

Firm Power

Kangaroo Valley Battery Energy Storage System

SCOPING REPORT

Job No: P001431

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Premise

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ABBREVIATIONS

ABS	Australian Bureau of Statistics
ACHA	Aboriginal cultural heritage assessment
AHIMS	Aboriginal Heritage Information Management System
Applying Guideline	SEPP 33 <i>Hazardous and Offensive Development Application Guidelines – Applying SEPP 33</i>
ADG	Australian Dangerous Goods
BDAR	Biodiversity development assessment report
BESS	Battery Energy Storage System
Biodiversity SEPP	<i>State Environmental Planning Policy (Biodiversity and Conservation) 2021</i>
CEMP	Construction environmental management plan
Council	Shoalhaven City Council
DA	Development application
Cwth DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water
NSW DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water
DHPI	Department of Housing, Planning and Infrastructure (formally DPE)
DPE	Department of Planning and Environment (formally DPIE)
DPIE	Department of Planning, Industry and Environment
EDC	Estimated cost of development
EIS	Environmental Impact Statement
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulations	<i>Environmental Planning and Assessment Regulation 2021</i>
Framework	<i>NSW Climate Change Policy Framework</i>
FTE	<i>Full time equivalent</i>
ha	Hectares
Hazards SEPP	<i>State Environmental Planning Policy (Resilience and Hazards) 2021</i>
Infrastructure SEPP	<i>State Environmental Planning Policy (Transport and Infrastructure) 2021</i>
km	Kilometres

kV	Kilovolt
LEP	<i>Shoalhaven Local Environmental Plan 2014</i>
LGA	Local Government Area
LSPS	Local strategic planning statement
m	Metres
MNES	Matters of national environmental significance
MW	Megawatt
MWh	Megawatt per hour
MVPS	Modular voltage power system
Native Title Act	<i>Commonwealth Native Title Act 1993</i>
Net Zero Plan	Net Zero Plan Stage 1: 2020-2030
NSW	New South Wales
NSW 2021 Plan	NSW 2021: A Plan to Make NSW Number One
O&M	Operation & Maintenance
PHA	Preliminary hazard analysis
PMST	Protected Matters Search Tool
Policy Framework	Renewable Energy Policy Framework
RAPs	Registered Aboriginal Parties
REAP	NSW Renewable Energy Action Plan
Regional Plan	Illawarra Shoalhaven Regional Plan 2041
REZ	Renewable Energy Zone
Roadmap	NSW Electricity Infrastructure Roadmap
RNE	Register of the National Estate
Safeguard	Energy Security Safeguard
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SHI	State Heritage Inventory
SHR	State Heritage Register
SSD	State significant development
SSDA	State significant development application

SSD Guidelines	<i>State significant development guidelines – preparing a scoping report</i>
Strategy	NSW Electricity Strategy 2019
Systems SEPP	<i>State Environmental Planning Policy (Planning Systems) 2021</i>

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1. INTRODUCTION

1.1 Overview

Firm Power Pty Ltd (Firm Power; the Applicant) are proposing to develop an up to 400 Megawatt (MW), 1,600 Megawatt hour (MWh) Battery Energy Storage System (BESS) at 325 Bendeela Road, Kangaroo Valley, NSW 2577, Lot 10 DP1183451.

The development site for the project will consist of the BESS infrastructure together with connecting transmission infrastructure and any required road or access upgrades. The development site would consist of an area of approximately 15 hectares (ha) hosting BESS infrastructure in the southern extent of the host lot, together with transmission connections and access treatments. Access to the development site would be provided using Old Bendeela Road via Bendeela Road in the north. Subject to final design and agreement with Transgrid, a proposed transmission easement would connect the BESS to the nearby Kangaroo Valley substation. The alignment of this transmission line would either adopt the existing overhead transmission line via Lot 11 DP1183451, the road reserve of Bendeela Road, Lot 5 DP1129355, Lot 165 DP751262, Lot 1 DP545735 and Lot 3 DP1129356, or would adopt a parallel alignment to the current transmission line. The area necessary to accommodate both connection options is contained within the development site boundary.

The development site is located in the Shoalhaven City Council (Council) Local Government Area (LGA) and is not situated within a Renewable Energy Zone (REZ). The project is to be known as the 'Kangaroo Valley BESS' and includes the following:

- > Installation of containerised batteries with a capacity of up to 400 MW, with associated power conversion systems, switchgear and a control building;
- > An overhead transmission line to connect the BESS to the Transgrid Kangaroo Valley Substation, located to the north-west of the development site;
- > Cabling and collector units, site office, storage area, internal access tracks, on-site parking, security fencing, switching station, and temporary construction laydown area; and
- > Utilisation of existing site access arrangements via Old Bendeela Road, subject to upgrade.

The proposed BESS, associated infrastructure and overall development footprint will align with, and be contained within the development site. A conceptual layout of the BESS and associated infrastructure will be detailed in the Environmental Impact Statement (EIS) for the project.

This scoping report has been prepared by Premise Australia Pty Ltd (Premise) to support a request to the Department of Housing, Planning and Infrastructure (DHPI) for the Secretary's Environmental Assessment Requirements (SEARs). The SEARs will inform preparation of an EIS submitted under Part 4 of the *Environmental Planning and Assessment Act 1979* (the EP&A Act). A Scoping Summary Table is provided in **Appendix A**.

The project is a State significant development (SSD) as declared by Section 2.6(1)(b) and under Section 20, Schedule 1 of the *State Environmental Planning Policy (Planning Systems) 2021* (Systems SEPP). The applicable consent authority for the proposal is the New South Wales (NSW) Minister for Planning or the Minister's delegate.

A core objective of the project is to ensure a complete understanding of site sensitivities and to prioritise a strategy of avoid, minimise, and offset. Strategies for key impact areas in this respect are as follows:

Table 1 – Impact minimisation strategy

Key impact areas	Avoid	Minimise	Offset
Access	Prioritise the use of existing road infrastructure, subject to agreement with the roads authorities	Where impacts cannot be avoided, negotiate with regulators to ensure that designs minimise impact where possible	Any residual impacts (such as to native vegetation associated with road works) would be assessed via the project Biodiversity Development Assessment Report (BDAR) and residual liability would be discharged prior to works commencing.
Amenity, built environment and land use	The positioning of the facility has been carefully conceived to avoid impacts to nearby non-associated receivers.	Residual impacts would be identified through detailed assessment and measures taken to avoid and minimise these.	Where impacts cannot be avoided or minimised to an acceptable extent, agreements with neighbours would be negotiated to offset residual impacts.
Biodiversity	Prioritise development of lands that have been cleared of native vegetation	Where impacts cannot be avoided, negotiate with regulators to ensure that designs minimise impact where possible	Any residual impacts (such as to native vegetation associated with road works) would be assessed via the project BDAR and residual liability would be discharged prior to works commencing.
Economic	Economic impacts are largely positive.	Harm is minimised through ensuring the adoption of best practise principles in construction and operation.	No residual impacts requiring offsetting are predicted.
Hazard and risks	Avoidance and minimisation of the risks of hazard would be delivered through a strong understanding of project risks, through specialist		No residual impacts requiring offsetting are predicted.

Key impact areas	Avoid	Minimise	Offset
	investigations, and adoption of key recommendations.		
Aboriginal heritage	Known sites of Aboriginal significance will be avoided. Investigations will be completed to identify any previously unidentified sites and these would also be avoided where possible.	Where avoidance cannot be achieved, impacts would be minimised through discussion with Registered Aboriginal Parties (RAPs) to agree to acceptable methods of minimisation. This will be delivered through the project Aboriginal Cultural Heritage Assessment (ACHA).	Any unavoidable impacts (not expected) would be assessed and agreed with RAPs and Heritage NSW in advance and documented in the project ACHA.
Historic heritage	Site selection has avoided/minimised direct impacts through ensuring adequate separation to sites of historic heritage importance.		No residual impacts requiring offsetting are predicted.
Social impact	A clear understanding of potential social impacts would be determined through effective, proactive, and genuine engagement with community stakeholders. Once these issues are clearly understood, strategies will be adopted via the project EIS to ensure avoidance and minimisation.		To the extent that residual impacts are identified, impacts would be offset by the overarching positive benefit associated with the delivery of the project, to meet the State and Federal goals around decarbonisation of the energy industry. Impacts would also be offset through the delivery of community benefits identified in consultation with the community and/or negotiations with Council.
Water	Impacts to surface water are avoided through ensuring appropriate buffers between project	Harm minimisation would be delivered through adoption of best practise principles outlined in adopted Department	Offsetting, if required, would be completed in accordance with the average rule outlined in the DPE water guidelines

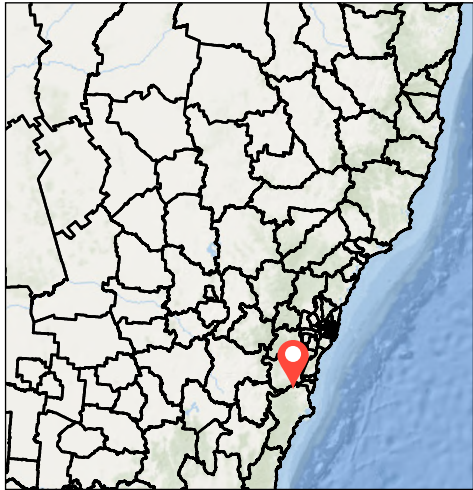
Key impact areas	Avoid	Minimise	Offset
	infrastructure and mapped waterways.	of Planning and Environment (DPE) Guidelines for riparian corridors on waterfront land (water guidelines)	
Air quality	Impacts to air quality would be avoided/minimised through adopting standard mitigation measures, to be outlined in a project Construction Environmental Management Plan (CEMP).		No residual impacts requiring offsetting are predicted.

Key features of the project are summarised in **Table 2**. The regional context of the development is reflected in **Figure 1** and the local context is reflected in **Figure 2**. Site constraints are reflected in **Figure 4**.

Table 2 – Project summary

Project element	Summary of the project
Development site	Approximately 15 ha
Site details	325 Bendeela Road, Kangaroo Valley, NSW 2577 Lot 10 DP1183451
Development site	The development site includes the BESS and associated operational and construction infrastructure, the transmission line to connect to the grid infrastructure and any necessary road upgrade works.
Battery storage capacity and duration	Up to 400 MW/1600 MWh.
Project lifespan	20 + years.
Infrastructure	<ul style="list-style-type: none"> > An up to approximately 400 MW/1600 MWh BESS > Underground or overhead (tbc) cabling connecting BESS, Modular Voltage Power System (MVPS) and grid > Operation & maintenance (O&M) compound and temporary compound > Internal road > Mitigation infrastructure if required by acoustic and visual assessment reports.
Site access	> Site access will be provided via Old Bendeela Road, accessed from Bendeela Road in the north.
Access route	> The port of import is likely to be Port Kembla, with the route to site for imported materials likely to be north via the Picton Road, south via the M31 and then a primary

Project element	Summary of the project
	<p>and alternate option to access the development site – refer Figure 9.</p> <ul style="list-style-type: none"> > A second option is also under consideration which may involve vehicles travelling either via Wollongong and Bombaderry or from Batemans Bay in the south.
Construction	<ul style="list-style-type: none"> > The construction of the project is expected to take approximately twelve (12) months with a peak construction period of 4.5 months
Operations and maintenance	<ul style="list-style-type: none"> > The project would be operated remotely with occasional maintenance activities taking place.
Decommissioning and rehabilitation	<ul style="list-style-type: none"> > The development site would be progressively rehabilitated during the decommissioning period, including removal of the temporary construction facilities. > 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	<ul style="list-style-type: none"> > Creates up to 60 jobs during peak construction period, and 2-3 ongoing roles.
Hours of operation	<ul style="list-style-type: none"> > 24 hours, 7 days per week.

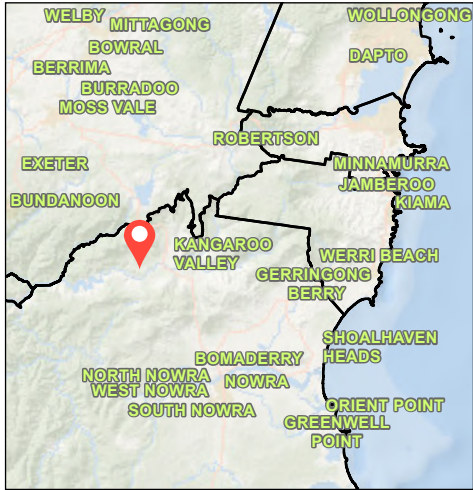


State Context

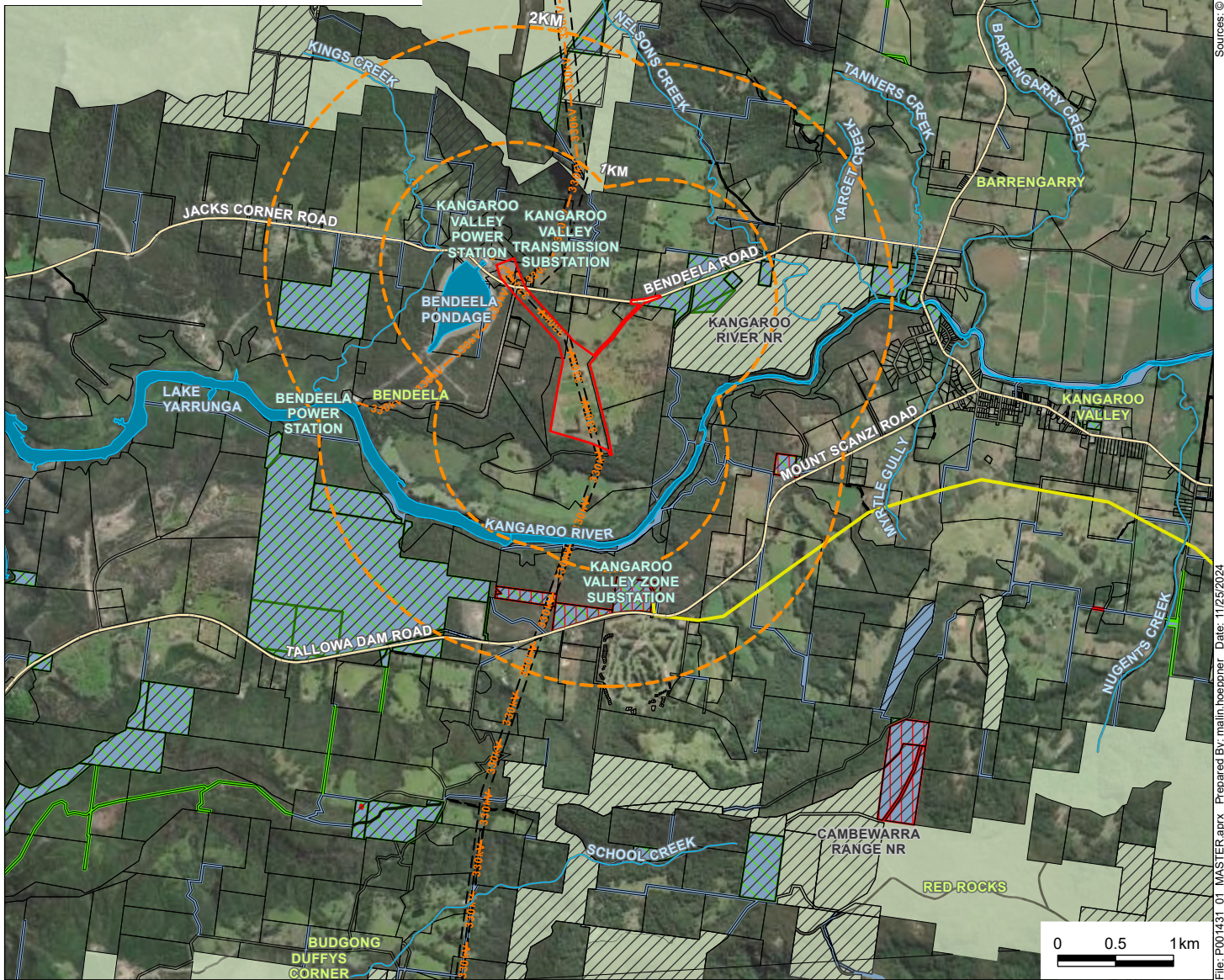


- Legend**
- Site
 - Local Government Area
 - Major Road
 - Renewable Energy Zone (REZ)

Figure 1
Regional Context



State Context



- Legend**
- Site
 - Site Buffer
 - Lot
 - Major Road
 - Major Water Body
 - Major Watercourse
 - NPWS Reserve

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Kangaroo Valley BESS

Figure 2
Local Context

1.2 Applicant

Firm Power is the applicant for the project. Firm Power is an Australian owned energy company who are dedicated to developing high quality energy projects to help accelerate the energy transition. Firm Power originates and structures energy projects from the identification phase through to the construction and operational phases of development.

Firm Power's head office is located at Level 7/341 George Street, Sydney 2000. Their ABN is 18 631 500 519.

1.3 Planning Framework

The proposed BESS is defined as electricity generating works under the *Shoalhaven Local Environmental Plan 2014* (LEP) as it is:

a building or place used for the purpose of—

(a) making or generating electricity, or

(b) electricity storage.

The proposed BESS development is a SSD, pursuant to Section 20, Schedule 1 of the Systems SEPP, as it is for the purposes of electricity generating works with an estimated cost of development (EDC) of more than \$30 million, and it is permitted with consent.

Generally, as the proposed development contains a BESS with a capacity of greater than 30 MW, it would constitute designated development by reference to Section 7 of Schedule 3 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulations). However, Section 4.10(2) of the EP&A Act provides that SSD is not designated development. In any event, the requirement in relation to the designated development is to prepare an EIS in support of the Development Application (DA). This is also a requirement of the SSD process, and thus there is no demonstrable difference in the approach.

The development site is zoned primarily as RU2 Rural Landscape pursuant to the LEP. The proposed transmission line is located on land zoned SP2 Infrastructure and a portion of Lot 10 DP1183451 (in the south) is zoned C2 Environmental Conservation. Electricity generating works are not permitted with consent on these land use zones pursuant to the LEP.

However, Section 2.36 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (Infrastructure SEPP) permits electricity generating works within prescribed rural zones, including the RU2. The Infrastructure SEPP prevails to the extent of any inconsistency with another environmental planning instrument, including the LEP. Thus, the project is permitted with consent. The Minister has the power via Section 4.38(3) of the EP&A Act to permit aspects of an SSD project despite it being prohibited. For the avoidance of doubt, no project development is proposed in the small portion of the site zoned C2.

1.4 Report Structure

Consistent with the requirements of the *State significant development guidelines – preparing a scoping report* (DPIE 2022) (SSD Guidelines), the report is structured as follows:

- > **Section 1** introduces the project, describing the development site, its location, the proposed development, and the planning framework.
- > **Section 2** details the development's strategic context.
- > **Section 3** provides a detailed description of the proposed project.
- > **Section 4** provides the statutory context.
- > **Section 5** provides details of community engagement completed during the scoping phase.
- > **Section 6** provides a summary of the proposed level of assessment of project impacts to be undertaken in the EIS.

2. STRATEGIC CONTEXT

2.1 Policy

2.1.1 AUSTRALIA'S LONG TERM EMISSIONS REDUCTION PLAN

Australia's Long Term Emissions Reduction Plan (Australian Government, 2021) (LTERP) sets out how Australia will achieve the goal of net zero emissions by 2050. One key principle of the plan is to lower the costs of low emissions technology. This involves prioritising technologies that will achieve this. One of the identified priority technologies is "energy storage for firming". The proposed development will provide for energy storage, thereby contributing to grid stability and providing clean and cheap electricity. The proposed development is considered consistent with the priorities of the plan as it will provide opportunity for energy storage within the regional context of the site.

2.1.2 NSW 2021: A PLAN TO MAKE NSW NUMBER ONE AND RENEWABLE ENERGY ACTION PLAN

NSW 2021: A Plan to Make NSW Number One (NSW Government, 2011) (NSW 2021 Plan) 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 NSW 2021 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."

Since release of the NSW 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.

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 Climate Change Policy Framework* (NSW, 2016) (Framework). This Framework is committed to effective action on climate change, outlining long term objectives to achieve net-zero emissions by 2050 and to make NSW more resilient to a changing climate. The achievement of net zero emissions by 2050 is reliant on the transition towards more sustainable and renewable forms of electrical production.

The project supports this objective by improving the reliability and stability of the electrical grid. BESS systems balance electrical demand and supply, and support responsive management of the electricity network, particularly during periods of peak generation and use. Increased variability within the grid is expected as the network transitions to increasingly renewable means of generation. The proposed development is consequently consistent with the objective of the Framework.

2.1.3 NET ZERO PLAN STAGE ONE: 2020-2030

Following the release of the NSW 2021 Plan, the NSW Government has overseen the development of the Net Zero Plan Stage 1: 2020-2030 (Net Zero Plan). The objective of the Net Zero Plan is to achieve net zero emissions by 2050 by creating new jobs, cutting household costs and attracting investment. The Net Zero Plan identifies four priority areas for action to achieve this objective which include:

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

The proposed BESS is consistent with the state-led priorities, particularly Priority 1. The project will provide for economic growth, deliver environmental benefits through job creation in an emerging industry, and supporting the development of an integrated renewable energy network to achieve net zero. Large-scale battery storage is a proven technology that contributes to the stability and reliability of the Australian electrical network.

2.1.4 NSW ELECTRICITY STRATEGY

The NSW Electricity Strategy 2019 (NSW Government, 2019) (Strategy) is a state-wide plan to ensure a 'reliable, affordable and sustainable electricity future'. The Strategy seeks to achieve this by, in part:

"Improv[ing] the efficiency and competitiveness of the NSW electricity market and encourage investment in new price reducing generation and energy saving technology."

The strategy is underpinned by the following four important principles:

- *"New market-driven electricity generation should drive down prices and help protect the environment. This is because firmed renewables are the cheapest form of new reliable generation and cheaper than the current wholesale price"*
- *"As electricity is an essential service, state and Commonwealth governments are ultimately responsible for reliable electricity"*
- *"Government action should limit costs to households, businesses and taxpayers"*
- *"Government action should be consistent with the nature of the national electricity system and NSW policy objectives."*

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

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

Firmed capacity from committed renewable generation projects is identified as essential to mitigating these conditions. The proposed development therefore supports the objectives of the Strategy,

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

2.1.5 NSW ELECTRICITY INFRASTRUCTURE ROADMAP

DPIE released the NSW Electricity Infrastructure Roadmap (Roadmap) in November 2020. Key actions from the Roadmap include:

- > Renewable Energy Zones (REZs);
- > Transmission development scheme;
- > Electricity Infrastructure Investment Safeguard;
- > Pumped Hydro Recoverable Grants Program; and
- > Internationally competitive NSW industries.

While the development site is not within a REZ, the proposed development is expected to positively contribute to the progress of the roadmap by providing long duration storage to support renewable energy sources and provided stability to the electricity network.

2.1.6 ENERGY SECURITY SAFEGUARD

The Energy Security Safeguard (Safeguard) is part of the Strategy and legislation to establish the Safeguard was passed by Parliament in May 2020. A principal objective of the Safeguard is 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 NSW 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, 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 Safeguard by providing capacity to meet peak demand periods and assists NSW in meeting its peak demand reduction targets, especially with the scheduled closure of Liddell Power Station in 2023.

2.1.7 RENEWABLE ENERGY POLICY FRAMEWORK

The Renewable Energy Policy Framework (Policy Framework) was published by Department of Planning, Housing and Infrastructure (DPHI) in November 2024 to help achieve the transition to renewable energy, support legislated net zero targets by 2050 and secure affordable supply of electricity for NSW. While the Policy Framework generally relates to solar energy, wind energy, hydrogen and transmission projects, it also accounts for both associated and stand-alone BESS projects, highlighting the need for two gigawatts of long-duration energy storage. The Policy Framework is relevant to stand-alone BESS projects in terms of benefit sharing to the local neighbourhoods and local community, and private agreements with landowners and adjacent landowners. The Policy Framework will provide guidance for future benefit sharing agreements with (Council) and private agreements with landowners.

2.1.8 ILLAWARRA SHOALHAVEN REGIONAL PLAN 2041

The Illawarra Shoalhaven Regional Plan 2041 (DPIE, 2021) (Regional Plan) sets out the strategic framework for the region and aims to protect and enhance the regions assets and plan for a sustainable future. Objective 15 of the Regional Plan is 'plan for a Net Zero region by 2050'. This Regional Plan also proposes the development of the Illawarra Shoalhaven Sustainability Roadmap, which will establish a collaborative regional approval to energy efficiency and emissions reduction.

The proposed BESS project supports the net-zero emissions by 2030 goal for the Illawarra Shoalhaven LGA by providing capacity to reduce the region's reliance on fossil fuels and increase electricity storage for reuse during peak consumption periods.

2.1.9 SHOALHAVEN 2040 – OUR STRATEGIC LAND-USE PLANNING STATEMENT

The Shoalhaven local strategic planning statement (LSPS) is known as the 'Shoalhaven 2040 – Our Strategic Land-use Planning Statement' (Shoalhaven City Council, 2020) sets out how Council will identify and work to consider and meet the communities land use needs between 2020 and 2040. Council plans to manage the demand for energy and water and reduce waste and greenhouse gas emissions produced across the region. Electricity consumption is the region's major source of emissions followed by road transportation emissions. Planning Priority 12 refers to managing resources, including reducing greenhouse gas emissions. Council seeks to reduce organisational emissions and increase the use of renewable energy, setting an example for, and educating, the community in relation to the benefits of these actions. The proposed development is considered consistent with this planning priority and supports the transition to renewable energy.

2.2 Local Context

The development site is located 3 km to the west of the town of Kangaroo Valley, NSW in the Shoalhaven City LGA. The Shoalhaven City LGA is located along the southern coast of NSW, with Kangaroo Valley situated approximately 25 km north of Nowra, 150 km south of Sydney, 90 km southwest of Wollongong and 100 km east of Goulburn, NSW. The regional context of the site is depicted in **Figure 1**.

In 2021, Kangaroo Valley had a total population of 856 people (Australian Bureau of Statistics). It is a small town and includes residential properties, schools, museums, sporting grounds, health services, and several business and retail properties. It is also a popular tourist destination.

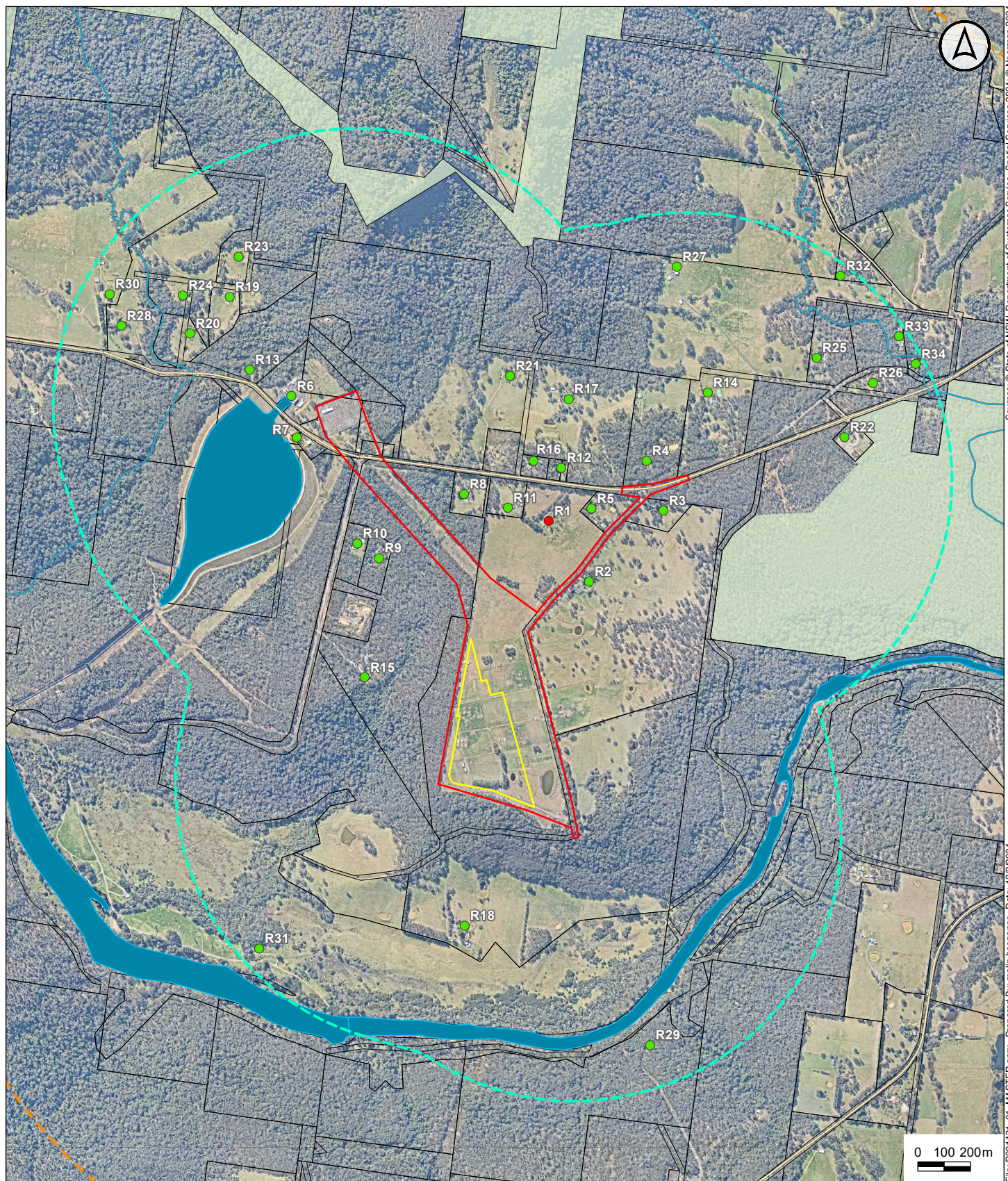
The Kangaroo River runs south of the development site, meandering in a general east to west direction through the Kangaroo Valley, rising in the Bunderoo National Park and into the Shoalhaven River in the Tallowa Dam. The Kangaroo River is a perennial river, which forms part of the Shoalhaven Catchment.

The Kangaroo Valley Nature Reserve is located approximately 1 km to the east of the development site and has an area of 118 ha. Other nearby reserves include the Barrengarry Nature Reserve, situated approximately 3 km north with an area of 21 ha, the Rodway Nature Reserve, approximately 10 km east with an area of 85 ha, and the Cambewarra Range Nature Reserve, located approximately 3.5 km south, consisting of eleven separate parcels of land, with a total area of 1,684 ha (NPWS, 2009:2).

The Shoalhaven Scheme Expansion is an additional SSD renewable energy project located to the north-west of the development site. This encompasses the Shoalhaven Hydro – Geotechnical Works (approved) and the Shoalhaven Hydro Expansion Project – Main Works (not yet determined).



There are approximately 104 receivers within 2 km of the development site. Of this, there are 19 receivers within a 500 m buffer, 15 receivers between the 500 m and 1 km buffer, and 70 receivers between the 1 km and 2 km buffer. Receiver locations are depicted in **Figure 3**.



- Legend**
- Site
 - 1km Buffer
 - BESS Investigation Area
 - Lot
 - Major Road
 - Major Water Body
 - Major Watercourse
 - NPWS Reserve

- Receivers**
- Associated
 - Non associated



FIRM POWER
Kangaroo Valley BESS

Figure 3
Receiver Locations

2.3 Site Description

The host lot is Lot 10 DP1183451, which has an overall area of approximately 53 ha. The proposed BESS would be located in the southern extent of the site and occupy an area of approximately of 15 ha (refer **Figure 2**).

The proposed BESS would connect to the existing Transgrid Shoalhaven substation located to the north west across Lots 1, 2, 3 and 4 DP545735. The connecting transmission line would be either aboveground or underground and would traverse Lot 11 DP1183451, the Bendeela Road road reserve and Lot 165 DP751262.

The host lot is generally cleared of substantial vegetation and is understood to have been used historically for agricultural purposes. It is currently used for free-range chicken farming.

Lot 11 DP1183451 is heavily vegetated, however it features a cleared transmission line easement which would host the proposed connecting transmission line. Bendeela Road features some roadside vegetation that may be impacted by the project, however this would be minimised as far as possible. Transgrid land on the northern side of Bendeela Road is generally disturbed and cleared of substantive vegetation.

The BESS development site is generally flat with a gradual fall to the south toward the Kangaroo River. Slope on the development site is generally less than 7%.

The site contains two first order streams in the southern extent draining eastward towards the Kangaroo River, and two small farm dams.

The site is mapped as bushfire prone land.

An existing 330 kV overhead electricity transmission line traverses the site in a south-north direction, linking to the Shoalhaven Transgrid Substation to the north-west. The transmission line easement and proposed connection route traverses an area mapped as containing groundwater dependent ecosystems.

The closest major project to the development site is the Shoalhaven Hydro project to the north-west. A number of consents apply to the project, however the main works EIS is currently under consideration. Subject to approvals, the project is expected to be in the construction phase for around five years, commencing in approximately (per the EIS) 2023. As this date has passed, it is unclear when construction might commence and thus there is the potential for cumulative impacts should the two projects be in the construction phase at the same time.

The development site is predominantly mapped class 4 (moderate to severe limitations) land and soil capability, with a small area of class 6 (very severe limitations) in the north of the development site.





Legend

- Site
- BESS Investigation Area
- Lot
- Road
- Water Body
- Watercourse (Strahler Stream Order)
- NPWS Reserve
- Easement

Electricity Transmission Line

- 330kV - 330 kV

Groundwater Bore

- Monitoring

Threatened Species Records

- Fauna
- Flora
- Key Fish Habitat - Southern Rivers Basin

Biodiversity Values

- Identified Old Growth Forest
- Identified Rainforest

Terrestrial Groundwater Dependent Ecosystems - Shoalhaven River

- High potential GDE - from regional studies

Terrestrial Biodiversity

- Moderate potential GDE - from regional studies
- Low potential GDE - from regional studies

Premise

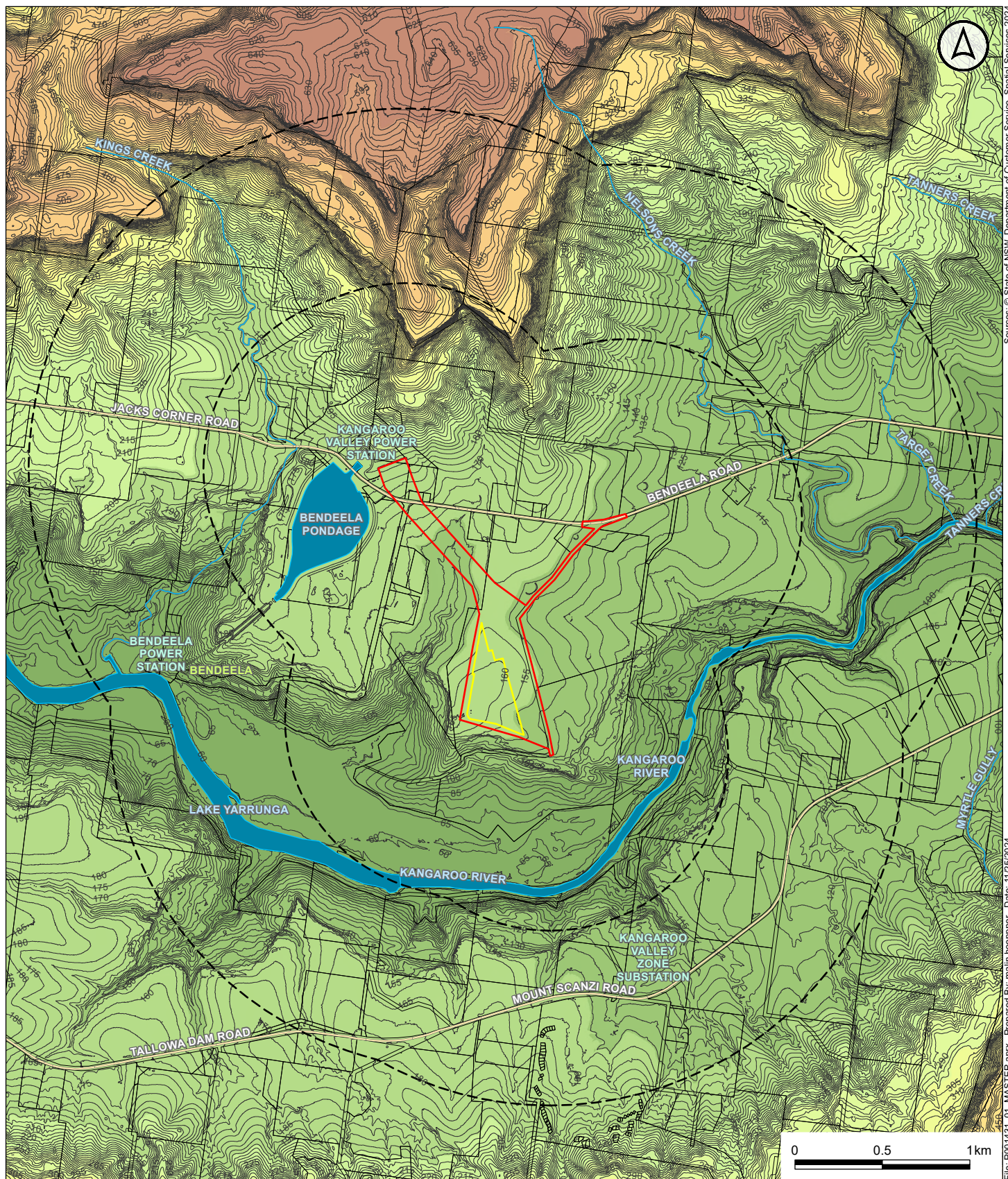
FIRM POWER

Kangaroo Valley BESS

Figure 4 Site Constraints

Sources: © State of NSW, Department of Customer Service, Spatial Services 2024. © Neatmap 2024. © State of NSW, Department of Planning, Housing and Infrastructure 2024. © State of NSW, Department of Climate Change, Energy, the Environment and Water 2024.

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Legend

- Site
- BESS Investigation Area
- Lot
- Major Road
- Major Water Body
- Major Watercourse
- NPWS Reserve
- 1 km Buffer

- 2 km Buffer
- Elevation (m)
 - 50 - 100
 - 100 - 150
 - 150 - 200
 - 200 - 250
 - 250 - 300
 - 300 - 350

- 350 - 400
- 400 - 450
- 450 - 500
- 500 - 550
- 550 - 600
- 600 - 650
- Natural Contours (5 m Interval)



FIRM POWER
Kangaroo Valley BESS

Figure 5
Topography

3. PROJECT DESCRIPTION

3.1 Proposed Development Overview

The proposed BESS will align with, and be contained within, the development site as shown in **Figure 6**. The BESS infrastructure is located wholly within Lot 10 DP1183451. The connection route to connect to the Shoalhaven Transgrid Substation to the north is also within the development site, affecting Lot 11 DP1183451, the Bendeela Road road reserve and Lot 165 DP751262. The Shoalhaven Transgrid substation is located across Lots 1, 2, 3 and 4 DP545735. Minor augmentation works will be required in the substation site and it is expected that these will be completed by the project as a component of the SSD approval.

A BESS is a type of energy storage system which makes use of batteries to store and then distribute energy in the form of electricity. The batteries are charged through the storage of excess energy generated within the electricity network and released through the grid, as required in periods of peak demand.

Proposed development includes an up to 400 MW/1,600 MWh BESS, as well as on site energy storage containers, MVPS containers, and a connection station including control rooms. The development site will have an area of approximately 15 ha.

The development site entrance will utilise an existing site access from Old Bendeela Road, which in turn connects to Bendeela Road. A security fence will be constructed around the development site along with, potentially, vegetation screening outside of the fence to screen the BESS from nearby receivers.

The Kangaroo Valley BESS will encompass the following key components:

- > Enclosed 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 800 m length to connect the BESS to the Transgrid Shoalhaven Substation located to the north-west;
- > Earthing and lightning protection systems;
- > Site office, storage area/enclosure, internal access tracks, on-site parking, security fencing, CCTV, and temporary construction laydown area;
- > Switching station;
- > Acoustic walls (if required);
- > Vegetation screening (if required);
- > Upgrade of the existing site access from Old Bendeela 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.

3.1.1 BATTERY TECHNOLOGY

The Project's battery technology type and layout will undergo further refinement in the course of the Environmental Impact Statement (EIS). Given the rapid evolution of battery chemistry and associated technology options, coupled with declining costs, there is a growing emphasis on exploration and pursuit of these advancements. Examples of battery types that may be used are explored further in **Table 3**.

Table 3 – Possible battery types

Battery chemistry	Overview
Lithium-ion	Lithium-ion chemistries are diverse. Nickel-Manganese-Cobalt and Iron Phosphate formulations are commonly used within BESS facilities
Lithium-ion polymer battery	Alternative being investigated as certain formulations are quoted to achieve greater safety (e.g., reduction or elimination of thermal runaway), increased energy density, material stability within a greater operating envelope, and an enhancement in overall performance.
Vanadium redox flow battery (flow battery)	Alternative capable of long-duration discharge. Quoted to achieve greater safety (e.g., reduction or elimination of thermal runaway), greater temperature operating envelope and longer operational design life.
Sodium-ion battery	Alternative option given its environmental abundance, non-flammable nature, and reduced susceptibility to temperature changes relative to Lithium-ion batteries

3.2 Project Phases

3.2.1 CONSTRUCTION

The construction period is estimated to be twelve (12) months and is expected to commence in early-2026. Duration of peak construction period is approximately 4.5 months.

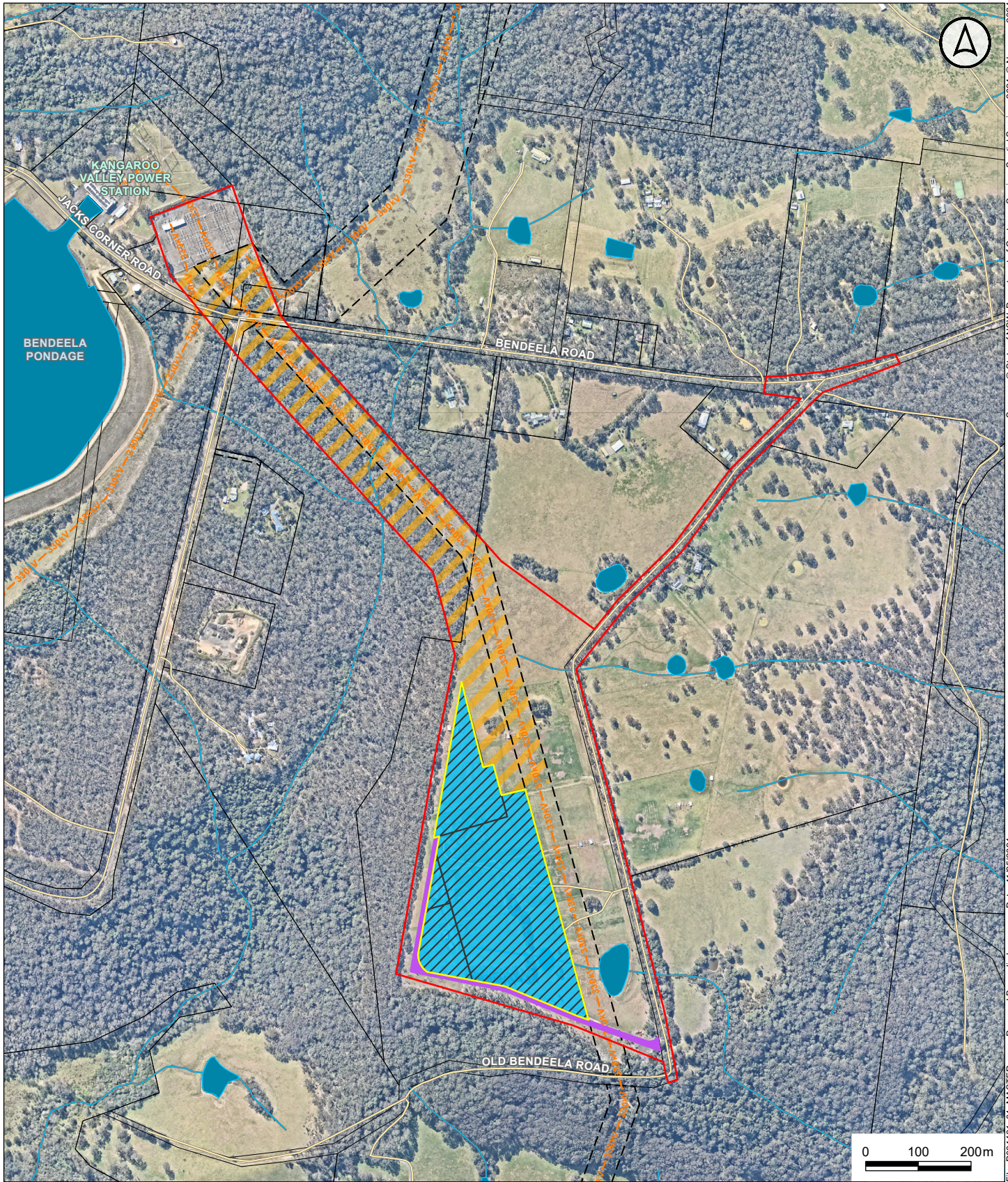
Construction or upgrading activities would occur during standard construction hours (7 am to 6 pm Monday to Friday, 8 am to 1 pm Saturdays, and at no time on Sundays and NSW public holidays.)

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 routes (primary and alternate) are reflected in **Figure 7** and **Appendix B**.





- | | |
|--|---|
| Legend | Electricity Transmission Line |
| Site | --- 330kV --- 330 kV |
| BESS Investigation Area | Indicative BESS and Ancillary Infrastructure |
| Lot | Indicative Grid Connection Investigation Area |
| Road | Indicative Internal Road Access |
| Water Body | |
| Watercourse | |
| NPWS Reserve | |
| Easement | |

Figure 6
Conceptual Site Layout



- Legend**
- Start: Port Kembla
 - Finish: Kangaroo Valley Bess
 - Route 1 - Primary
 - Route 2 - Alternate
 - Major Road
 - NPWS Reserve
 - State Forest

Premise

FIRM POWER

Kangaroo Valley Bess

Figure 7
Transport Route

Seven key construction stages (stages 3, 4, 5, 6 overlap during the 4.5 month peak construction period):

1. Establishment, drainage, roads and fencing.
2. Footing installation.
3. Delivery and installation of cabling.
4. Steel platform installation.
5. MVPS & BESS delivery and installation, including electrical installation.
6. Control room, transformer and switchgear delivery and installation.
7. Commissioning and 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 area.
- > Levelling the development site as needed.
- > Installation of concrete footings and steel platforms on which to install the BESS, MVPS containers and switching station.
- > Delivery and installation of 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 existing transmission network.
- > Testing and commissioning.

The project is expected to generate up to 60 Full Time Equivalent (FTE) jobs during construction.

3.2.2 OPERATION

It is anticipated that the BESS would be operational for a period of approximately 20 years, operating 24 hours a day, seven days a week. The area of the BESS would be leased for the duration of the development from the host landowners.

Once operational the BESS will be operated primarily remotely, with staff attending site to undertake routine work including:

- > 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 2-3 FTE jobs during operation, associated with operation, maintenance, and vegetation management.

The remainder of Lot 10 DP1183451 could continue to be used for an agricultural purpose. This would assist to control fuel loads surrounding the development and maximise economic output from the subject land.

3.2.3 DECOMMISSIONING

It is anticipated that the BESS would be operational for a period of approximately 20 years after which it would be removed and the development site would be decommissioned. The switching station may remain on site after decommissioning subject to a decision by the electricity authority. 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 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 use for agricultural or other permissible purposes.

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

3.3 Cumulative Impacts

Cumulative impacts, as defined by the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPIE, 2022) (CIA guidelines), 'are a result of incremental, sustained, and combined effects of human action and natural variations over time and can be both positive and negative'.

The development of any project has the potential to lead to an accumulation of impacts, either associated with the nature of construction or operation activities occurring on site, or in conjunction with other projects being developed in the locality or region.

Cumulative impact assessment levels for each assessment matter, as defined by the CIA guidelines, are reproduced in **Table 4**.

Table 4 – Cumulative Impact Assessment Level Definitions

Assessment level	Description (refer to Appendix B of the CIA guidelines (DPIE, 2022))
Detailed assessment (D)	<p>The project may result in significant impacts on the matter, including cumulative impacts. Detailed assessment is characterised by:</p> <ul style="list-style-type: none">> Potential overlap in impacts between a future project (e.g. Project A) and the proposed project

Assessment level	Description (refer to Appendix B of the CIA guidelines (DPIE, 2022))
	<ul style="list-style-type: none"> > Potential for significant cumulative impacts as a result of the overlap, requiring detailed technical studies to assess the impacts > Sufficient data is available on the future project to allow a detailed assessment of cumulative impacts with the proposed project for the relevant matter <p>Uncertainties exist with respect to data, mitigation, assessment methods and criteria</p>
Standard assessment (S)	<p>The project is unlikely to result in significant impacts on the matter, including cumulative impacts. Standard assessments are characterised by:</p> <ul style="list-style-type: none"> > Impacts are well understood > Impacts are relatively easy to predict using standard methods > Impacts are capable of being mitigated to comply with relevant standards or performance measures <p>The assessment is unlikely to involve any significant uncertainties or require any detailed cumulative impact assessment.</p>
No applicable (N/A)	No potential overlap in impacts between a future project (e.g. Project A) and the proposed project that would warrant any consideration in the cumulative impact assessment.

There is the potential for cumulative impacts as a consequence of the development of other projects in proximity of the development site. The project EIS will consider potential cumulative impacts in relation to other renewable energy projects, construction projects, industrial and employment generating projects within the locality, in detail. Preliminary consideration of potential cumulative impacts is set out in the following sections.

3.3.1 RENEWABLE ENERGY PROJECTS

An initial review of energy SSD projects in close proximity to the development site, registered via the Major Projects Portal, has identified the following projects:

- > Shoalhaven hydro main works,
- > Bamarang Power Station; and
- > Eastern Gas Pipeline Mod 1 - Port Kembla Lateral Pipeline.

These projects have been considered in **Table 5**.

3.3.2 OTHER PROJECTS

Other, non-renewable, projects with the potential to result in cumulative impacts include:

- > Materials recycling facility at Mundamia;
- > Fitzroy Falls RFS shed.

These projects have been considered in **Table 5**.

Table 5 – Projects with potential for cumulative impacts

Project	Proximity to the project	Status	Potential construction start date	Potential cumulative impacts
Shoalhaven Pumped Hydro Expansion Project - Main Works	Located to the north-west of the development site	Response to submissions.	Project EIS states 2023 commencement. Current commencement date is unknown.	Noise Visual Traffic Biodiversity Heritage
Bamarang Power Station	Located approximately 18 km south of the development site	Approved in 2007. An extension was granted to 2017 however construction status is unknown.	Unknown	Traffic Social
Eastern Gas Pipeline Mod 1 - Port Kembla Lateral Pipeline	Located to the east and south-east of the development site	Approved in 2020	Construction commenced December 2022	Traffic
Materials recycling facility at Mundamia	17 km south of the development site	Approved February 2024	Unknown	Traffic Social
Fitzroy Falls RFS shed	8 km south of the development site	The shed has not been constructed at this stage however current status is unknown.	Unknown	Traffic Social

Initial cumulative impacts are anticipated to be minor and would only occur should the timing of construction occur simultaneously. As detailed above, there are several other renewable SSDs within the region which have been considered in the assessment of potential cumulative impacts, particularly in relation to traffic impacts.

Further consideration of cumulative impacts would be addressed in detail within the EIS.

3.4 Consideration of alternatives

Development options considered as part of this Scoping Report and to be considered in greater detail in the EIS are described in **Table 6** below.

Table 6 – Development options

Alternatives:		Description:
Option 1	Base Case, 'Do Nothing'	Option 1 would involve not installing and operating a BESS at the development 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 development site.
Option 4	BESS at Bendeela Road, in an alternative portion of the development site	Option 4 would involve developing the BESS within an alternative area of the development site
Option 5	BESS at Bendeela Road, Kangaroo Valley, 'Preferred Option'	Option 5 would involve the installation and operation of a BESS at the development site.

Of the above, Option 5 is the preferred option, and this is discussed in the following sections.

3.4.1 OPTION 1

Option 5 is preferred over option 1. Proceeding with option 1 would be inconsistent with the strategic context set by State and local policy, including:

- > Goal 22 of the NSW 2021 Plan, 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, which seeks to attract renewable energy investment;
- > Objectives of the Safeguard legislation to improve the affordability, reliability and sustainability of energy by addressing the shortfall in firm capacity during times of peak demand;
- > Objective 15 of the Regional Plan, which seeks to provide capacity to reduce the Region's reliance on fossil fuels, reduce emissions, and use of renewable energy;
- > Planning Priority 12 of the LSPS, which seeks to manage the increasing demand for energy through the increased use of renewable energy.

Option 1 fails to enable the regulation of electricity supply which improves its efficiency, consistency and reliability for consumers as it becomes increasingly variable due to the transition from traditional to more sustainable, renewable sources in the region.

3.4.2 OPTION 2

Option 5 is preferred over Option 2 as the latter would result in increased costs and environmental impacts associated with the acquisition of a suitable property, given the proximity of the development

site to the Kangaroo Valley Substation, and construction of increased lengths of connecting infrastructure (likely to include earthworks and vegetation removal), as compared to the proposed development site. The proximity of the development site to the substation minimises the required connecting infrastructure.

3.4.3 OPTION 3

Option 5 is preferred over option 3 as option 5 is a reliable method, 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. Option 3 may not be suitable due to its limited area or other reasons, requiring the seeking out and acquisition of an alternative site and construction of connecting infrastructure.

3.4.4 OPTION 4

Option 5 is preferred over option 4 as other locations on the land are potentially closer to non-associated receivers and are potentially more visible from the public domain than the preferred option. The preferred location is well shielded from external views. Noting the above, option 5 (the preferred option) is the best available area within the host lot for the BESS.

4. STATUTORY CONTEXT

The key statutory requirements for the project are set out in **Table 7**.

Table 7 – Statutory considerations

Matter	Comment
Power to grant consent	<p>Section 4.5 of the EP&A Act provides that the consent authority is the Independent Planning Commission or the Minister, based on the development type.</p> <p>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 SSD.</p> <p>The proposed development is for the purposes of electricity generating works that has an estimated development cost (EDC) of more than \$30 million and is therefore declared to be State significant in accordance with Section 20 of Schedule 1 of the Systems SEPP. On this basis the consent authority for the proposed development is likely to be the Minister.</p> <p>However, it is noted that if any of the following occurs the consent authority will become the Independent Planning Commission in accordance with Section 2.7(1) of the Systems SEPP:</p> <ul style="list-style-type: none"> > The council of the area in which the development is to be carried out has duly made a submission by way of objection under the mandatory requirements for community participation in Schedule 1 of the EP&A Act; > 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; or > 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	<p>Electricity generating works are prohibited in the RU2 Rural Landscape zone and C2 Environmental Conservation zone which applies to the subject land.</p> <p>Notwithstanding, the development is permitted with consent in the RU2 Rural Landscape zone on the following grounds:</p> <ul style="list-style-type: none"> > 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 the Infrastructure SEPP. Under Section 2.35 of the Infrastructure SEPP, prescribed rural zones include the RU2 Rural Landscape zone which applies to the development site under the LEP. <p>No electricity generating works will occur on land zoned C2 Environmental Conservation.</p>
Other approvals	Commonwealth approvals may be required for the following reasons:

Matter	Comment
Pre-existing conditions to exercising the power to grant consent	<ul style="list-style-type: none"> > A search for potential matters of national environmental significance (MNES) that may trigger the need for referral to the Commonwealth Department of Climate Change, Energy, the Environment and Water (Cwth DCCEEW). A Protected Matters Search was undertaken and results shown in Appendix C: <ul style="list-style-type: none"> - Identified no World Heritage Properties or National Heritage Places protected by the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). - Identified five threatened ecological communities with the potential to occur in or within proximity to the development site. - Identified 57 threatened species which may be present in or within proximity to the development site. - Identified 12 migratory bird species which may be present in or within proximity to the development site > The preliminary biodiversity assessment (Appendix E) notes the occurrence of the federally listed Illawarra Lowland Red Gum Grassy Forest within the site, which is an endangered ecological community under the EPBC Act. > A review of the National Native Title Tribunal's Native Title Register and Native Title Vision online database identified that the development site is located within an active Native Title Claim area (NC2017/003) referred to as 'South Coast People' (refer Section 6.9.2). No site specific native title claims were observed nor were any Indigenous Land Use Agreements applying to the development site under the <i>Commonwealth Native Title Act 1993</i> (Native Title Act).
Mandatory matters for consideration	<p>Pursuant to Section 4.15 of the EP&A Act, the following mandatory matters for consideration apply:</p> <ul style="list-style-type: none"> > Relevant environmental planning instruments, including: <ul style="list-style-type: none"> – <i>State Environmental Planning Policy (Resilience and Hazards) 2021</i> (the Hazards SEPP): <ul style="list-style-type: none"> > Chapter 3 Hazardous and offensive development; and > Chapter 4 Remediation of land. – <i>State Environmental Planning Policy (Transport and Infrastructure) 2021</i> (the Infrastructure SEPP): <ul style="list-style-type: none"> > Chapter 2 Infrastructure. – <i>State Environmental Planning Policy (Planning Systems) 2021</i> (the Systems SEPP): <ul style="list-style-type: none"> > Chapter 2 State and regional development. – <i>State Environmental Planning Policy (Biodiversity and Conservation) 2021</i> (the Biodiversity SEPP): <ul style="list-style-type: none"> > Chapter 3 Koala habitat protection 2020 – Shoalhaven LEP 2014.

Matter	Comment
	<ul style="list-style-type: none"> > The relevant Development Control Plan (DCP) (the Shoalhaven DCP 2014). It should be noted that the application of a DCP is excluded from SSD under Section 2.10 of the Systems SEPP. > The likely impacts of the development including environmental impacts on natural and built environments and social and economic impacts in the locality. > The suitability of the development site for the development. > The public interest.

4.1 State Environmental Planning Policies

4.1.1 STATE ENVIRONMENTAL PLANNING POLICY (RESILIENCE AND HAZARDS) 2021

The Hazards SEPP comprises several chapters including Chapter 3 - Hazardous and Offensive Development and Chapter 4 – Remediation of Land, which potentially apply to this project. These chapters have been addressed below.

4.1.1.1 Chapter 3 Hazardous and offensive development

Section 3.7 of the Hazards SEPP requires the consideration of current circulars or guidelines prepared by the Department of Planning in determining whether a development is:

- > hazardous storage establishment, hazardous industry, or other potentially hazardous industry; or
- > offensive storage establishment, offensive industry, or other potentially offensive industry.

The current and most recent guidelines prepared by the Department of Planning, the *Hazardous and Offensive Development Application Guidelines – Applying SEPP 33* (Applying SEPP 33 Guideline; Department of Planning 2011), includes the screening tests to be used to determine whether a development is potentially hazardous development. If the screening tests indicate that a development is potentially hazardous development, a preliminary hazard analysis (PHA) is required to be provided as part of the DA. The type of screening test to be used is dependent upon the class, as categorised under the Australian Dangerous Goods Code (ADG; National Transport Commission 2020) of dangerous goods proposed to be accommodated on-site.

Dangerous good associated with BESS may be lithium batteries, which are a class 9 dangerous good under the ADG Code. Class 9 goods do not exceed the screening thresholds under the Applying SEPP 33 Guideline, as they “pose little threat to people or property” (Department of Planning 2011, p. 33).

Notwithstanding, a Preliminary Hazard Analysis (PHA) would be prepared to support the project EIS to consider risks associated with the batteries consistent with the expected advice of the project SEARs.

4.1.1.2 Chapter 4 Remediation of Land

Section 4.6(1) of the Hazards SEPP states that a consent authority must not consent to the carrying out of development unless it has considered whether the land is contaminated. If the land is contaminated, the consent authority must not consent to the carrying out of development unless it is suitable for the

proposed use in its contaminated state or will be suitably remediated before the land is used for that purpose.

A search of the NSW EPA Contaminated land record was completed for contaminated land within the Shoalhaven LGA on 2 October 2024. Three sites are noted within the LGA, however are situated in Nowra and Bomaderry which are approximately 30 km south and 23 km south respectively.

The site has historically been utilised for agricultural purposes, therefore there is a limited potential for contamination on site.

Based on the above, the EIS will contain consideration of contamination within the development site and provide necessary mitigation measures or further analysis should potential contamination be identified on site.

4.1.2 STATE ENVIRONMENTAL PLANNING POLICY (TRANSPORT AND INFRASTRUCTURE) 2021

The Infrastructure SEPP comprises several chapters, including, relevantly, Chapter 2 – Infrastructure.

Development for the purposes of electricity generating works is prohibited in the RU2 zone under the LEP. However, Section 2.36(1)(b) of the Infrastructure SEPP permits electricity generating works in prescribed rural zones, including the RU2 zone.

The development is therefore permitted with consent via the Infrastructure SEPP.

4.1.2.1 Section 2.42 of the Infrastructure SEPP

Section 2.42 states that development consent must not be granted for a state or regionally significant development for the purposes of electricity generating works, where the project is located in close proximity to a regional city. Regional cities include Albury, Armidale, Bathurst, Dubbo, Griffith, Orange, Tamworth, Wagga Wagga, Goulburn and Mudgee. As per the Regional Cities Map contained within the Infrastructure SEPP, there are no regional cities in close proximity to the proposed Kangaroo Valley BESS.

4.1.3 STATE ENVIRONMENTAL PLANNING POLICY (PLANNING SYSTEMS) 2021

The Systems SEPP:

- > *identifies State or regionally significant development, State significant Infrastructure, and critical State significant infrastructure.*
- > *provides for consideration of development delivery plans by local Aboriginal land councils in planning assessment.*
- > *allows the Planning Secretary to elect to be the concurrence authority for certain development that requires concurrence under nominated State environmental planning policies.*

Chapter 2 of the Systems SEPP relates to SSD, Chapter 3 relates to Aboriginal Land and Chapter 4 relates to concurrences and consents.

Schedule 1 provides a summary of project and project specific triggers that meet the general requirements of SSD.

Section 20 of Schedule 1 confirms that electricity generating works and heat or co-generation projects with an EDC of more than \$30 million (or more than \$10 million where located on an environmentally sensitive area of state significance) is an SSD project. As the project EDC exceeds \$30 million, the Kangaroo Valley BESS project is SSD.

4.1.4 STATE ENVIRONMENTAL PLANNING POLICY (BIODIVERSITY AND CONSERVATION) 2021

The Biodiversity SEPP comprises several chapters, including, relevantly, Koala Habitat Protection which is discussed below:

4.1.4.1 Chapter 3: Koala habitat protection 2020

Under Section 3.3(1) of the Biodiversity SEPP, the SEPP applies to land within the RU1 Primary Production, RU2 Rural Landscape and RU3 Forestry and equivalent zones in an LGA not marked with a '*' in Schedule 2 of the SEPP. A three-step process is applicable where the SEPP applies and the development site has an area of more than 1 Ha.

The development site is located within the RU2 zone and therefore, Chapter 3 applies to the proposed development. The preliminary biodiversity assessment did not identify likely Koala habitat on site however more detailed analysis would be completed in relation to the project BDAR and provided as part of the EIS to address any potential impacts to Koala.

4.1.4.2 Chapter 4 Koala habitat protection 2021

Under Section 4.4(1) of the Biodiversity SEPP, the Chapter applies to the LGAs listed in Schedule 2 of the SEPP, unless the site is located within the RU1 Primary Production, RU2 Rural Landscape or RU3 Forestry zone in an LGA that isn't marked with a '*' in Schedule 1.

The development site is located within the RU2 zone. Chapter 4 therefore does not apply.

4.2 Other Environmental Planning Policies

4.2.1 SHOALHAVEN LOCAL ENVIRONMENTAL PLAN 2014

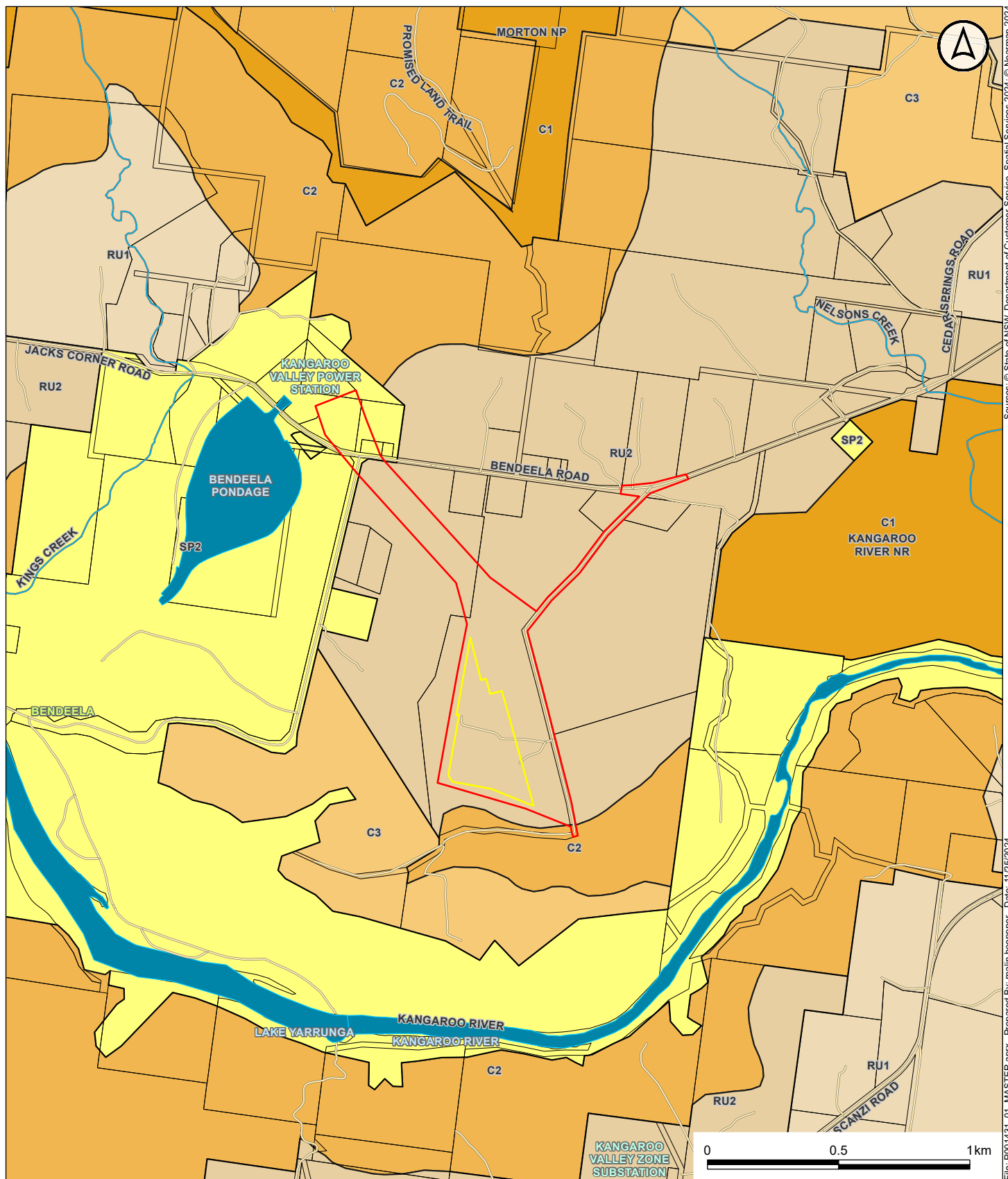
The development site is zoned primarily as RU2 Rural Landscape pursuant to the LEP. Within the RU2 Rural Landscape zone, electricity generating works are prohibited. However, pursuant to Section 2.36(1)(b) of the Infrastructure SEPP, electricity generating works are permitted with consent in a prescribed rural zone, including the RU1 zone. The Infrastructure SEPP prevails over the LEP to the extent of any inconsistency and thus the development is permissible with consent.

The objectives of RU2 Rural Landscape zone under the LEP are:

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*
- *To maintain the rural landscape character of the land.*

- *To provide for a range of compatible land uses, including extensive agriculture.*

The project is not inconsistent with these objectives on the basis that it provides for development that would not result in conflict with other land uses within the zone, will be supported by appropriately scoped assessments to consider all impacts, and will ensure that residual impacts that cannot be avoided are appropriately mitigated. The proposed development will allow for the continued use of the site for agricultural purposes in conjunction with the electricity generating works.



- Legend**
- Site
 - BESS Investigation Area
 - Lot
 - Road
 - Major Water Body
 - Major Watercourse

- Land Zoning (LZN)**
- C1
 - C2
 - C3
 - RU1
 - RU2
 - SP2



FIRM POWER
Kangaroo Valley BESS

Figure 8
Land Zoning

5. ENGAGEMENT

The following sub-sections describe the engagement activities that have already been carried out for the project. Firm Power coordinated the carrying out of community and stakeholder engagement during the scoping phase of the project. Early community engagement sought to provide opportunities for the community to understand the project and to provide feedback about impacts and benefits that could inform project development and assessment. Community concerns will be considered by Firm Power as they design the project and will be further assessed in the EIS.

5.1 Engagement to Date

5.1.1 DEPARTMENT OF PLANNING, HOUSING AND INFRASTRUCTURE

Firm Power completed a pre-scoping meeting with the DPHI on 4 October 2024 to introduce the project and obtain preliminary feedback. Key matters that were raised in this meeting included the following:

- > Consideration of noise impacts to nearby non-associated sensitive receivers;
- > Careful consideration of transport routes and full consideration of potential impacts or upgrades that may be required;
- > Recommendation of early engagement with Council and early discussions around benefit sharing;

This input from DPHI has contributed to shaping the initial assessment criteria, as well as the next steps in the investigative phases.

5.1.2 SHOALHAVEN CITY COUNCIL

Firm Power provided a briefing of the project to Council on the 3 December 2024. Key matters raised by Council included:

- > Consideration of amenity impacts on receivers, including what mitigation measures are available for BESS projects to address visual and acoustic impacts.
- > Community engagement, particularly with awareness of smaller community batteries that have recently been installed. Council flagged that providing clarity for the community regarding the different scale and purposes of the proposed development compared to the community batteries.

This input from Council has contributed to shaping the initial assessment criteria, as well as the next steps in the investigative phases. Firm Power is committed to continuing discussions with Council to ensure all areas of interest are addressed.

5.1.3 COMMUNITY

The 'community' encompasses a wide range of individuals and groups who are either interested in or impacted by a State significant project. This includes local residents, community groups, Aboriginal and Torres Strait Islander communities, culturally diverse groups, peak bodies, and businesses.

Firm Power considered several factors to determine the targeted community for this project. These factors including the development site's location in an agricultural area with few near neighbours and the minimal construction impact given the batteries are constructed off-site. A desktop analysis was carried out to identify community groups located near the project. No community groups were

identified near to the project, but general community groups servicing the entire Kangaroo Valley township were identified. These included:

- > Illawarra Local Aboriginal Land Council
- > Kangaroo Valley Community Consultative Body (KVCCB)

A summary of the consultation activities carried out with identified community is included in **Table 8**.

Table 8 – Summary of community consultation activities

Entity	Approach	Purpose and outcomes
Shoalhaven City Council	Email	Firm Power sent an email on 25 July 2024 to the Lord Mayor of Shoalhaven and local Ward councillors, introducing the Project and inviting them to attend Firm Power's introductory project presentation at the Kangaroo Valley Community Consultative Body (KVCCB) meeting on 30 July 2024.
	Meeting	Firm Power met with Shoalhaven City Council on 03 December 2024 to discuss the Project – refer Section 5.1.2 .
	Email	Emails were sent to the Mayor and Ward councillors on 03 December 2024, introducing them to the project and inviting them to attend the consultation event at the Kangaroo Valley Farmer's markets.
DPHI (Department of Planning, Housing and Infrastructure)	Meeting	Firm Power met with DPHI on 04 October 2024 to discuss the Project. DPHI expectations were highlighted and examples of conditions for recent determinations were identified. Matters discussed included cumulative impacts of the Shoalhaven Hydro project, consideration of receivers, photo montages for visual assessments, water, access upgrades and bushfire considerations.
Kangaroo Valley community	Notification email	KVCCB was notified of the Project on 20 June 2024 and worked with Firm Power to facilitate a presentation at an upcoming bi-monthly community town hall meeting.
	Telephone calls	Throughout June and July 2024, Firm Power conducted one-on-one phone calls with adjacent landowners and occupiers to introduce the project and establish open lines of communication.
	Town hall session	Firm Power presented and introduced the Project to the community at a bi-monthly meeting of the KVCCB, at the Kangaroo Valley Public Hall on 30 July 2024.

Entity	Approach	Purpose and outcomes
	Notification correspondence	A letterbox drop was conducted via Australia Post for landowners and occupiers within a 2 km radius of the Project site in the week commencing 7 October 2024. This provided further detail about the Project and advised of upcoming door-knocking on 15 October 2024 and a community consultation event on 16 October 2024. The notice also invited recipients to contact Firm Power if they wished to arrange a one-on-one meeting.
	Community notification	As a follow-up to the correspondence described above, social media channels and email were used on 13 October 2024 to further notify and invite the local community, residents and all relevant stakeholders to the upcoming community consultation on 16 October 2024.
	Door knocking	On 15 October 2024, Firm Power conducted door-knocking at 14 properties on Bendeela Road and Old Bendeela Road. The purpose of this exercise was to inform residents about specific Project impacts, answer questions, and gather feedback. For properties where no one was available, "We missed you" cards, with contact details were left. Residents were provided with relevant material, including the Project site location and development timelines.
	Community consultation event	A community drop-in session was held on 16 October 2024, from 7:30 -9:30 am at the Hampden Deli. This was advertised on social media channels, including community Facebook groups and LinkedIn, as well as through the notification correspondence described above. The event attracted 18 visitors and indicated a high level of interest in the Project. Contact details have been retained on the stakeholder register for follow-up discussions during the EIS phase. The Federal Member for Gilmore, Mrs Fiona Phillips MP attended the drop-in session.
	Community consultation event	Firm Power held a drop-in session on 8 December 2024, where representatives were present at the Kangaroo Valley Farmers Market. This was advertised in the December edition of the Kangaroo Valley Voice, the

Entity	Approach	Purpose and outcomes
		local newsletter for Kangaroo Valley community and social media channels, including community Facebook groups. The stall attracted many visitors and indicated a high level of interest in the Project. Contact details have been retained on the stakeholder register for follow-up discussions during the EIS phase.
Transgrid	Multiple meetings	Firm Power has met with Transgrid on multiple occasions during the year to discuss the Project and submit a connection enquiry. These discussions have also considered the need to include any Transgrid augmentation works within the Kangaroo Valley BESS DA.
NSW Rural Fire Service	Email	Firm Power contacted Shoalhaven RFS on 4 October 2024 to introduce the Project and request an introductory meeting with the relevant team to obtain early advice.
	Online meeting	Firm Power met with the Shoalhaven RFS District Manager and the Development Assessment & Planning Coordinator from Planning & Environment Services on 17 October 2024 to discuss the project in detail and gather early feedback on the proposal. Following the meeting, advice for the EIS stage was provided to Firm Power on 25 October 2024.
Federal Member of Parliament	Email	An introductory email for the Project was sent to the Federal Member for Gilmore, Mrs Fiona Phillips MP, on 23 August 2024 with an offer to meet with her to discuss the Project further. Fiona Phillips MP has been provided with regular email updates following consultation events and project milestones.
	Online meeting	Firm Power met with Mrs Fiona Phillips MP on 5 September 2024 and discussed the Project in detail, as well as obtaining her feedback on the proposal and matters to consider.

Entity	Approach	Purpose and outcomes
State Member of Parliament	Email	An introductory email for the Project was sent to the Member for Kiama, Gareth Ward MP on 20 August 2024, with an offer to meet with him to discuss the Project further. Gareth Ward MP has been provided with regular email updates following consultation events and project milestones.
	In-person meeting	Firm Power met with Gareth Ward MP on 16 September 2024 at the Project site, along with the landowner, to discuss the Project in detail and gather feedback on the proposal.
Traditional Custodians	Email	Firm Power contacted the Illawarra Local Aboriginal Land Council (LALC) on 1 October 2024 to introduce the Project and offer a briefing for interested parties. A meeting was scheduled for 23 October 2024, however the LALC representative was unable to attend.
	Email	Additional project information was shared with the Illawarra LALC in a follow-up email on 23 October 2024, with a further invitation to discuss the Project at a meeting. A further email invitation was sent on 3 October 2024 to attend the consultation event at the farmers markets.
TfNSW (Transport for New South Wales)	Meeting	Firm Power met with TfNSW on 15 November 2024 to discuss the Project. The meeting covered topics such as logistics and requirements for the Project, traffic and transport, selection of viable routes, and vehicle and infrastructure considerations. Additional topics included traffic management, cumulative impacts, and further studies that would be needed for the Project.
Other Stakeholders > Surrounding business owners and occupiers	Notification letter	Notification letters/emails have been sent to other key stakeholders, out of courtesy and prior to the lodgement of the Scoping Report. This is to introduce the project and to open lines of communication for more detailed engagement during the preparation of the EIS.

Entity	Approach	Purpose and outcomes
<ul style="list-style-type: none"> > Kangaroo Valley Chamber of Tourism & Commerce > KV-POPSE > Kangaroo Valley Public School > The Scots College - Glengarry Campus > Kangaroo Valley Pre School > Kangaroo Valley Safaris > Pioneer Village Museum > Holiday Haven Kangaroo Valley > Valley Outdoors > Kangaroo Valley Adventure Company > Kangaroo Valley Escapes > Friendly Inn Community Garden Committee > KV Tennis Club 		

5.2 Community Views

The community were largely agreeable to or neutral about the project, with many requesting to be kept up to date. Key questions from the engagement were:

- > **Source of Batteries:** Where will the batteries for the project be sourced from?
- > **Lifespan and Technology:** What is the project lifespan and technology being used or considered (such as Lithium Ion)?
- > **Footprint:** What is the size of the project and how many batteries are required for this project?
- > **Ownership:** Who owns Firm Power, and what is its role in the project?
- > **Project Funding:** Who is funding the project, and what other interest do they have?
- > **On-Site Generation:** Will there be any energy generation on-site, or will the project solely focus on storage and distribution?
- > **Relation to other projects in the region:** Is Firm Power associated with the Shoalhaven Hydro Expansion project?
- > **Community Impacts and Benefits:** What impacts will the project have on the local community, and are there any direct benefits available to them?
- > **Fire Risk:** What measures have been taken to assess and mitigate the risk of fire associated with the project?
- > **Energy Flow:** Where will the stored energy come from, and where will it be distributed or utilised?
- > **Construction Timeline and Impact:** What is the expected construction timeline, and what are the anticipated impacts on the community during this phase?
- > **Environmental and Sensory Impacts:** What are the potential visual, noise, and wildlife impacts of the project, and how will these be addressed?
- > **Electricity Costs:** Will the project contribute to reducing electricity costs for local residents or the broader network?

Firm Power will continue to engage with the community and provide further information on the above matters as design progresses and studies are completed.

5.3 Future Community Engagement

Firm Power is committed to building ongoing relationships of trust with the local community and impacted neighbours. This commitment to appropriate and responsive engagement will continue throughout the course of the EIS preparation. By providing ongoing communication with stakeholders, we ensure the opportunity to eliminate, reduce or manage impacts identified and explored in the Project planning stage along with opportunities to enhance benefits of the Project.

Firm Power intends to engage with:

- > Shoalhaven City Council;
- > Transport for NSW;
- > Department of Planning, Housing and Infrastructure;
- > Transgrid;



- > Heritage NSW;
- > Department of Climate Change, Energy, the Environment and Water;
- > Department of Primary Industries;
- > Fire and Rescue NSW;
- > NSW Rural Fire Service; and
- > Surrounding residents, landowners, businesses and local community groups.

Proposed stakeholder engagement will be informed by a Community and Stakeholder Engagement Plan as part of the EIS. The community and stakeholder engagement activities will aim to meet the following objectives:

- > To ensure all community and stakeholders have access to factual, 'plain English' and up-to-date information in which to make informed decisions regarding the project.
- > To further explore initial concerns or ideas raised by community and regulatory stakeholders in early engagement activities.
- > To work with community and regulatory stakeholders to mitigate remaining concerns, enhance opportunities for benefits and manage remaining impacts.



6. PROPOSED ASSESSMENT OF IMPACTS

6.1 Introduction

An initial review of information has been completed to provide a summary of matters requiring assessment at EIS preparation stage and the level of assessment required for each issue. By reference to the SSD Guidelines, a number of factors have been considered through this process, including:

- > the scale and nature of the likely impact of the project and the sensitivity of the receiving environment;
- > whether the project is likely to generate cumulative impacts with other relevant future projects in the area; and the ability to avoid, minimise and/or offset the impacts of the project, to the extent known at the scoping phase.

The following sections provide details on specific assessment areas. A summary table is provided at **Appendix A** categorising these areas as per the Scoping Report Guidelines. By reference to Appendix A of the guidelines, the level of assessment is either detailed, standard or 'matters requiring no further assessment in the EIS'. Detailed assessment is for those impacts likely to have a significant impact, including cumulative impacts. A standard assessment is unlikely to result in significant impacts. A standard assessment may still include technical specialists, however impacts in this category are likely to be well understood and easy to predict.

The level of assessment is identified as standard and is summarised as follows:

- > Standard
 - Access;
 - Amenity;
 - Biodiversity;
 - Built Environment;
 - Economic;
 - Hazard and Risks;
 - Aboriginal Heritage;
 - Land Use;
 - Social Impact;
 - Water.
- > Matters requiring no further assessment in the EIS are as follows:
 - European heritage
 - Air quality

6.2 Access

A preliminary review of potential traffic has been completed by Premise and a preliminary review of the proposed over-dimensional vehicle route has been completed by the Ares Group – refer **Appendix B**. The route assessment included physically driving the over-dimensional route from the port of import to the site.



6.2.1 TRANSPORT ROUTE

The proposed port of import for project infrastructure is Port Kembla – refer **Figure 9**. The route from the port is likely to be via the Picton Road to the Hume Highway. A primary and alternate route have been considered, both of which use the approved heavy vehicle networks as much as possible. Routes to the development site from the south are also being considered in the event that the chosen supplier can provide infrastructure appropriately sized to suit the southern routes. Alternatively, a southern route is also under investigation via either Wollongong/Bomaderry or Batemans Bay. The route shall be determined prior to lodgement of the EIS.

The only high risk movement is associated with the transfer of the project transformer, which is assumed to have a weight of approximately 101 tonnes (total weight of vehicle and transformer is anticipated to be approximately 144 tonnes). The transformer would be transported on a low loader configuration with a conceptual length of approximately 28 m.

One challenging area of the northern route used by both the primary and alternate northern routes is a section of Moss Vale Road, which drops down a steep escarpment through a series of tight switchback turns into Kangaroo Valley. Solely in relation to the transfer of the project transformer(s) (i.e. three movements for single phase transformers) Ares propose navigating this section of the journey using an 8-axle self-propelled modular transporter (SPMT). An SPMT moves under its own power and does not require a prime mover to tow it. This process will require careful negotiation and approvals via the National Heavy Vehicle Regulator (NHVR) licencing scheme. Other options for transporting the project transformer(s) are concurrently being explored, with studies underway.

All other low risk over-dimensional movements (i.e. associated with the transfer of construction equipment, etc) would be expected to be less than 26 m in length. These would be subject to NHVR licencing for the portion of the journey that is not on the approved heavy vehicle network.

6.2.2 VEHICLE ACCESS

Access to the site is to be from Old Bendeela Road with two locations currently under investigation.

Access will be upgraded to accommodate the largest vehicle accessing the site. Firm Power will consult with Council around access requirements and any local road upgrades that may be required to accommodate project construction traffic movements.

The construction access will also be used by operational traffic, which is expected to be around 5-10 light vehicles per week.





- Legend**
- Start: Port Kembla
 - Finish: Kangaroo Valley Bess
 - Route 1 - Primary
 - Route 2 - Alternate
 - Major Road
 - NPWS Reserve
 - State Forest

Premise

FIRM POWER

Kangaroo Valley Bess

Figure 9
Transport Route

6.2.3 TRAFFIC GENERATION

The construction phase of the project triggers much higher traffic generation rates, and larger vehicles, than the operational phase, and thus this portion of the project has been used to generate project traffic generation rates.

Traffic generation figures will be considered by reference to light and heavy vehicles accessing the site during the construction phase and will consider current traffic rates on Bendeela Road. It is noted that the traffic impact assessment for the Shoalhaven Hydro Main Works project included traffic counts on Bendeela Road in 2019, with factors applied to 2022 rates. The peak traffic movements on Bendeela Road are on Sunday between 12 pm and 1 pm at 145 vehicles per hour (vph) and Saturday between 12 pm and 1 pm at 110 vph. Heavy vehicles account for 15.3% of total traffic travelling on the Moss Vale Road. Monday to Friday peak movements are approximately 40-80 vehicles per hour.

The project traffic during the construction phase is influenced by the arrival and departure of construction workers and the arrival and departure of heavy vehicles delivering construction equipment. The peak hours for the project are therefore likely to be the AM and PM peaks when construction workers start and finish their shift. As workers are arriving, the AM and PM peak is unlikely to coincide with heavy vehicle deliveries.

Firm Power will investigate the use of mini-buses to transfer workers to the site as a measure to minimise vehicle movements. Conservatively assuming that all 60 construction workers during the peak period of construction drive themselves to site would result in AM and PM peaks of 60 light vehicles. Given the low volumes of traffic on Bendeela Road and the short duration of this peak period, these numbers can be accommodated by the local traffic network without significant impact.

6.2.4 SITE ACCESS

Site access would be expected to be designed to achieve the standards of a standard rural property access, as per Figure 7.4 of Austroads, with some adjustments to design radius to accommodate the largest design vehicle. Firm Power will coordinate with Council on this matter to ensure that the access treatment meets Council requirements. This access will be maintained and used for operational access and future project decommissioning.

A concept design of the proposed access would be included in the project TIA and any physical impacts associated with the construction of the proposed access would be addressed by relevant supplementary reports.

6.2.5 CARPARKING

To accommodate up to 60 light vehicles on site during construction would require an area of approximately 1,300 square metres (based on standard car park dimensions as per AS2890).

There is ample room on the site to accommodate this area.

The uses of small buses to transfer construction workers would enable this area to be reduced.

6.3 Air

Air impacts arising from dust generation and vehicle emissions during construction are of a limited nature and relatively easily predicted. Once the project is operational, impacts to air quality are expected to be of a limited nature.

It is not proposed to assess air quality impacts in the EIS.

Implementation of appropriate mitigation measures via a construction environmental management plan would be expected to address any potential air quality impacts.

6.4 Amenity

6.4.1 VISUAL IMPACT

An initial review of the potential for visual impacts has been prepared by Premise and is provided in **Appendix D**.

The BESS is to be located within a rural area characterised by undulating farmlands and dense vegetation. Due to these factors, it is expected that potential for landscape character and visual impacts will be limited to areas closer to the site, including along Bendeela Road. There are 34 receivers identified within a one (1) kilometre buffer of the development site. Of these receivers, GIS mapping identified 19 receivers to have no visibility of the site and 15 receivers to have potential visibility of the site.

Of the 15 receivers with potential visibility:

- > two (2) receivers are associated with the development site;
- > two (2) receivers may have direct views;
- > five (5) receivers have potential for views from an elevated location;
- > two (2) receivers may have a distant view; and
- > one (1) receiver may have a potential views of the transmission lines but not the BESS infrastructure.

The preliminary visual catchment prepared for the development identifies that views from the public domain would be somewhat contained by the undulating landscape, particularly to the south and west. The review also identifies that Kangaroo Valley Nature Reserve is located approximately one kilometre to the east of the development site.

With respect to the construction and operational phases of the project, the review noted the potential for a range of visual impacts during construction and operational phases. Construction impacts may include:

- > The presence of construction activity on the site
- > Earthworks required to prepare the landform of the site
- > Temporary construction facilities including:
 - construction compounds and laydown areas
 - site office and vehicle parking
 - construction access tracks

- stormwater and sediment controls for the project area.
- > Construction vehicle movements along surrounding roads

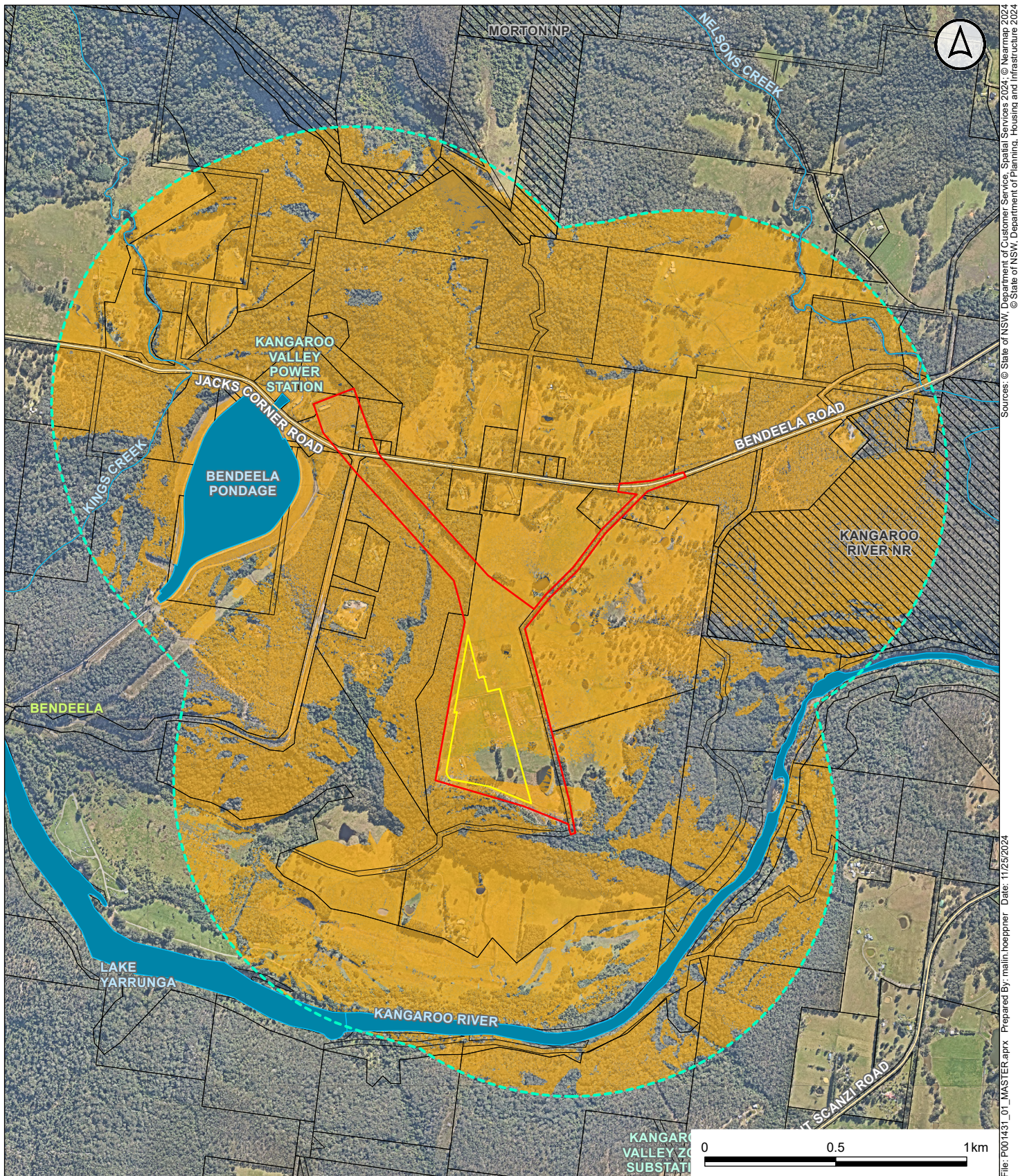
Impacts during operation would be associated with the potential visibility of the following infrastructure associated with the project:

- > Electrical infrastructure including battery and medium voltage power station (MVPS) units arranged in rows
- > Transformers, switchgear and overhead transmission lines connecting the BESS to the existing electricity transmission network
- > Other permanent ancillary infrastructure including small buildings (site office, operation and maintenance facility and control room)
- > Car parking, internal access tracks, security fencing and signage.

A detailed Visual Impact Assessment (VIA) would be provided as part of the EIS to further analyse the potential visual impact of the project. The detailed VIA will include an assessment of the likely visual and landscape impacts of the project on surrounding residences, including field verification of the visibility analysis and an assessment of representative viewpoints. Both private and public vantage points would be assessed in the VIA to identify the potential visual impacts of the project.

Where relevant, the VIA will identify appropriate measures to help minimise the potential for the project to visual amenity. This would include the preparation of a concept landscape plan to provide details of any proposed screening vegetation.





Legend

- Site
- BESS Investigation Area
- 1km Site Buffer
- Lot
- Major Road
- Major Water Body
- Major Watercourse
- NPWS Reserve

Overall Land Visible to Receivers



FIRM POWER
Kangaroo Valley BESS

Figure 10
Visual Envelope

6.4.2 NOISE AND VIBRATION

Noise and vibration impacts are expected to occur during both the construction and operation of the Kangaroo Valley BESS. In relation to construction activities, this would include preparatory earthworks, and delivery and assembly of the BESS infrastructure. During operation, this would include operation of the BESS and noise from associated vehicles.

Within 1 km of the project there is approximately 36 non-associated residential receivers and 2 non-associated non-residential receivers – refer **Figure 3**. The closest-non associated residential receivers are R15, approximately 350 m to the west, R9, approximately 450 m to the north-west, and R2, approximately 490 m to the north-east. All other receivers are greater than 500 m from the project.

The potential noise and vibration impact of the construction and operational BESS on nearby sensitive receivers would be considered in a Noise and Vibration Impact Assessment to be provided as part of the EIS. The Noise and Vibration Impact Assessment will be prepared in accordance with:

- > *NSW Interim Construction Noise Guideline;*
- > *NSW Noise Policy for Industry;*
- > *NSW Road Noise Policy;* and
- > *Assessing Vibration: A Technical Guidelines.*

6.5 Biodiversity

6.5.1 METHODS

A preliminary biodiversity assessment has been completed by Ecoplanning and is provided in **Appendix E**. Preliminary biodiversity values have been assessed through a combination of desktop searches and a site survey.

6.5.1.1 Desktop review

An initial desktop review was completed, which included a review of:

- > Biodiversity Values Map (NSW DCCEEW 2024a)
- > BioNet Atlas of NSW Wildlife (NSW DCCEEW 2024b)
- > NSW BioNet Vegetation Classification (NSW DCCEEW 2024c)
- > NSW State Vegetation Type Map (NSW DCCEEW 2022)
- > NSW ePlanning Viewer (NSW Government 2024)
- > Protected Matters Research Tool (Cwth DCCEEW 2023)

The outcomes of this investigation informed the completion of initial site visits.

6.5.1.2 Field Survey

Site visits were completed on 15 August and 3 October 2024. These visits included traversing the site on foot and recording locations of habitat features and riparian areas via georeferenced mapping. Regional vegetation mapping and potential constraints were validated and mapped and survey plots for vegetation integrity were completed within the proposed development footprint. It is noted that

there were access limitations due to farming operations. These areas that could not be accessed contained small patches of planted native vegetation and will be surveyed during future biodiversity assessments.

6.5.2 RESULTS

6.5.2.1 Biodiversity Values Map

The development site contains one patch of vegetation that is mapped as high biodiversity value. An area is identified as biodiversity value if it meets the criteria of 'Identified Old Growth Forest'. The mapped land is within the anticipated transmission connection to the Kangaroo Valley Substation.

6.5.2.2 Waterfront land

There are two 1st order watercourses and one 3rd order watercourse within the development site. The 1st order streams are located in close proximity to where the BESS components are likely to be located, whereas the 3rd order stream traverses the transmission connection path.

The field surveys also identified an additional watercourse adjacent to the Kangaroo Valley Substation which is yet to be determined within the Strahler stream order.

Land located within 40m of a mapped watercourse is identified as waterfront land under the *Water Management Act 2000*. Activities within this land typically require a Controlled Activity Approval (CAA), noting this requirement does not apply to SSD projects. It is expected that the relevant waterfront guidelines would however apply including the provision of appropriate vegetated riparian zones would apply. It is noted that mapped watercourses with no defined stream bed or bank are not watercourse for the purposes of the guidelines or legislation.

6.5.2.3 Vegetation

The regional vegetation mapping identified that within a 1500 metre radius of the site, 72% of the area comprises native vegetation, with the remainder generally used for agricultural and industrial purposes. Plant Community Types (PCT) identified within the study included:

- > PCT 3056 Central Eastern Ranges Riparian Dry Rainforest
- > PCT 3191 South Coast Ranges Moist Gully Forest
- > PCT 3258 Sydney Basin Creekflat Blue Gum-Apple Forest
- > PCT 3270 Shoalhaven Lowland Wet Gully Forest
- > PCT 3654 Shoalhaven Lowland Bloodwood Shrub Forest

Field surveys validated the presence of PCT 3270 and PCT 3654, as well as the following additional PCTs:

- > PCT 3187 Shoalhaven Hinterland Peppermint Wet Gully Forest
- > PCT 3267 Shoalhaven Foothills Turpentine Forest
- > PCT 3327 Illawarra Lowland Red Gum Grassy Forest
- > PCT 3588 Shoalhaven Foothills Bloodwood Heathy Forest

Of the identified PCTs, only PCT 3327 was identified as having conservation status under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Biodiversity*

Conservation Act 2016 (BC Act). It is noted that the area identified as PCT 3327 during field surveys was located within the transmission connection pathway, with condition classes identified as 'intact' and 'mowed'.

The development site also included isolated patches of planted native trees which will require further assessment to determine whether these areas qualify as PCTs.

Agricultural areas within the development site are classed as exotic vegetation comprising exotic species including kikuyu grass, ryegrass, medic and planted pine trees.

No threatened flora species were identified during field studies, with identified flora species listed in the biodiversity assessment.

6.5.2.4 Fauna

Several habitat features were identified within the development site which may be utilised by native fauna. These features include hollow bearing trees (HBTs), riparian areas, farm dams and piles of debris and construction materials.

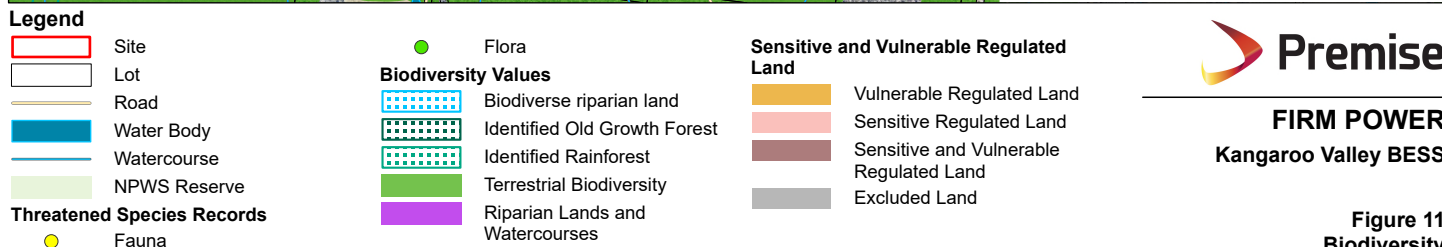
There are several threatened species known to occur in the area that may use HBTs, including the Gang-gang Cockatoo and the Greater Glider. Further field surveys will be required to identify all HBTs within the development site.

During the field survey on 3 October 2024, the threatened species South-eastern Glossy Black-Cockatoo was heard on the western boundary of the site. Additional fauna species identified during field surveys are listed within the biodiversity assessment.

6.5.3 NEXT STEPS

Given the extent of native vegetation on and surrounding the development site, as well as the presence of a threatened species in close proximity to the site, a Biodiversity Development Assessment Report (BDAR) will be required. The following tasks will be required to inform the BDAR:

- > Based on the findings of the field surveys a list of 'candidate threatened species' has been identified which may require survey or expert reports.
- > There are patches of planted native vegetation that were not able to be surveyed due to agricultural activities that will require further surveying.
- > Further field surveys will be required to identify and map all HBTs within the development site.



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6.6 Built Environment

The development site is situated within a rural setting with 34 non-associated residential receivers located within a 1 km buffer distance of the proposed development. Lot 10 DP1183451 is predominantly surrounded by agricultural farm lands used predominantly for grazing as well as dense woodland areas. The existing Transgrid Kangaroo Valley 330 kV switching station is located to the northwest of the host lot. An existing 330 kV overhead powerline runs from the southeastern corner of the host lot to the northwest. Investigations are underway with Transgrid to utilise this alignment, subject to modification, to enable the connection of the project to the Transgrid Kangaroo Valley 330 kV switching station. Alternatively a duplicate connection line would be provided, either above or below ground. The Kangaroo Valley Hydro Plant, Bendeela Pondage and Bendeela Hydroelectric Pumping Station are located to the north-west of the development site.

It is possible that the BESS and associated infrastructure may introduce additional visual features into the local environment although noting that the environment is influenced by the existence of existing infrastructure. This will be addressed via the Visual Impact Assessment to be prepared as part of the EIS.

6.7 Economic

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 a stable, renewable electricity supply. This is 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.

Whilst impacts to land values are not a material planning consideration, any perceived economic impacts to property prices of local residents as a consequence of air, visual, noise and vibration, hazard, land use, social or water impacts will be addressed through mitigation measures such as the implementation of a CEMP, landscaped buffers and adequate buffers to associated and non-associated dwellings.

Opportunities for community benefit sharing will be investigated and early stage discussions with Council have commenced in this regard.

Opportunities will be investigated through local procurement to engage local people and collaborate with local businesses throughout the construction phase. This will be detailed in the project economic assessment.

A preliminary scoping assessment of these impacts is provided throughout **Section 6**. Each of these impacts is to be considered in greater detail in the EIS.

6.8 Hazards and Risks

6.8.1 HAZARDOUS AND OFFENSIVE DEVELOPMENT

Impacts from an electromagnetic field (EMF) may be generated by transmission lines and underground cables. EMF risks are expected to be below the International Commission on Non-Ionizing Radiation

Protection (ICNIRP) guidelines (adopted by the Australian Radiation Protection and Nuclear Safety Agency, ARPANSA).

Nevertheless, there is a perception that components of the proposed development, primarily the inclusion of a switching station and BESS, may significantly alter the EMF within a locality and thereby cause harm to residents and the environment.

Lithium batteries are identified as Class 9 under the *Australian Dangerous Goods Code* (National Transport Commission 2020). Under the *Hazardous and Offensive Development Application Guidelines – Applying SEPP 33* (Department of Planning 2011) given effect under Section 4.14 of *State Environmental Planning Policy (Resilience and Hazards) 2021*. Class 9 goods do not exceed the screening thresholds as they “pose little threat to people or property” (Department of Planning 2011, p. 33).

A Preliminary Hazard Analysis (PHA) is to be provided as part of the EIS and will assess EMF levels associated with the proposed infrastructure.

The potential for cumulative impacts associated with the operation of the project would also be considered, as discussed in **Section 3.3**.

6.8.2 BUSHFIRE

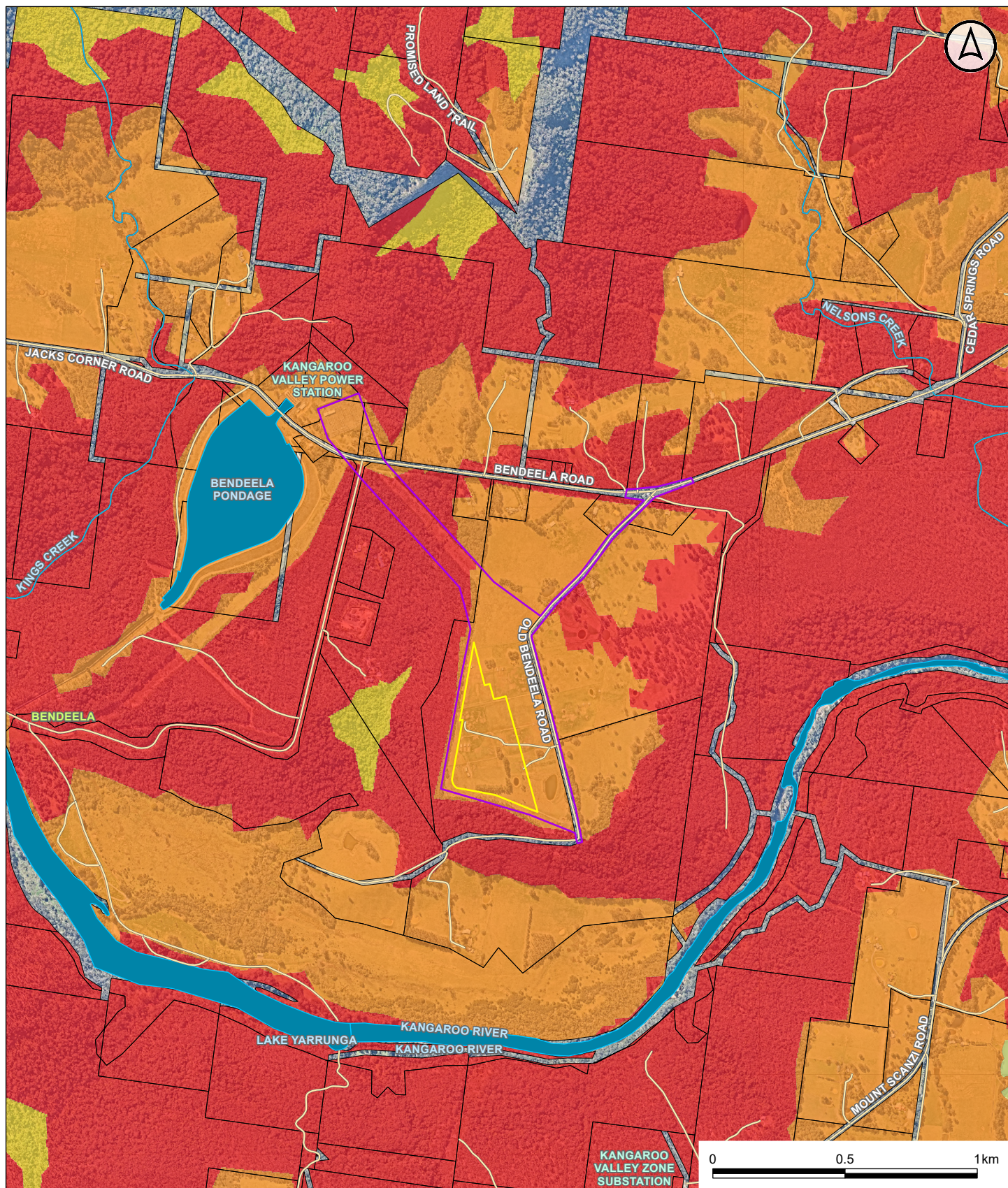
The entirety of the development site is mapped as being bushfire prone land pursuant to the NSW Planning Portal Spatial Viewer (refer **Figure 12**). The BESS is proposed to be located on land mapped as containing Vegetation Category 2 bushfire prone land with the transmission line crossing portions of land mapped as Vegetation Category 1.

A Bushfire Assessment would be provided as part of the EIS to ensure consistency of the development with the NSW Rural Fire Service (RFS) guidelines, *Planning for Bushfire Protection 2019*, including the 2020 addendum.

6.8.3 FLOODING

The development site is not mapped as flood prone land pursuant to the NSW Planning Portal Spatial Viewer, however, it is noted that there are several class 1 drainage lines and farm dams located within the development site. Potential flood impacts resulting from these watercourses along with pre and post development flood scenarios would be addressed as part of the EIS. This would include a flood impact assessment report.





- Legend**
- Site
 - BESS Investigation Area
 - Lot
 - Road
 - Major Water Body
 - Major Watercourse
 - NPWS Reserve

- Bush Fire Prone Land**
- Vegetation Category 1
 - Vegetation Category 2
 - Vegetation Category 3
 - Vegetation Buffer

Premise

FIRM POWER
Kangaroo Valley BESS

Figure 12
Bushfire Prone Land

6.9 Heritage

6.9.1 EUROPEAN HERITAGE

A review of the State Heritage Inventory (SHI) and of Schedule 5 of the LEP confirmed that there are no local or state heritage listed items located at or within proximity to the development site. The closest heritage items to the development site are as follows (and shown in **Figure 14**).

- > Pioneer Farm – historic village including slab cottage (LEP #I239) – located approximately 2.8 km northeast
- > Hampden Bridge (SHR #02024 and LEP #I241) - located approximately 3 km northeast
- > Hampton Bridge Heritage Conservation Area (LEP #C4) is also located approximately 2.8 km northeast of the development site.

In addition, there are no heritage sites listed on the Register of the National Estate (RNE) or on the National Trust Heritage Register located at or within proximity to the development site.

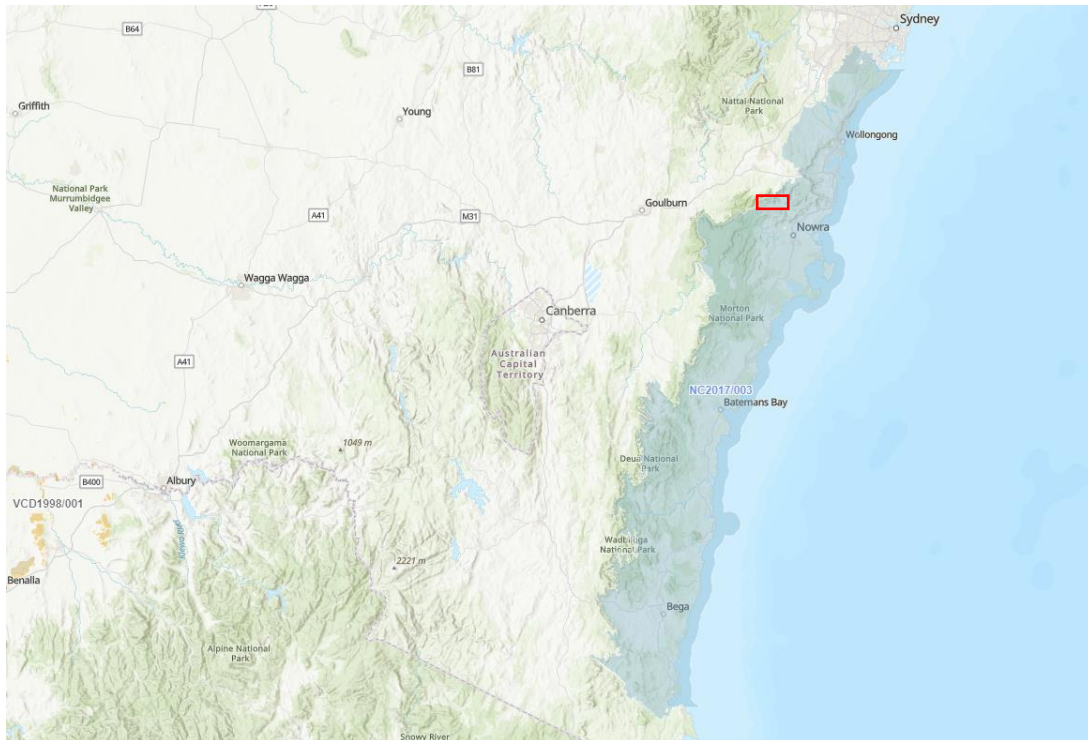
Due to the proximity of these heritage sites and heritage conservation area, it is not likely that the proposed development will adversely impact upon European/historic heritage.

Further consideration and assessment of historic heritage is not proposed within the EIS.

6.9.2 ABORIGINAL CULTURAL HERITAGE

A basic search of the Aboriginal Heritage Information Management System (AHIMS) online database was undertaken on 4 October 2024. The parameters of this search included the development site with a buffer of approximately 1.5 km. The results identified five previously recorded Aboriginal sites, the closest of which is approximately 2 km southwest (refer **Figure 14**). AHIMS search results are provided in **Appendix F**.

A search of the National Native Title Tribunal register and the Native Title Vision online databases has identified one (1) native title claim encompassing the entirety of the development site (South Coast People: Tribunal No NC2017/003). This native title claim area encompasses an area of approximately 16807.5125 km² and includes the following LGA's: Bega Valley Shire Council, Campbelltown City Council, Eurobodalla Shire Council, Liverpool City Council, Shellharbour City Council, Shoalhaven City Council, Sutherland Shire Council, The Council of The Municipality of Kiama, Wingecarribee Shire Council, Wollondilly Shire Council, Wollongong City Council, Queanbeyan-Palerang Regional Council, Snowy Monaro Regional Council (refer land in blue in **Figure 13**). This native title claim was registered on 31 January 2018 and has not yet been determined.

Figure 13 – Native Title Claim (NC2017/003) Area

The closest watercourse to the development site is the Kangaroo River situated 800 m south of the development site. A number of farm dams and drainage lines also exist across the development site and in the surrounding landscape. The development site has been utilised for agricultural land uses and has such, been subject to ground disturbance activities, however due to its proximity to nearby watercourses and dense woodland areas, the likelihood of Aboriginal occupation is considered likely.

An Aboriginal Cultural Heritage Assessment (ACHA) will be provided to support the EIS to identify and assess potential impacts to Aboriginal heritage as a result of the proposed development. This will involve a site survey across the land, consultation with Aboriginal parties and an assessment of potential impacts relevant to the native title claim.



Legend

- Site
- BESS Investigation Area
- Lot
- Road
- Water Body
- Watercourse
- NPWS Reserve
- NPWS Reserve

Local Heritage

- Conservation Area - General
- Item - General
- State Heritage Register
- Curtilage
- Aboriginal Heritage Sites



FIRM POWER
Kangaroo Valley BESS

Figure 14
Heritage

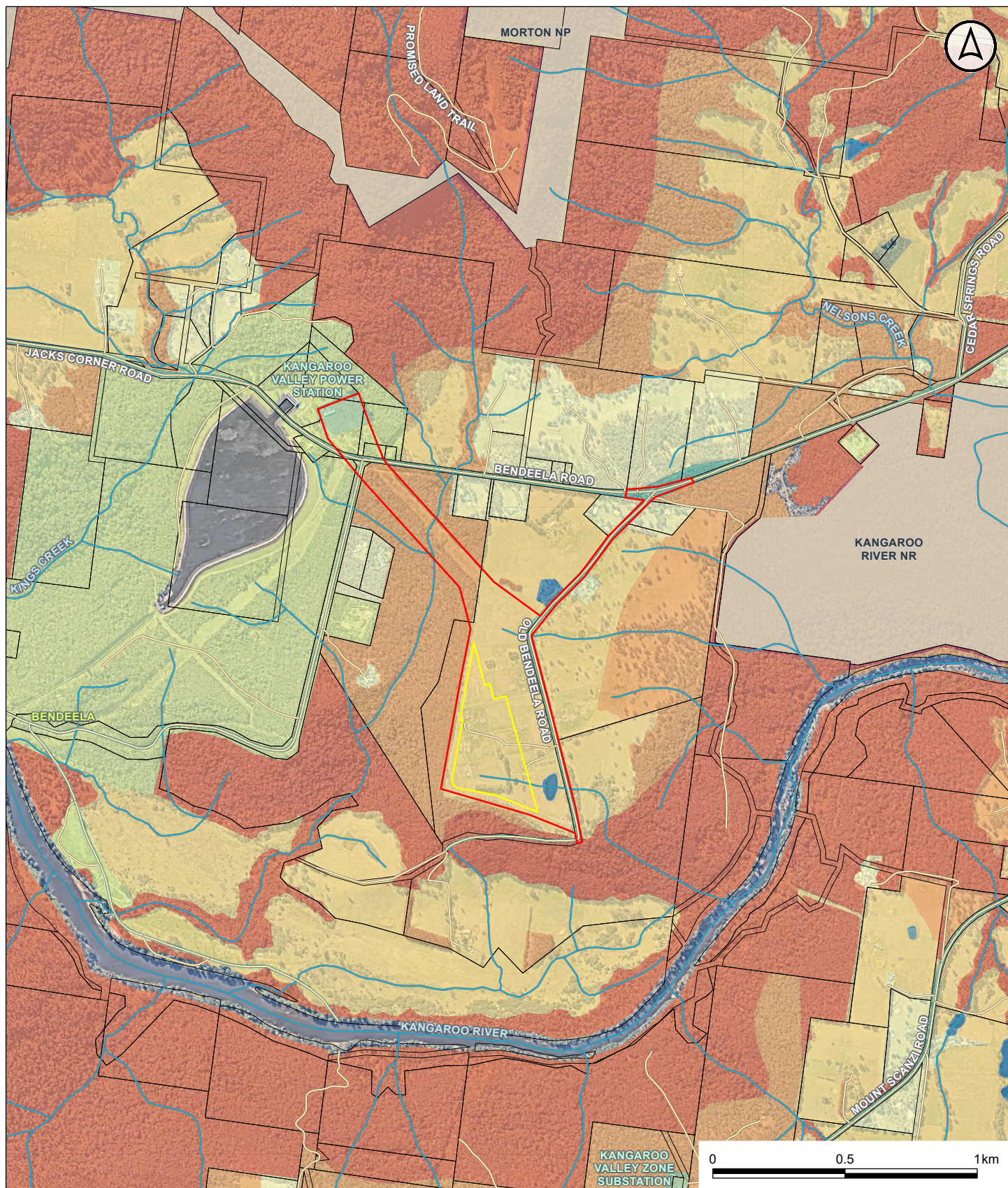
6.10 Land Use

A review of the MinView online database has confirmed that the development site is not subject to any existing exploration or mining titles or applications.

The BESS site is zoned as RU2 Rural Landscape under the LEP and has a land and soil capability of moderate to severe limitations (Class 4) across the BESS site while the transmission line will occur on land with very severe limitations (Class 6) (refer **Figure 16**). The development site is not mapped as biophysical strategic land (BSAL) or on a draft state significant agricultural land map.

It is expected that the SEARs will require preparation of a Land Use Conflict Risk Assessment (LUCRA) to consider the potential for conflict between the proposed Kangaroo Valley BESS and adjacent or nearby land uses. This will consider potential conflicts and potential mitigation measures to reduce conflicts to an acceptable level. The LUCRA will be prepared in accordance with the Department of Industry's *Land Use Conflict Risk Assessment Guide* (2011).





Legend

- Site
- BESS Investigation Area
- Lot
- Road
- Watercourse
- NPWS Reserve

NSW Landuse 2017 v1.5

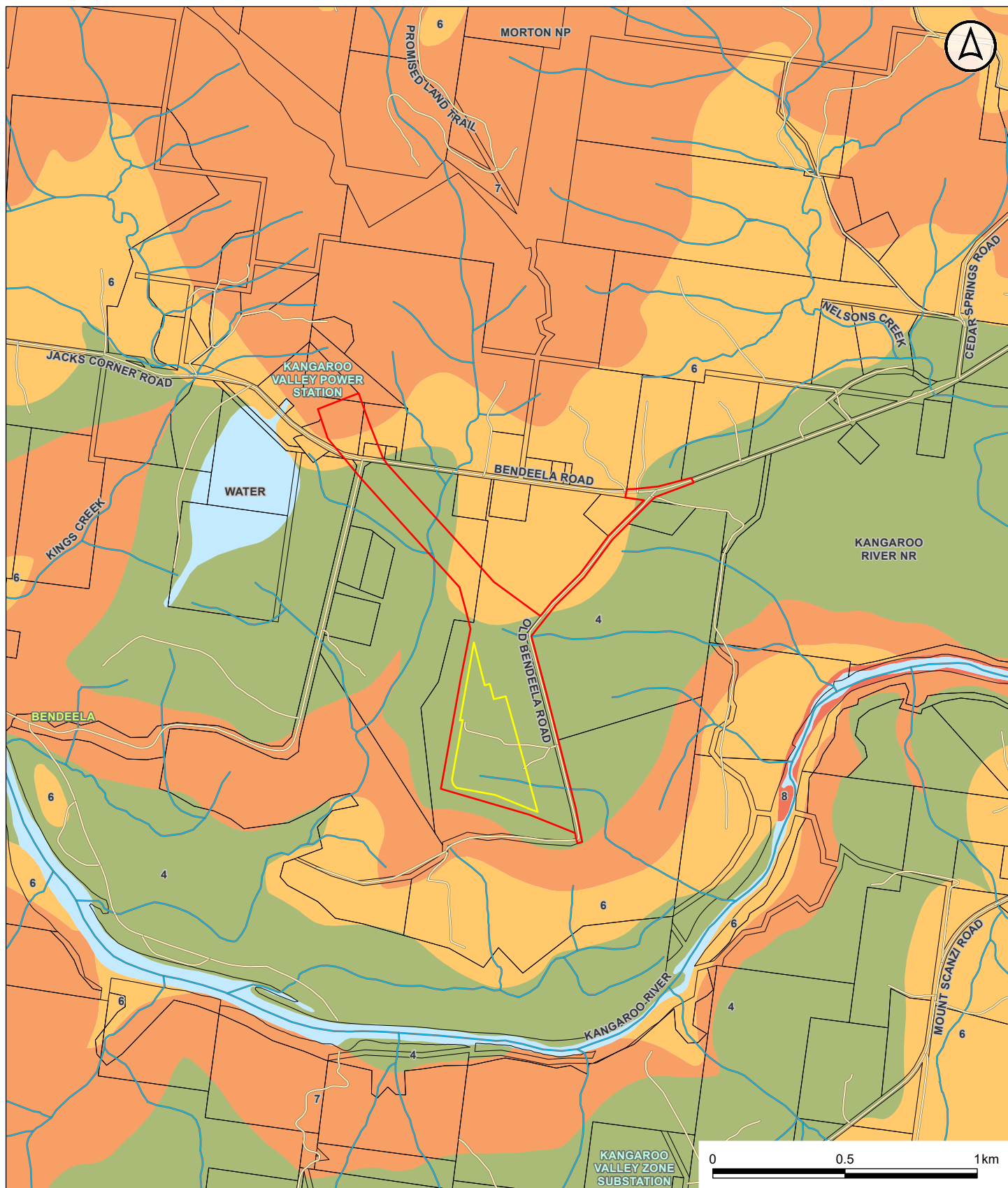
- 1.1.0 Nature conservation
- 1.3.0 Other minimal use
- 2.1.0 Grazing native vegetation
- 3.2.0 Grazing modified pastures
- 5.4.0 Residential and farm infrastructure

- 5.5.0 Services
- 5.6.0 Utilities
- 5.7.0 Transport and communication
- 6.2.0 Reservoir/dam



FIRM POWER
Kangaroo Valley BESS

Figure 15
Land Use



Legend

- Site
- BESS Investigation Area
- Lot
- Road
- Watercourse

Land and Soil Capability (LSC)

- 4 - Moderate to severe limitations
- 6 - Very severe limitations
- 7 - Extremely severe limitations
- 8 - Extreme limitations
- Water



FIRM POWER
Kangaroo Valley BESS

Figure 16
Land and Soil Capability

6.11 Social Impact

6.11.1 APPROACH

A preliminary social impact assessment (SIA) has been conducted for the project. The aim of the assessment is to identify likely social impacts before considering suitable refinements or other early responses. The findings in the scoping phase will inform the level of community engagement and SIA analysis required for the next phases of the planning approvals process, i.e. preparation of the EIS.

The assessment has been informed by a variety of data sources, including a review of existing social or administrative data such as the latest Australian Bureau of Statistics (ABS) Census, targeted stakeholder and community engagement, field observations from a site visit, initial technical assessments for the Project and the use of desktop research in the form of findings and experience from similar projects already in operation. All social impacts are considered from the point of view of the affected people, rather than the Project itself.

The assessment has been conducted in accordance with the relevant guidelines provided by DPHI.

6.11.2 SOCIAL BASELINE

The development site is approximately 10 km west of Kangaroo Valley, in the Shoalhaven City LGA.

Shoalhaven LGA is situated on the south coast of NSW, approximately 200 km south of Sydney, and covers an area of approximately 4,567 square kilometres. Approximately 70% of the LGA is managed land, such as National Parks. The population of the LGA at the 2021 census was 108,531. Shoalhaven features 49 towns and villages and 165 km of coastline. Urban areas include the regional centre of Nowra-Bomaderry, and major urban areas of Milton-Ulladulla, Huskisson-Vincentia, Jervis Bay-St Georges Basin, Culburra Beach, and Sussex Inlet. The historic towns of Berry and Kangaroo Valley are located inland, and Shoalhaven's smaller towns, villages and settlements are spread along the coast.

The development site is located to the west of the town of Kangaroo Valley, within statistical area level 1 (code: 11401127215). For this area, the population at the 2021 census was 277 persons.

The economy of the Shoalhaven LGA is driven by the defence and manufacturing sectors, health and social services sectors, with the tourism and retail sectors also playing important roles.

6.11.3 POTENTIAL SOCIAL IMPACTS AND MATTERS REQUIRING FURTHER ASSESSMENT

The social impact scoping worksheet is provided in **Appendix G**.

Key potential benefits identified include:

- > Local procurement and economic opportunities during construction of the project including workforce, short-term accommodation, construction materials and amenities.
- > Investments in community facilities through contributions to local Rural Fire Service (RFS)
- > Contributing towards the renewable energy transition
- > A more stabilised and reliable electricity network

Key potential impacts identified include:

- > Noise, vibrations, dust and visual impacts for close neighbours both during construction and operation
- > Pressure on housing during construction, where short-term accommodation is not available
- > Pressure on local employment, where cumulative renewable energy construction in the area may lead to shortage of workers.
- > Fire risk concerns due to bushfire prone area.

The above predicted benefits and impacts require further research and refinement during the EIS phase of the project in response to design development, detailed environmental assessment, engagement outcomes, and to align with the requirements of the SEARs.

Mitigation or enhancement strategies will be detailed in a complete SIA to be provided as part of the EIS in accordance with the *Social Impact Assessment Guidelines 2023* (DPIE 2023). This assessment will be proportionate with the scale, complexity and likely impacts and benefits of the project.

6.12 Water

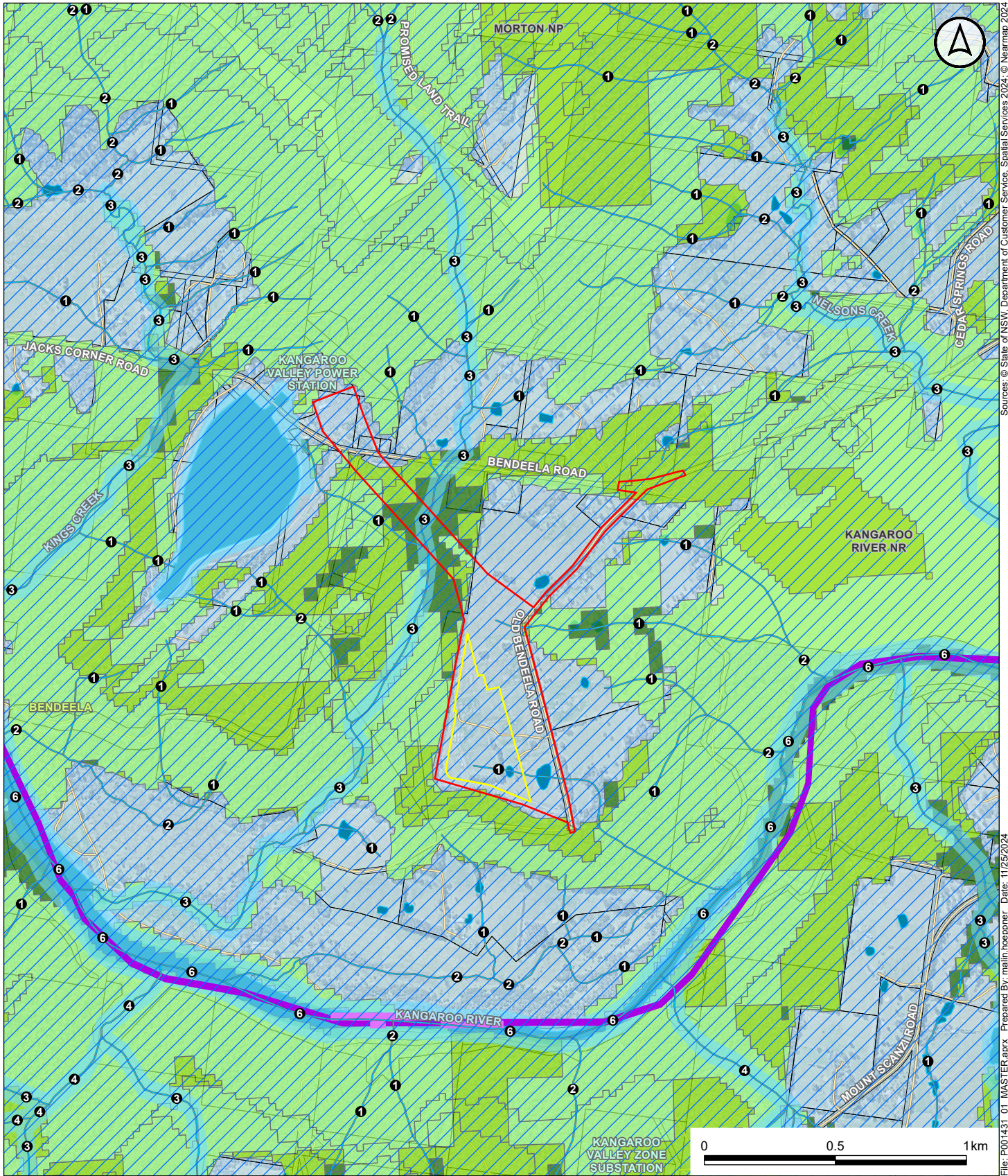
The development site is not mapped as groundwater vulnerable under the LEP.

The area of the proposed BESS features a 1st order stream draining to the east towards the Kangaroo River. A 3rd order stream crosses the proposed transmission alignment.

Flooding is discussed in **Section 6.8.3**.

Further assessment of potential water quality impacts and erosion impacts will be undertaken and provided as part of the EIS.





Legend

- Site
- BESS Investigation Area
- Lot
- Road
- Water Body
- Watercourse (Strahler Stream Order)
- NPWS Reserve

- Key Fish Habitat - Southern Rivers Basin
- Sydney Drinking Water Catchment
- Groundwater Aquifer
- Aquatic Groundwater Dependent Ecosystems - Shoalhaven River**
- Moderate potential GDE - from national assessment

- Low potential GDE - from national assessment
- Terrestrial Groundwater Dependent Ecosystems - Shoalhaven River**
- High potential GDE - from regional studies
- Moderate potential GDE - from regional studies
- Low potential GDE - from regional studies

Premise

FIRM POWER

Kangaroo Valley BESS

Figure 17
Water

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 File: P001437_01_MASTER.aprx Prepared By: malin.hoepfner Date: 11/25/2024

7. REFERENCES

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Shoalhaven City Council (2020). <i>Shoalhaven 2040 - Our Strategic Land-use Planning Statement</i> .

Appendix A

Scoping Report Summary Table



Table 9 – Scoping report summary table

Level of Assessment	Matter	CIA	Engagement	Relevant Government Plans, Policies and Guidelines	Scoping Report Reference
Standard	Social Impact	Y	Specific	Social Impact Assessment Guidelines for State Significant Projects (Department of Planning Industry and Environment, 2023) Environmental Planning and Impact Assessment Practice Note: Socio-economic Assessment (Roads and Maritime Services, 2013).	6.11
Standard	Land Use	N	Specific	Surface Development Guideline 5 – Active Mining Areas – Moderate Predicted Subsidence Impact (Subsidence Advisory NSW, 2018) Development Application – Merit Assessment Policy (Subsidence Advisory NSW, 2018) Land Use Conflict Risk Assessment Guide (DPI, 2011)	6.10
Standard	Heritage	N	Specific	NSW Skeletal Remains: Guidelines for Management of Human Remains (Heritage Office, 1998) Criteria for the Assessment of Excavation Directors (NSW Heritage Council, 2011).	6.9
Standard	Hydrogeology	N	Specific	Acid Sulphate Soils Assessment Guidelines (Department of Planning, 2008) Managing Land Contamination: Planning Guidelines SEPP 55 – Remediation of Land (Department of Urban Affairs and Planning and Environment Protection Authority, 1998) Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) Managing Urban Stormwater: Soils and Construction Volume 2 (Department of Environment and Climate Change, 2008) Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (Department of Environment and Climate Change, 2008) Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC / ARMCANZ, 2000)	6.12 6.8.3

Level of Assessment	Matter	CIA	Engagement	Relevant Government Plans, Policies and Guidelines	Scoping Report Reference
				Using the ANZECC Guidelines and Water Quality Objectives in NSW (Department of Environment and Conservation, 2006) Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) and Volume 2 (A. Installation of Services; B. Waste Landfills; C. Unsealed Roads; D. Main Roads; E. Mines and Quarries) (DECC 2008) NSW Government's Flood risk management manual (2023)	
Standard	Biodiversity	Y	Specific	Refer to Section 6.5 of the Scoping Report.	6.5
Standard	Bushfire	N	Specific	Planning for Bushfire Protection 2019	6.8.2
Standard	Access and Traffic	Y	Specific	Guide to Traffic Management – Part 3 Traffic Studies and Analysis (Austroads, 2013) Guide to Traffic Generating Developments Version 2.2 (RTA, 2002)	6.2
Standard	Visual Impact	Y	General	Refer to Section 6.4.1 of the Scoping Report.	6.4.1
Standard	Noise and Vibration	Y	General	Construction Noise Strategy (Transport for NSW, 2012) Interim Construction Noise Guideline (Department of Environment, Climate Change and Water, 2009) NSW Industrial Noise Policy (Environment Protection Authority, 2000) NSW Road Noise Policy (Environment Protection Authority, 2011) Assessing Vibration: A Technical Guideline (Department of Environment and Conservation, 2006) German Standard DIN 4150-3: Structural Vibration – Effects of Vibration on Structures Environmental Noise Management Assessing Vibration: A Technical Guideline (Department of Environment and Conservation, 2006)	6.4.2

Level of Assessment	Matter	CIA	Engagement	Relevant Government Plans, Policies and Guidelines	Scoping Report Reference
				Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration (Australian and New Zealand Environment Council, 1990).	
Not assessed	Air Quality	Y	General	Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (EPA, 2022) NSW's Sustainable Design Guidelines (Version 3.0) (Transport for NSW, 2013) Greenhouse Gas Inventory Guide for Construction Projects (Transport for NSW, 2012).	6.3
Standard	Hazard	N	General	Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (DoP, 2011) International Standard (ISO / IEC 31010) Risk Management – Risk Assessment Technique Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition) (National Transport Commission, 2007) Storage and Handling of Dangerous Goods Code of Practice (WorkCover, 2005).	6.8

Appendix B

Preliminary route assessment



Appendix C

Protected Matters Search Tool (PMST) Results

Appendix D

Preliminary Visual Impact Assessment



Appendix E

Preliminary Biodiversity Assessment

Appendix F

AHIMS Search Results

Appendix G

Social impact scoping worksheet



