of Object (d) which relates to the delivery and maintenance of affordable housing which is not relevant to this proposal. | **N/A** |
| | Section 4.15(1) | Consideration of the relevant provisions of any environmental planning instruments | > *State Environmental Planning Policy (Resilience and Hazards) 2021;*<br>> *State Environmental Planning Policy (Transport and Infrastructure) 2021;*<br>> *State Environmental Planning Policy (Planning Systems) 2021;*<br>> *State Environmental Planning Policy (Biodiversity and Conservation) 2021; and*<br>> *Leeton Local Environmental Plan 2014.* | **Section 4** |

| | | | | |
|---|---|---|---|---|
| | | Consideration of the relevant provisions of any proposed environmental planning instruments | No draft environmental planning instruments apply. | **N/A** |
| | | Consideration of the relevant provisions of any development control plans | Development control plans do not apply to SSD by way of clause 2.10 of the Planning Systems SEPP. | **N/A** |
| | | Consideration of the relevant provisions of any planning agreements or draft planning agreements | No planning agreements or draft planning agreements apply. | **N/A** |
| | | Consideration of the relevant provisions of the regulations | Refer next section of this table | **This table** |
| | | Consideration of the likely impacts of the development | | **Section 6** |
| | | Consideration of the suitability of the site for the development | | **Section 7.10** |
| | | Consideration of any submissions made in accordance with this Act or the regulations | The proponent will be required to prepare a Submissions Report in accordance with Appendix C to the SSD Guidelines following the completion of the mandatory public exhibition period. | **N/A** |
| | | Consideration of the public interest | | **Section 7.8** |
| *Environmental Planning and Assessment Regulation 2021* | Section 23 | Requires the consent of all landowners to be obtained for the making of a Development Application. | | **Attached to the EIS submission** |
| *Environmental Planning and* | Clause 192 | (1) An environmental impact statement must contain the following— | | |

| | | | | |
|---|---|---|---|---|
| *Assessment Regulation 2021* | | (a) a summary of the environmental impact statement, | | **Executive Summary** |
| | | (b) a statement of the objectives of the development, activity or infrastructure, | | **Section 1** |
| | | (c) an analysis of feasible alternatives to the carrying out of the development, activity or infrastructure, considering its objectives, including the consequences of not carrying out the development, activity or infrastructure, | | **Section 2.4** |
| | | (d) an analysis of the development, activity or infrastructure, including— | | |
| | | (i) a full description of the development, activity or infrastructure, and | | **Section 2.5** |
| | | (ii) a general description of the environment likely to be affected by the development, activity or infrastructure and a detailed description of the aspects of the environment that are likely to be significantly affected, and | | **Section 2.1** |
| | | (iii) the likely impact on the environment of the development, activity or infrastructure, and | | **Section 6** |
| | | (iv) a full description of the measures to mitigate adverse effects of the development, activity or infrastructure on the environment, and | | Throughout **Section 6** and summarised in **Appendix E** |
| | | (v) a list of the approvals that must be obtained under another Act or law before | | **This table** |

| | | | | |
|---|---|---|---|---|
| | | the development, activity or infrastructure may lawfully be carried out, | | |
| | | (e) a compilation, in a single section of the environmental impact statement, of the measures referred to in paragraph (d)(iv), | | **Appendix E** |
| | | (f) the reasons justifying the carrying out of the development, activity or infrastructure, considering biophysical, economic and social factors, including the principles of ecologically sustainable development set out in section 193. | | **Section 7** |
| *Heritage Act 1977* | Section 58 | Approval in respect of the doing or carrying out of an act, matter or thing referred to in s 57(1) | No interim heritage order/s or listing/s apply to the site under the State Heritage Register. The proponent will develop a Chance Finds Protocol following receipt of development consent in consultation with Heritage NSW. | **Sections 6.2** and **6.3** |
| *Local Land Services Act 2013* | | | There will be no impact to the TSRs adjoining the development site.<br>Clearing of native vegetation is dealt with within this application. | N/A |
| *National Parks and Wildlife Act 1974* | Section 90 | Grant of Aboriginal heritage impact permit | The results of the ACHAR indicate that impacts to Aboriginal cultural heritage values are unlikely. | **Section 6.2** |
| *Protection of the Environment Operations Act 1997* | Sections 43(a), 43(b), 43(d), 47, 55 and 122 | Various environmental protection licences | The proposed Yanco BESS is not considered to comprise a scheduled activity under the POEO Act. | N/A |

| | | | | |
|---|---|---|---|---|
| *Roads Act 1993* | Section 138 | Various activities within road reserves | The project will utilise the existing access to Hume Road. Road upgrades are anticipated to Hume Road/Houghton Road intersection and Houghton Road/Irrigation Way intersection. Approval is required under the Roads Act. | **Section 6.7** |
| *Water Management Act 2000* | Sections 89, 90 and 91 | Water use approval, water management work approval or activity approval under Part 3 of Chapter 3 | Dewatering activities during construction of footings may be required. If works are necessary, approval under the Water Management Act 2000 will be required. | **Section 6.8** |

# APPENDIX E

## MITIGATION MEASURES

# MITIGATION MEASURES

## Summary of Mitigation Measures

**Table 16** provides a summary of proposed mitigation measures recommended through this EIS.

**Table 16 – Summary of Mitigation Measures for the Yanco BESS**

| Impact | Phase | Mitigation Measures |
|---|---|---|
| Biodiversity | Construction | To compensate for impacts on native vegetation, eight ecosystem credits of PCT 74 and one ecosystem credit for PCT 26 are required.<br>> Avoid and minimise clearing impacts to native vegetation where possible.<br>> Clearly delineate the boundaries of the project footprint to prevent any unnecessary clearing beyond its extent. This includes the installation of appropriate fencing along the eastern extent of the Subject Land. Fencing should prohibit entry into the retained vegetation area and minimise indirect impacts during construction such as the movement of dust and rubbish into the forest and wetland.<br>> Ensure vehicle and equipment parking areas and stockpile areas are identified and positioned to avoid areas containing ecological value. Stockpiling must not occur within, or in proximity (5m) to, areas of native vegetation retained under the proposed development.<br>> Appropriate signage such as 'no go zone' or 'environmental protection area' should be installed surrounding the area of retained native vegetation and wetlands.<br>> Clearly identify and communicate the location of any 'no go zones' in site inductions.<br>> Tree protection measures will be implemented to protect retained trees surrounding the Subject Land. Tree protection measures should consider allowances for Tree Protection Zones in accordance with AS4970 (Standards Australia, 2009).<br>> Limit removal of trees to that required within the project footprint where possible.<br>> Pre-clearance surveys will be undertaken to determine if any inhabiting fauna, or habitat features (i.e. nests or hollows) are present 24 hours prior to clearing.<br>> A staged approach is required to the removal of vegetation (trees and shrubs) to minimise the potential for impacts to fauna by providing them with an opportunity to vacate hollows and relocate naturally.<br>> Avoid clearing vegetation during the breeding season of threatened fauna species, such as the Superb Parrot (spring/ early summer). |

| Impact | Phase | Mitigation Measures |
|---|---|---|
| | | > Ensure a licensed wildlife carer and/or ecologist is present during vegetation clearing/habitat removal.<br>> Source controls such as sediment fences, mulching and jute matting will be utilized where appropriate, especially along the eastern boundary of the proposed development area that runs adjacent to a first-order stream.<br>> Site-based vehicles will carry spill kits.<br>> Erosion and sediment control will be required for the development in accordance with Managing Urban Stormwater: Soils and Construction (Landcom, 2004) prior to commencement of construction.<br>> Limit the use of pesticides in the project footprint where possible to avoid contamination of nearby watercourses/wetland areas.<br>> Speed limits within the Subject Land should be limited to 40 km/hr.<br>> This limit should be clearly signed at all entry points to site.<br>> The Subject Land should be separated from vegetated areas throughout the construction and operational phases of the development. This separation should be achieved through physical barriers including fencing and appropriate signage.<br>> The fungal pathogens Phytophora cinnamomi and Myrtle Rust (Puccinia psidii) are likely to occur within the LGA, however, it is unknown if they occur within the Subject Land. These pathogens can have devastating impacts on native plant communities and inhabiting fauna if not properly managed.<br>> Appropriate washdown facilities will be available to clean vehicles and equipment prior to arrival on-site and prior to departure.<br>> Ensure soil and seed material is not transferred<br>> Increased human activity (from workers and traffic levels) directly adjacent to sensitive habitat areas may cause disturbance to flora and fauna species in adjoining habitat.<br>> Impacts from construction and operational activities, such as disturbance to an animal's normal behaviour patterns due to noise, vibration, lighting or dust may cause areas of previously suitable habitat to become sub-optimal and may cause fauna species to vacate areas of previously suitable habitat.<br>> Measures to mitigate impacts on flora and fauna from noise, vibration, waste, light and air pollution such as:<br>– Restriction of public access and associated impacts from domestic pets, waste dumping and damage to adjoining vegetation must be enforced pre, during and post construction.<br>– Fence sensitive areas to delineate 'no go' zones. |

| Impact | Phase | Mitigation Measures |
|---|---|---|
| | | – Levels of lighting associated with the proposed development (during construction and operation) will be reduced to a minimal level and directed away from retained vegetation areas to reduce any adverse effects upon the essential behavioural patterns of light-sensitive fauna. Lighting design and utilization during construction and operational phases of the development should be based on principles detailed in Appendix A of the National Light Pollution Guidelines for Wildlife (DEE 2020). This includes consideration of adaptive controls, and measures to reduce light intensity and inappropriate light spill into retained vegetation and fauna habitat.<br>– Lighting should also comply with Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting.<br>– Noise minimization practices in accordance with standard practises.<br>– Dust control measures such as covering loads where required; amending operations under excessive wind conditions including ceasing operations if required; use of water tankers as required, to control dust; rehabilitation through vegetation of surfaces to be left unsealed; and truck wheel washes or other dust removal measures. |
| Aboriginal heritage | Construction | > A proposed 10m buffer is to be implemented around the previously identified AHIMS #49-5-0211 site so as to avoid any impacts to this item.<br>> Prior to works commencing a Chance Finds Protocol (CFP) is to be developed for the site. The CFP must include the procedure and management of unexpected finds relevant to Aboriginal cultural heritage.<br>> The CFP must include procedures for:<br>– notifying Heritage NSW, a heritage consultant and RAPs or the Local Aboriginal Land Council (LALC) where unexpected finds are identified.<br>– If suspected human remains are located during any stage of the proposed works, work must stop immediately, and the NSW Police notified. An Archaeologist or Physical Anthropologist should be contacted in the first instance where there is uncertainty whether the remains are human.<br>> All impacts must remain within the assessed study area or further archaeological investigation may be required. |
| Historic heritage | Construction | > If any object having interest due to its age or association with the past is uncovered during the course of work:<br>– All work must stop immediately in that area. |

| Impact | Phase | Mitigation Measures |
|---|---|---|
| | | – Work may recommence in the affected area(s) if Heritage NSW advises that additional assessment and/or approval is not required (or once any required assessment has taken place or any required approval has been given).<br>– In accordance with the Heritage Act 1997, the Heritage NSW must be advised of the discovery. |
| Land | Throughout | > Compliance with mitigation measures specified in the EIS is anticipated to reduce the risk of land use conflicts.<br>> The reversibility of the project would allow the site to be returned to its existing land use, therefore minimising potential for long term conflict and impacts to future agricultural activities.<br>> Compliance with the following crime management measures is anticipated to reduce the risk of conflict related to the increased risk of vandalism and theft for surrounding residents:<br>– Maintenance of the existing key access point to ensure the delineation between private and public is clear;<br>– Existing boundary fencing is to be maintained and/or installed to ensure site access is controlled;<br>– Appropriate signage should be installed;<br>– Landscaping is to be maintained to remove opportunities for concealment.<br>> Ongoing consultation with stakeholders will identify and address concerns if they arise.<br>> Implement all measures specified in management plans identified in the EIS and/or consent conditions (if approved). |
| Visual | Construction | > Noise walls and buildings to be painted a colour that blends with the local landscape (such as Colorbond Cottage Green, Woodland grey, Pale Eucalypt or similar) to reduce their prominence of these structures in views to the proposal. |
| | Throughout | > Lighting during construction and operation would be designed and operated in accordance with AS4282-2019 Control of the obtrusive effects of outdoor lighting. |
| Noise | Construction | > Noise barriers are proposed as shown in Figure 4 of the NIA. 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.<br>> The southern noise barrier is approximately 388 m length and 4.5 m in height, the barrier also has been modelled to include 150 mm gap between the ground and bottom of the barrier. (Barrier construction to allow for flood design). |

| Impact | Phase | Mitigation Measures |
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| | | > Southern acoustic barrier are to be constructed such that there is a 10 m spacing between the acoustic barriers and bass equipment to allow for fire safety.<br>> The barriers around the large scale 175 MVA transformers are 4 m in height. The barrier may be open on the northern face<br>> Placement of the MVPS equipment as discussed in ACEnergy, MVPS front face of all units to be facing north to help with directionality or loudest side away from closest sensitive receivers<br>> Similarly, placement of BESS equipment as discussed with ACEnergy, BESS front side (loudest) facing towards the north for all BESS units to help with the noise directionality away from closest sensitive receivers to the south |
| Transport, traffic and access | Construction | > Update the subject site plan to include a designated parking area to satisfy the parking demand of 25 vehicles during the development's construction phase.<br>> The intersection of Irrigation Way and Houghton Road should be upgraded in accordance with the prepared Strategic Design plan.<br>> The intersection of Houghton Road, Hume Road and the subject site access should be upgraded in accordance with the prepared Functional Layout plan.<br>> Implement a traffic management plan to ensure no heavy vehicles arrive and depart simultaneously along Houghton Road. |
| Water | | > Self-bunded battery storage units<br>> Self-bunded fuel storage areas<br>> Regular maintenance and inspection of fuel bund, oil bund and battery storage units<br>> Development of site management plans that detail responses to leaks such as spill kits, removal and appropriate testing and disposal of impacted soils and options for installing groundwater monitoring bores in the case of a significant fire or unexpected leak.<br>> Any sensitive infrastructure such as inverters and battery storage etc, should be located 450mm above finished ground level. This would ensure infrastructure is located above the 1% AEP flood level with a minimum of 230mm freeboard.<br>> The footings should be designed to withstand the flood velocities described in this report, which are mostly low within the Site.<br>> It is recommended that best practice principles to stormwater and sediment control be incorporated into the design, construction and operation phases of the BESS site. |

| Impact | Phase | Mitigation Measures |
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| | | > It is anticipated that vehicles can safely access and egress from the Site, however consideration should be given to not restrict the movement of emergency vehicles on Houghton Road with any scheduled roadworks associated with construction |
| Hazards | Construction | > End-to-end spacing (short side) of BESS containerised units shall be a minimum of 3 m<br>> Back-to-back spacing (long side) of BESS containerised units shall be a minimum of 3 m<br>> Distance from electrical compartment surface to the wall of other containers 1.1 m.<br>> Spacing between BESS container accumulations (i.e. 4 containerised units) shall be a minimum of 3 m.<br>> The BESS containerised units shall be provided with the fire protection system specified by the BESS manufacturer.<br>> Prior to construction, the total area required for the BESS units shall be verified against the available space to demonstrate there is adequate area to achieve the required spacing.<br>> The vents shall not be located above battery packs within the BESS container.<br>> The vent covers of the BESS shall be constructed of non-combustible material.<br>> Prior to commissioning, the UL test data for the selected battery units shall be made available to the DPHI. |
| Bushfire | Throughout | > Asset Protection zone (APZ) buffers will be a minimum 10m width provided around project-related infrastructure and to the outer perimeter (vegetation screen and south wall define limit). Temporary construction and laydown areas, site access and associated fencing do not require specific APZ.<br>> APZ to be managed as Inner Protection Area (IPA) for the life of development. The following vegetation management requirements apply in the APZ:<br>– Trees (there would be no trees within the APZ).<br>– Shrubs (there would be no shrubs within the APZ).<br>– Grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and leaves and vegetation debris should be removed.<br>– Roads and paved/cleared areas are suitable within the APZ<br>> Landscape maintenance includes APZ around infrastructure, the proposed vegetation screening and land management across the surrounding Project area to reduce fire intensity and rate of spread as it may approach a structure or structures.<br>– APZ management to maintain fuel loads as required as per Section 5.2 of this report. |

| Impact | Phase | Mitigation Measures |
|---|---|---|
| | | – Vegetation screening greater than 10m from infrastructure (APZ), maintained to remove dead/dry vegetation and fuel build-up.<br>– The vegetation screens will be managed under a landscape or vegetation management plan so that they are managed in perpetuity as a low threat and do not increase the threat toward the structures.<br>– Landscape management requires ongoing monitoring and maintenance.<br>– Bushfire fuel management surrounding development can be achieved in ongoing agricultural practices such as grazing, cropping, slashing etc.<br>– A BEMOP to guide landscape and APZ management, monitor and manage potential fuel loads surrounding the Project area.<br>> The noise wall design and material will be non-combustible outer layer (e.g. sheet metal or cementitious layer) front and back and a fire-retardant core, and not increase the risk of fire toward the BESS infrastructure.<br>> On-site water supply (minimum 10,000L) to be strategically positioned, as per Fire Safety Study specifications.<br>– Water supply to be accessible and have appropriate firefighting appliance connections.<br>– Water supplies to be detailed in a Bushfire and Emergency Management Operation Plan (BEMOP) or similar planning strategy.<br>> Main access, internal roads and alternate egress provide for safe, reliable, and unobstructed passage by a Cat 1 firefighting vehicle as per Section 5.5 of this report and maintained for the life of the development.<br>> The width and capacity of the access provides for safe, reliable, and unobstructed passage by a Cat 1 firefighting vehicle within acceptable operational limits:<br>– The trafficable surface has a minimum width of 4m.<br>– The access has a minimum 4m height clearance overhead, free from any obstructions.<br>– Curves inner radius 6m.<br>– Crossfall less than 6 degrees.<br>– Surfaces and crossing structures are capable of carrying vehicles with a gross vehicle mass of 15 tonnes and an axle load of 9 tonnes.<br>– Turnaround provisions of 12m radius or T junction at the termination of each access track and in position of any dedicated water supply tanks. |

| Impact | Phase | Mitigation Measures |
|---|---|---|
| | | – All access will be detailed in the BEMOP<br>> A BEMOP should be prepared to support emergency management for the Project and ensure bushfire protection actions are maintained. The Plan should be developed in consultation with the local NSW RFS District Office and the Emergency Management Plan and be communicated to relevant stakeholders.<br>> A BEMOP will guide annual monitoring of the fire mitigation works for the Project operations and surrounding landholding:<br>– APZ and landscape fuel load management.<br>– Access provisions.<br>– Water supplies.<br>> Emergency Response in coordination with the Fire Safety Study and Emergency Management Plan. |
| Waste | Throughout | > A Waste Management Plan for all phases of the project would be prepared and implemented prior to the commencement of any works on the site. |
| Social | Throughout | > Target local economic benefits through procurement of local goods and services.<br>> Track and report on local content used for the project.<br>> Prioritise hiring local workers with requisite skills and experience.<br>> Use online and offline methods to share and register interest in project opportunities.<br>> Engage regularly with local businesses about construction periods and potential increases in trade.<br>> Encourage project workforce to support local businesses through local spending initiatives (e.g., vouchers).<br>> Develop and implement an Industry Participation Plan addressing:<br>– Opportunities for supply of goods and services, employment, training (including Aboriginal participation), and sustainable procurement.<br>– Metrics to track goals for each opportunity.<br>– Engagement with Leeton Shire Council, local businesses, and the Leeton Chamber of Commerce to understand procurement limitations and aspirations.<br>> Partner with LGAs and organisations to inform prospective workers about participation in the project.<br>> Use a project-specific website and existing LGA communication channels.<br>> Collaborate with local employment, apprenticeship, and training providers to enhance local hiring potential. |

| Impact | Phase | Mitigation Measures |
|---|---|---|
| | | > Develop and implement local content initiatives with procurement goals for the operation phase.<br>> Identify community funding opportunities.<br>> Engage in community involvement initiatives, potentially in partnership with nearby renewable energy SSD proponents.<br>> Promote and use the Community Stakeholder Engagement Plan (CSEP) to continue collaborating with stakeholders and the community to identify opportunities.<br>> Maintain ongoing communication with local residents throughout the project to ensure transparency and during work that produces impulsive, intermittent, or low-frequency noise, regular consultation with sensitive receptors is advised.<br>> Staff training on noise management is recommended.<br>> Shuttle bus service - organising shuttle buses from Griffith and Narrandera for a portion of the workforce. This will reduce the demand for local accommodation and help mitigate worker travel fatigue.<br>> Accommodation provider coordination - continue discussions with accommodation providers, ensuring proactive planning to secure availability in Yanco, however unlikely this may be due to accommodation stock levels.<br>> Maintain ongoing dialogue with the Yanco Solar Farm team and accommodation suppliers to address potential cumulative impacts and ensure coordination and if possible sequencing of workforce.<br>> Develop an Accommodation, Employment, and Procurement Strategy/Plan to support local businesses in becoming competitive and sustainably servicing the construction workforce over the 8-month project period.<br>> Designed and operated in accordance with AS4282-2019 to minimise obtrusive effects.<br>> Noise walls and buildings will be painted in colours that blend with the local landscape. |
| Economic | | > Prepare AES incorporating ongoing liaison with local industry representatives to ensure the maximisation of the use of local contractors, manufacturing facilities, materials.<br>> Liaison with local representatives regarding accommodation options for staff, to minimise adverse impacts on local services.<br>> Liaison with local tourism industry representatives to manage potential timing conflicts with local events<br>> ACEnergy or the developer will consult with local employment agencies and training organisations and, where practicable, will consider supporting training and apprenticeships. |

| Impact | Phase | Mitigation Measures |
|---|---|---|
| Cumulative | | > Maintain ongoing dialogue with surrounding renewable developers and accommodation suppliers to address potential cumulative impacts and ensure coordination and if possible sequencing of workforce. |

# APPENDIX F

## BIODIVERSITY DEVELOPMENT ASSESSMENT REPORT

# APPENDIX G

## ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT

# APPENDIX H

## LAND USE CONFLICT RISK ASSESSMENT

# APPENDIX I

## AGRICULTURAL LAND UTILITY ASSESSMENT

# APPENDIX J

## VISUAL IMPACT ASSESSMENT

# APPENDIX K

## NOISE IMPACT ASSESSMENT

# APPENDIX L

## TRAFFIC IMPACT ASSESSMENT

# APPENDIX M

## FLOOD ASSESSMENT

# APPENDIX N

## PRELIMINARY SITE INVESTIGATION

# APPENDIX O

## PRELIMINARY HAZARD ASSESSMENT

# APPENDIX P

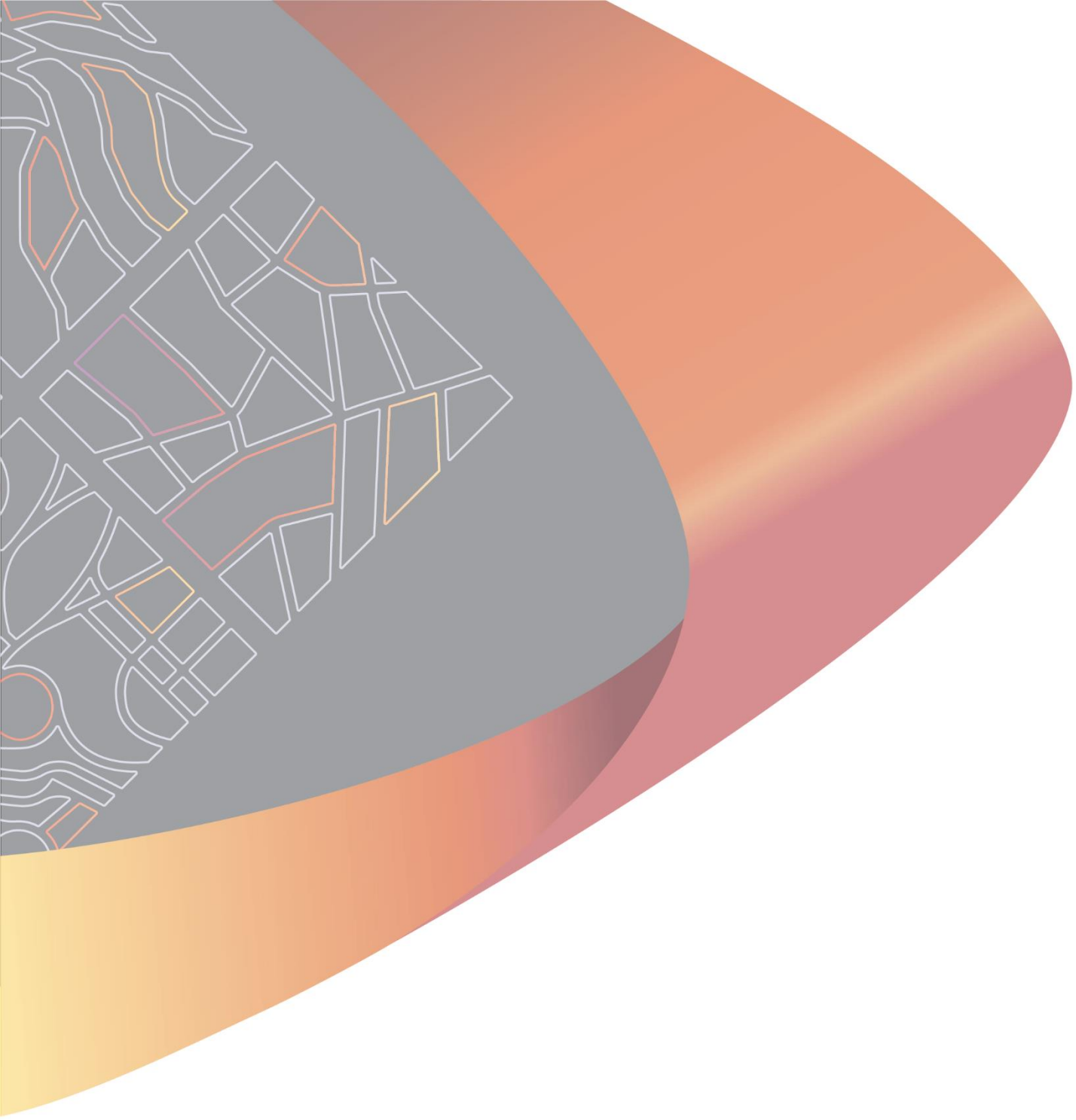
## BUSHFIRE ASSESSMENT

# APPENDIX Q

## SOCIAL IMPACT ASSESSMENT

# APPENDIX R

## LAND TITLES



Premise