



Swallow Tail Battery Energy Storage System

Scoping Report

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CONTENTS

1.	INTRODUCTION	1
1.1	THE APPLICANT	1
1.2	PROJECT OVERVIEW	2
1.3	PROJECT OBJECTIVES	3
1.4	RELATED DEVELOPMENT	3
1.5	SUBDIVISION	3
2.	STRATEGIC CONTEXT	5
2.1	COMMITMENT TO RENEWABLE ENERGY	5
2.1.1	Federal Commitments	5
2.1.2	State Commitments	5
2.1.3	Regional and Local Planning Context	6
2.1.4	Contribution to the National Electricity Market	6
2.1.5	Battery Energy System Storage Benefits	8
2.1.6	Project Specific Benefits	9
2.2	STRATEGIC FRAMEWORK	9
2.3	SITE AND SURROUNDING DEVELOPMENT	13
2.3.1	Regional Context	13
2.3.2	Local Context	14
3.	THE PROJECT	17
3.1	PROJECT AREA	17
3.2	PROJECT DESCRIPTION	17
3.2.1	Battery Energy Storage System	22
3.2.2	Electrical Reticulation network	22
3.2.3	Development Footprint	22
3.2.4	Construction and Temporary Facilities	22
3.2.5	Transport Route	22
3.2.6	Site Access	23
3.2.7	Ancillary Activities	23
3.3	PROJECT STAGING	23
3.3.1	Development Phases	24
3.4	PROJECT ALTERNATIVES	24
3.4.1	Not Undertaking the Project	24
3.4.2	Alternative Site Selection	25
3.4.3	Alternative project	25
4.	STATUTORY CONTEXT	26
4.1	POWER TO GRANT CONSENT	26
4.2	PERMISSIBILITY	26
4.3	POWER TO GRANT APPROVAL	26
4.4	RELEVANT COMMONWEALTH AND STATE LEGISLATION	27
4.5	MANDATORY MATTERS FOR CONSIDERATION	29
5.	COMMUNITY AND STAKEHOLDER ENGAGEMENT	31
5.1	STAKEHOLDERS	31
5.2	ENGAGEMENT COMPLETED TO DATE	32
5.3	FUTURE ENGAGEMENT ACTIVITIES	32

5.3.1	Monitoring and Evaluation	33
6.	PROPOSED ASSESSMENT OF IMPACTS	34
6.1	CATEGORISATION OF ASSESSMENT MATTERS	34
6.2	BIODIVERSITY	34
6.2.1	Existing Environment	35
6.2.2	Assessment Approach	45
6.3	HERITAGE	46
6.3.1	Aboriginal Cultural Heritage	46
6.3.2	Historic Heritage	51
6.4	HAZARDS	53
6.4.1	Bushfire	53
6.4.2	Preliminary Hazard Analysis	54
6.5	NOISE AND VIBRATION	55
6.5.1	Existing environment	55
6.5.2	Assessment Approach	55
6.6	SOCIAL AND ECONOMIC	56
6.6.1	Existing Environment	57
6.6.2	Community Profile	58
6.6.3	Potential Social Impacts	65
6.6.4	Assessment Approach	68
6.7	TRAFFIC AND TRANSPORT	70
6.8	VISUAL	70
6.9	LAND USE AND CAPABILITY	70
6.9.1	Existing Environment	70
6.9.2	Assessment Approach	71
6.10	WATER RESOURCES	71
6.10.1	Existing Environment	71
6.10.2	Assessment Approach	71
6.11	AIR QUALITY	72
6.12	WASTE MANAGEMENT	72
6.13	CUMULATIVE IMPACT ASSESSMENT	77
6.13.1	Scope of Assessment	77
6.13.2	Study Area	77
6.13.3	Time Period	77
6.13.4	Projects to Assess	78
6.13.5	Assessment Approach	78
7.	CONCLUSION	80
	REFERENCES	81

APPENDIX A SCOPING SUMMARY TABLE

APPENDIX B AHIMS SEARCH RESULTS

LIST OF TABLES

TABLE 2-1	ALIGNMENT WITH STRATEGIC FRAMEWORK	9
TABLE 2-2	MAJOR PROJECTS IN THE REGION	13
TABLE 2-3	KEY HAZARDS ASSOCIATED WITH THE PROJECT AREA	15
TABLE 3-1	PROPERTY DETAILS OF THE PROJECT	17
TABLE 3-2	INDICATIVE PROJECT COMPONENTS AND SPECIFICATIONS	18
TABLE 3-3	PROJECT STAGING	23
TABLE 4-1	APPROVALS REQUIRED UNDER COMMONWEALTH AND STATE LEGISLATION	27
TABLE 4-2	MANDATORY CONSIDERATIONS	29
TABLE 5-1	IDENTIFIED STAKEHOLDERS	31
TABLE 5-2	SUMMARY OF ENGAGEMENT ACTIVITIES COMPLETED TO DATE	32
TABLE 6-1	PROPOSED LEVEL OF ASSESSMENT	34
TABLE 6-2	PRELIMINARY CANDIDATE SPECIES LIST - FLORA	39
TABLE 6-3	PRELIMINARY CANDIDATE SPECIES LIST - FAUNA	40
TABLE 6-4	PRELIMINARY CANDIDATE SPECIES HABITAT CONSTRAINTS AND GEOGRAPHIC LIMITATIONS	43
TABLE 6-5	AHIMS DATABASE SEARCH DETAILS	49
TABLE 6-6	AHIMS REGISTERED SITE TYPES	49
TABLE 6-7	ROAD CLASSIFICATIONS	57
TABLE 6-8	APPROXIMATE DISTANCES TO THE PROJECT AREA	58
TABLE 6-9	SUMMARY OF RELEVANT ABS DATASETS	59
TABLE 6-10	KEY INDICATORS FOR ALL ABS DATASETS (2021) ACROSS THE PROJECT SOCIAL LOCALITY	61
TABLE 6-11	CATEGORISATION OF TOP INDUSTRIES IN DIRECTLY IMPACTED AREAS	63
TABLE 6-12	CATEGORISATION OF THE RELEVANT TOP OCCUPATIONS IN SOCIAL LOCALITY	64
TABLE 6-13	SUMMARY OF SOCIAL INFRASTRUCTURE	65
TABLE 6-14	PRELIMINARY SOCIAL IMPACT ASSESSMENT	66
TABLE 6-15	ADAPTED SOCIAL IMPACT SIGNIFICANCE MATRIX	69
TABLE 6-16	CUMULATIVE IMPACTS ASSOCIATED WITH PROJECT STAGING	77
TABLE 6-17	CUMULATIVE IMPACT ASSESSMENT APPROACH	78
TABLE 6-18	CUMULATIVE IMPACT ASSESSMENT SCOPING SUMMARY TABLE	79

LIST OF FIGURES

FIGURE 1-1	REGIONAL CONTEXT	4
FIGURE 2-1	EXIT AND ENTRY OF GENERATION CAPACITY IN THE NEM	7
FIGURE 2-2	BANNABY WITHIN THE TRANSGRID TRANSMISSION NETWORK	8
FIGURE 2-3	PROJECT BENEFITS	9
FIGURE 2-4	NEARBY EXISTING OR RELEVANT FUTURE PROJECTS	16
FIGURE 3-1	LAND ZONING	19
FIGURE 3-2	TOPOGRAPHY	20
FIGURE 3-3	INDICATIVE PROJECT DESIGN AND LAYOUT	21
FIGURE 6-1	DRAFT NATIVE VEGETATION REGULATORY MAP FOR THE PROJECT AREA	37
FIGURE 6-2	STATE VEGETATION TYPE MAP FOR THE PROJECT AREA	38
FIGURE 6-3	AHIMS RECORDS	50
FIGURE 6-4	BUSHFIRE PRONE LAND	73
FIGURE 6-5	DWELLINGS WITHIN 2 KM OF THE PROJECT	74
FIGURE 6-6	PROJECT SOCIAL LOCALITY	75
FIGURE 6-7	WATERCOURSES	76

ACRONYMS AND ABBREVIATIONS

Acronym	Description
ACHAR	Aboriginal Cultural Heritage Assessment Report
AEMO	Australian Energy Market Operator
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AMBS	Australian Museum Business Services
AMPYR Energy	AMPYR Australia Pty Ltd
BAM	Biodiversity Assessment Method 2020
BCS	Biodiversity, Conservation and Science Directorate
BDAR	Biodiversity Development Assessment Report
BC Act	<i>Biodiversity Conservation Act 2016</i>
BESS	Battery Energy Storage System
BFPL	Bushfire Prone Land
CEEC	Critically Endangered Ecological Community
CHMP	Cultural Heritage Management Plan
CIA	Cumulative Impact Assessment
COP	Conference of Parties
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DCP	Development Control Plan
Development Footprint	8 ha of land that is permanently occupied by the BESS Facility
DPE	Department of Planning and Environment
DPHI	Department of Planning, Housing and Infrastructure
DPI	Department of Primary Industries
EEAP	Energy Efficiency Action Plan
EIS	Environmental Impact Statement
EnergyCo	NSW Energy Corporation
EPA	Environment Protection Authority
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ERM	Environmental Resources Management Australia Pty Ltd
ESOO	Electricity Statement of Opportunities
FTE	Full-time Employee
GDE	Groundwater Dependant Ecosystem
GHG	Greenhouse Gas
GIS	Geographical Information Systems

Acronym	Description
GWH	Gigawatts per Hour
HHA	Historical Heritage Assessment
ICNG	<i>Interim Construction Noise Guideline 2009</i>
IRSDA	Index of Relative Socioeconomic Advantage and Disadvantage
ISP	Integrated System Plan
KFH	Key Fish Habitat
LCA	Land Category Assessment
LEP	Local Environmental Plan
LGA	Local Government Area
LLS Act	<i>Local Land Services Act 2013</i>
LRET	Large-scale Renewable Energy Target
LSC	Land and Soil Capability
MNES	Matters of National Environmental Significance
NEM	National Energy Market
NGLG	Noise Guide for Local Government
NHOC	Navin Officer Heritage Consultants
NMG	Noise Mitigation Guideline
NPWS	National Parks and Wildlife Service
NSW	New South Wales
NVIA	Noise and Vibration Impact Assessment
NVR Map	Native Vegetation Regulatory Map
OSOM	Oversize Overmass
PADs	Potential Archaeological Deposits
Paris Agreement	United Nations Paris Agreement on climate change
PCT	Plant Community Type
Project area	40 ha of land that corresponds to Lot 39 DP 750005
REAP	NSW Renewable Energy Action Plan
RET	Renewable Energy Target
RFS	Rural Fire Service
RNE	Register of the National Estate
SAII	Serious and Irreversible Impacts
SEIFA	Socio-Economic Indexes for Areas
SEPP	State Environmental Planning Policy
SES	State Emergency Service
SHR	State Heritage Register

Acronym	Description
SIA	Social Impact Assessment
SRES	Small-scale Renewable Energy Scheme
SSD	State Significant Development
SVTM	State Vegetation Type Map
ULLEP	Upper Lachlan Local Environmental Plan 2010

1. INTRODUCTION

AMPYR Australia Pty Ltd (the Applicant) propose to develop a Battery Energy Storage System (BESS) with a capacity of 375 Megawatt (MW), in the town of Bannaby, New South Wales 2580. The development will include the BESS, new 330 kilo volt (kV) overhead transmission lines that will connect directly to the 330 kV Bannaby Transgrid Substation, and site access from Hanworth Road (The Project).

The Project is in the Upper Lachlan Local Government Area (LGA) on Lot 39 Deposited Plan (DP) 750005 (hereafter referred to as the 'Project site' or 'site') (**Figure 3-1**). The Project site comprises 40 hectare (ha); however, the development footprint is limited to an area of approximately 8 ha (the Development footprint). The Project is known as the Swallow Tail BESS.

Approval for the Project is sought under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), as the Project is declared as State Significant Development (SSD) by reason of Part 2.2, clause 2.6, Schedule 1 of the *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP).

Environmental Resources Management Australia Pty Ltd (ERM) has prepared this Scoping Report on behalf of the Applicant, to support a request for Secretary's Environmental Assessment Requirements (SEARs). The SEARs will guide the preparation of an Environmental Impact Statement (EIS) for the Project. The Scoping Report identifies the Project site, describes the proposed development, confirms the planning approval pathway, and identifies key environmental or social aspects that require consideration.

The Scoping Report has been prepared in accordance with the following guidelines:

- Large-Scale Solar Energy Guideline (DPE, 2022a);
- Renewable Energy Planning Framework (DPHI, 2024d);
- State Significant Development Guidelines (DPHI, 2024a);
- State Significant Development Guidelines - Preparing a Scoping Report: Appendix A to the State Significant Development Guidelines (DPIE, 2022b) (Scoping Report Guidelines);
- Social Impact Assessment Guideline (DPIE, 2023a);
- Technical Supplement: Social Impact Assessment Guideline for State Significant Projects (DPIE, 2023c);
- Cumulative Impact Assessment Guidelines for State Significant Projects (DPIE, 2022c); and
- Undertaking Engagement Guidelines for State Significant Projects (DPHI, 2024b).

1.1 THE APPLICANT

The Applicant for the Swallow Tail BESS is AMPYR Australia Pty Ltd [ABN 68 630 312 015]. The address of AMPYR Australia Pty Ltd is 167 Macquarie Street, Level 17, Sydney NSW 2000.

AMPYR Australia Pty Ltd is part AMPYR Global Energy Holdings Pty Ltd, the global renewable energy platform of AGP Sustainable Real Assets. AMPYR Energy develop and operate renewable energy assets across Europe, Asia, North America and Australia. Their global

development pipeline currently comprises 12 Gigawatts (GW) of renewable energy assets, including 1 GW / 2.5 Gigawatts per hour (GWh) of battery storage projects.

In Australia, AMPYR Australia Pty Ltd provides asset finance to support the growth of renewable energy operations and develops renewable energy storage assets designed to increase the penetration of renewable energy to the Australian grid. Working with a range of stakeholders, including investors, power users, landowners, communities and the public sector, the Applicant is committed to maximising economic, social and environmental benefits as Australia transitions into a low carbon future.

1.2 PROJECT OVERVIEW

The Project will involve the construction, operation and eventual decommissioning of a BESS and associated infrastructure. The Project is situated in the locality of Bannaby, about 70 km northeast (by road) from Goulburn and 210 km southwest of Sydney. The regional context of the Project is identified in **Figure 1-1**. The Project will include:

- Installation of lithium-ion batteries with an aggregate capacity of 375 MW / 1500 MW hours (MWh)
- An upgrade to the project site entry located at Hanworth Road and internal access tracks to facilitate the transport of Project components to the Disturbance area;
- Electrical reticulation to connect the BESS to the existing 300 kV Bannaby Substation;
- Associated and ancillary infrastructure including a switchyard, onsite substation, site office, and perimeter fencing; and
- Temporary construction facilities including construction compound, laydown area and car parking.

A concept design has been created for the Project, which includes a preliminary development footprint and indicative Project layout. The development footprint refers to the area of land occupied by the BESS facility, ancillary infrastructure, grid connection works and access track.

This Scoping Report has assessed the Project layout displayed in **Figure 3-3 (Section 3** of this report). The design of the Project layout will be subject to further refinements in response to the detailed site investigations that will be completed to support the Project EIS. As it stands, the Project avoids the stand of native vegetation and St Pauls Creek located in the middle of the site.

In developing the Project, the Applicant will employ strategies to avoid, minimise and offset impacts to respond to environmental sensitivities and achieve the greatest reduction of impacts possible. Those relevant to specific environmental and social aspects are detailed in **Section 6** of this report.

The detailed design, and selection of technology and Project components will consider identified Project constraints, such that impacts are avoided or minimised. BESS technology has advanced rapidly in recent years. In Australia, BESS' must adhere to AS/NZS 5139:2019 – Electrical installations - Safety of battery systems for use with power conversion equipment. The BESS selected for the Project will include a Battery Management System and integrated fire monitoring and control systems.

1.3 PROJECT OBJECTIVES

The objectives of the Project are to:

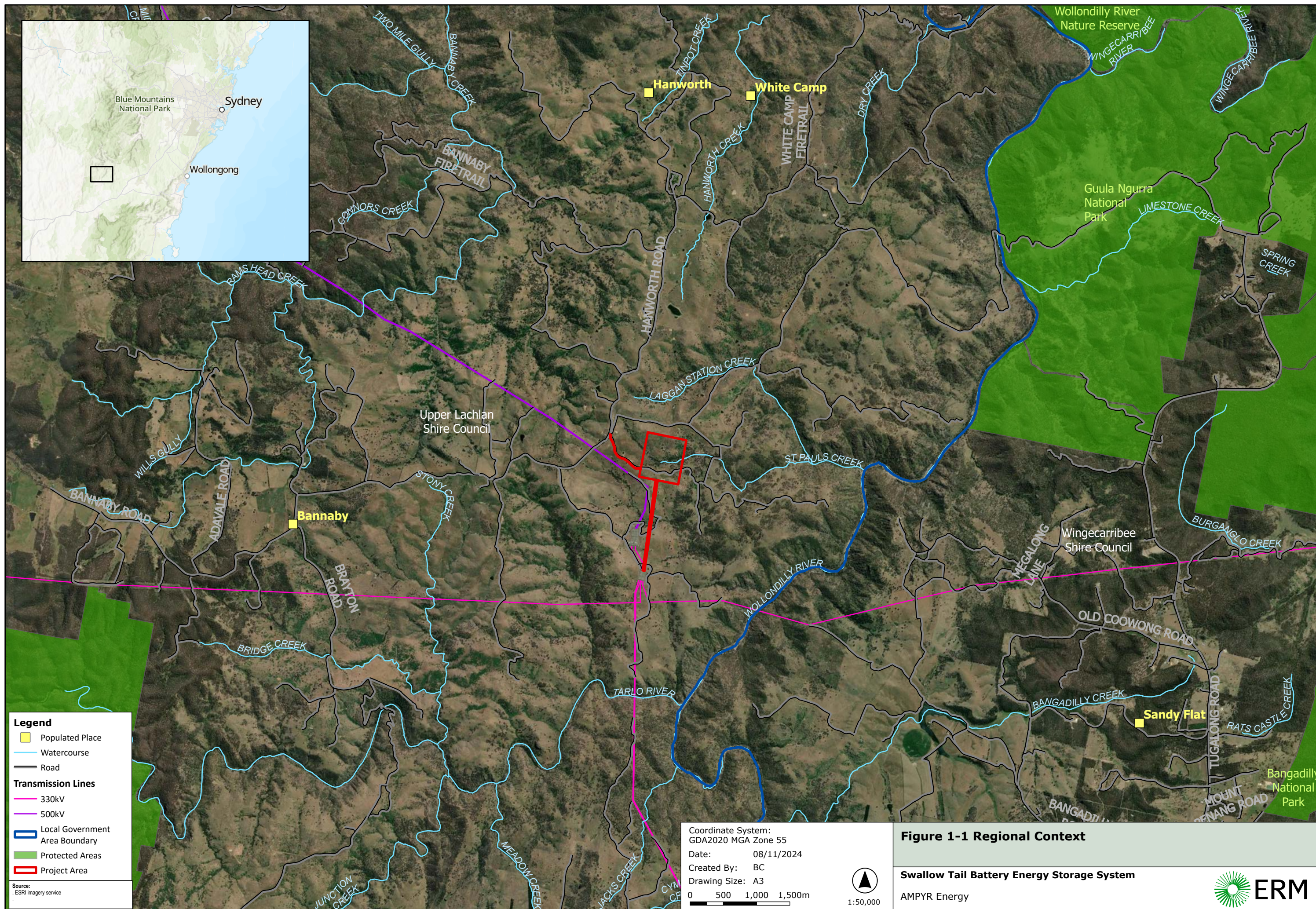
- Contribute to Commonwealth and NSW targets for renewable energy and the reduction of Greenhouse gas (GHG) emissions. This includes helping the NSW Government achieve ambitious targets to halve emissions by 2030, achieve net zero by 2050 and to establish a reliable, affordable and clean energy system;
- Contribute to the additional energy storage capacity required to meet the growing energy demand in NSW and the generation shortfalls predicted as coal fired power stations reach the end of their operational lives;
- Deliver energy security, reliability, and network stability to NSW consumers through its ability to store power and consequently charge and discharge energy as required by the electricity network;
- Supply electricity during periods of peak demands and reduce risk of potential future loadshedding or blackout events;
- Unlock additional capacity on existing transmission networks, thereby reducing costs to electricity consumers;
- Provide both direct and indirect employment opportunities during construction and operation;
- Liaise and work with the community and all potentially affected stakeholders in the identification, mitigation and/or monitoring of any potential environmental effects; and
- Ensure quality, safety and environmental standards are maintained.

1.4 RELATED DEVELOPMENT

The Project does not have related development. All works associated with the Project including construction and operation of the BESS and new high voltage transmission lines connecting to existing transmission infrastructure, access to the Project via Hanworth Road and all ancillary infrastructure, are subject to this SSD application.

1.5 SUBDIVISION

The Project may require at least one subdivision for the land proposed to host the on-site substation and switchyard. Transgrid may require a freehold title to the switchyard lot to proceed with the construction of the relevant electrical connections and infrastructure. The Project may require the future creation of title through the subdivision of Lot 39 DP 750005, to enable land ownership of the switchyard assets to be transferred to Transgrid. Transgrid may obtain freehold title through either transfer, dedication or acquisition.



2. STRATEGIC CONTEXT

This section addresses the key government strategies, policies and plans that provide strategic support for undertaking the Project.

2.1 COMMITMENT TO RENEWABLE ENERGY

2.1.1 FEDERAL COMMITMENTS

Australia is one of 195 countries that signed on to the United Nations Paris Agreement on climate change (Paris Agreement). The Paris Agreement sets in place a durable and dynamic framework for all countries to take climate action from 2020, building on existing international efforts in the period up to 2020. The aim of the Paris Agreement is to limit emissions globally to net-zero in the second half of this century. Australia set a target to reduce emissions by 43 per cent (%) below 2005 levels by 2030, as part of its commitments under the Paris Agreement, which builds on its previous target of reducing emissions by 5% below 2000 levels by 2020 (PoA, 2017; DCCEEW, 2022).

Ahead of the G20 Summit in Rome and the UN Climate Change Conference in Glasgow (COP2), the Australian Government also committed to achieving net zero GHG emissions by 2050. The Project will assist in delivering on this key commitment for Australia.

The current efforts to achieve this goal are reflected in the Renewable Energy Target (RET) Scheme. The RET was implemented in 2009 with an initial target of 44,000 GWh (later reduced to 33,000 GWh) of renewable energy generation by 2020. The RET has been an extremely successful initiative that has, in part, driven a more than 50% reduction in the cost of large-scale wind and solar projects over the past 10 years.

2.1.2 STATE COMMITMENTS

In November 2020, the NSW Government released the NSW Electricity Infrastructure Roadmap with the aim of facilitating reliable and affordable energy. This roadmap is facilitated by the Electricity Infrastructure Investment Act 2020 (EII Act). Part of this includes the appointment of the NSW Energy Corporation (EnergyCo) as the Infrastructure Planner under section 63 of the EII Act for five Renewable Energy Zones (REZs).

In May 2023, EnergyCo released the Network Infrastructure Strategy for NSW (NIS), which outlines a 20-year plan for the state's electricity network and the target to deliver a total capacity of 12 GW of renewable electricity generation and 2 GW of long-duration storage within the REZs by 2030. The Strategy also includes a "Secure Now" and "Plan for the Future" approach, which seeks to identify options to increase network capacity and resilience into and beyond 2030. Although the Project is not located in a REZ, it supports the 2030 targets set by EnergyCo.

Additionally, these are supported by the newly implemented Climate Change (Net Zero Future) Act 2023. This Act legislates net zero GHG in NSW by 30 June 2050.

The Project will provide additional energy storage capacity, energy demand management and grid stability and reliability. This will assist both Australia and NSW meet their emissions reduction targets by facilitating additional renewable energy development.

2.1.3 REGIONAL AND LOCAL PLANNING CONTEXT

Renewable energy development in the region is supported by the provisions of regional and local plans and strategies, including:

- South East and Tablelands Regional Plan 2036;
- Draft South East and Tablelands Regional Plan 2041;
- The Tablelands Regional Community Strategic Plan 2016-2036;
- Southern Tablelands Regional Economic Development Strategy;
- Upper Lachlan Community Strategic Plan 2042;
- Upper Lachlan Shire Local Strategic Planning Statement 2020; and
- Upper Lachlan Shire Council Energy Masterplan.

2.1.4 CONTRIBUTION TO THE NATIONAL ELECTRICITY MARKET

The National Electricity Market (NEM) operates as a power system to deliver electricity from generators to market consumers, through an extensive transmission and distribution network comprising of around 40,000 km of transmission lines and cables. The NEM services the entire eastern and south-eastern coastline of Australia, connecting five states, and providing electricity to approximately nine million customers.

The Australian Energy Market Operator's (AEMO) 2023 Electricity Statement of Opportunities (ESOO) provides updated forecasts for demand and supply of electricity, focusing commentary on the next ten years, and includes forecasts over the next 30 years (AEMO, 2023). The 2023 report noted:

- Electricity consumption is forecast to grow faster than forecast in the 2022 ESOO;
- Growth in electricity demand is driven primarily by economic activity, population growth, an acceleration in the rate of electrification of all sectors of the economy, and the emergence of a domestic hydrogen industry, supported by jurisdictional policy;
- Maximum electricity demand is forecast to grow over the forecast horizon, broadly in tune with drivers affecting energy consumption growth. The distributed photovoltaic (PV) has less offset impact, as operational maximum demand is typically in the early evening, with little or no contribution from PV systems; and
- With the sustained uptake of distributed PV, minimum demand forecasts continue to show a rapid decline.

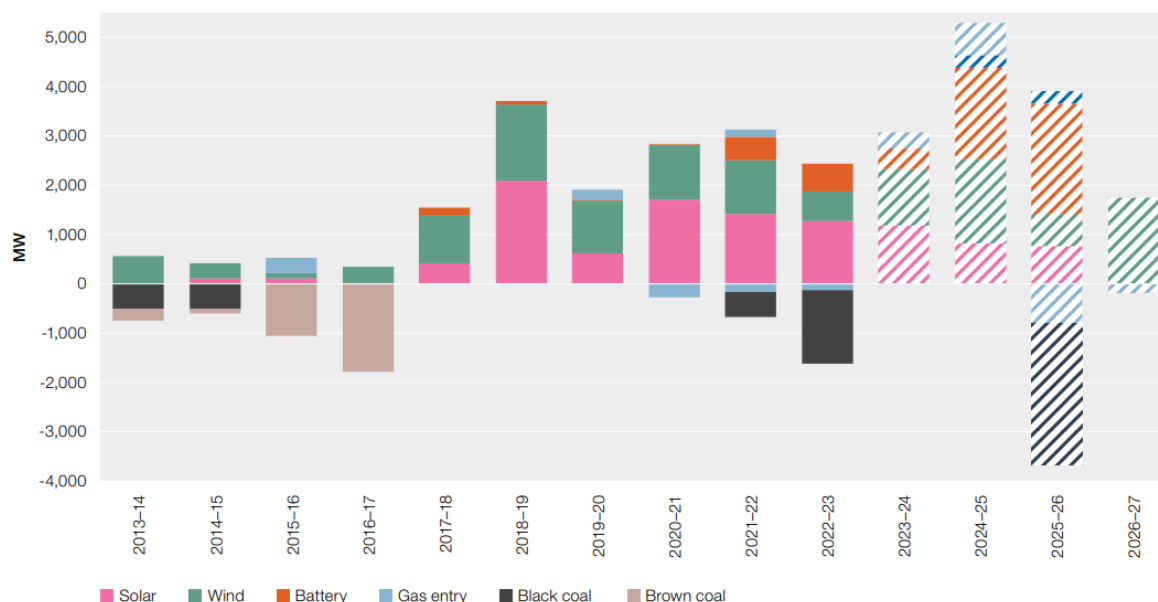
A significant component that drives electricity consumption is business electrification and electrical vehicle uptake in the residential and business sectors, which combined are responsible for more than three quarters of forecast consumption growth over the next ten years.

The energy sector in Australia is undergoing a necessary and inevitable transition from a centralised system of large fossil fuel generation to a decentralised system of widely dispersed, renewable energy (mainly wind and solar) (Australian Energy Regulator, 2023). The Australia Energy Regulator (2023) identifies key drivers for the transition as:

- Increasing community concern regarding the impact of fossil fuel generation of carbon emissions. There has been no energy business investing in new coal fired generation in Australia since 2012, whilst investment in wind, solar and batteries continues to grow (refer to **Figure 2-1** below);

- Technological advancements and cost reductions in grid scale wind and solar generation, facilitating lower cost options for new build generation, including advancements in solar panel technology; and
- Deteriorating economics of fossil fuel generation associated with aging of the coal fired generation fleet and increasing fuel costs.

FIGURE 2-1 EXIT AND ENTRY OF GENERATION CAPACITY IN THE NEM



Note: Capacity includes scheduled and semi-scheduled generation, but not rooftop solar capacity. New entry and exit are by registered capacity, except for solar which uses maximum capacity. Committed investment and closures from 30 June 2023 are shown as shaded components. These include Eraring power station in 2025.

Source: AER; AEMO (data).

(SOURCE: AUSTRALIAN ENERGY REGULATOR, 2023)

Traditionally, NSW's electricity needs have been met by coal-fired generation and some gas peaking power plants. While wind and solar power has increased and accounted for a combined 28% of total generation in 2023, fossil fuel generation continued to produce approximately 64% of electricity in the NEM (Australian Energy Regulator, 2023). However, about 58% of the current coal-fire capacity is expected to withdraw by 2030, initiated by the closure of Liddell's Power Station in April 2023, which marked the first of four coal station closures.

The imminent exit of much of the NEM's coal fired generation has prompted the AEMO to forecast reliability gaps (risk of unserved electricity demand) as early as 2024 in some regions. AEMO's forecasts of these reliability gaps are accelerating in response to growing demand via electrification and generation investment proceeding slower than hoped.

Wind and solar projects provide emission-free, low-cost electricity when weather conditions allow. However, their supply will need to be supplemented with adequate electricity storage technology to avoid reliability gaps as coal stations continue to retire (Australian Energy Regulator, 2023).

Renewable energy generation is projected to continue to grow to 73% in 2030 and reach up to 82% 'with additional measures' scenario. This scenario includes higher generation from large-scale renewables projects such as solar and wind, for on grid electricity and lower fossil fuel generation, when compared with the baseline scenario (DCCEEW, 2023).

The Project will facilitate investment in renewable energy by providing up to 375 MW of energy storage capacity that will regulate the supply of energy to the grid. This will increase the reliability of the NEM and encourage further development of renewable energy assets.

2.1.5 BATTERY ENERGY SYSTEM STORAGE BENEFITS

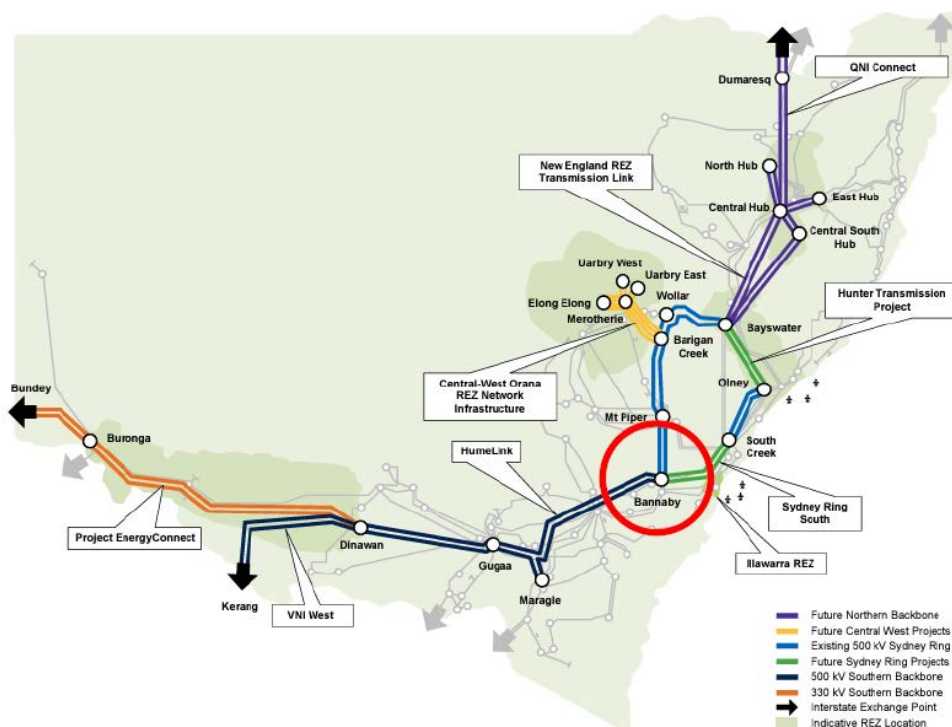
BESS' are an integral component of a modernised, decentralised energy system. They increase the reliability of the system, storing electricity when demand is low and adding it when demand is high. This minimises load shedding and enhances the resilience of the grid.

Benefits of a BESS include:

- Providing additional energy storage capacity and dispatchable energy during periods of high demand;
- Improving security and resilience of the NEM;
- Helping to maintain grid stability;
- Supporting the stabilisation of the supply of electricity in NSW; and
- The above will support the transition of the energy sector away from a centralised system of fossil fuel generation, towards a decentralised system of renewable energy production and storage, assisting in the reduction of GHG emissions.

A large-scale BESS on the site will materially support NSW's energy transition. The Bannaby Substation is located on the backbone of the NSW transmission network, connecting renewable energy generation from southern NSW, Victoria and South Australia to the "Sydney Ring", encompassing the electricity demand centres within Sydney, Wollongong and Newcastle, NSW. Bannaby, in relation to the Transgrid network is shown in **Figure 2-2**.

FIGURE 2-2 BANNABY WITHIN THE TRANSGRID TRANSMISSION NETWORK



(SOURCE: Transgrid Annual Planning Report, 2024)

2.1.6 PROJECT SPECIFIC BENEFITS

In addition, the Project will deliver significant benefits to the Upper Lachlan Shire region and local communities, through:

- Direct investment in the Upper Lachlan Shire region;
- Opportunities for local contractors and businesses, through the creation of construction jobs and operational activities;
- Diversified income stream for the Project landowner;
- Supporting the resilience of the NEM, which could reduce the cost of electricity; and
- Aiding in the development of new skilled labour in the region, within the growing renewable energy industry.

A summary of the Project benefits is displayed in **Figure 2-3**.

FIGURE 2-3 PROJECT BENEFITS



2.2 STRATEGIC FRAMEWORK

The Project aligns with various national, state, regional and local strategies, policies, and plans as outlined in **Table 2-1** below.

TABLE 2-1 ALIGNMENT WITH STRATEGIC FRAMEWORK

Strategy, Policy or Plan	Description	Project Alignment
National Context		
United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP28)	COP28 was the 28 th climate change conference of parties, held in Dubai, United Arab Emirates (UAE) in 2023. One of the key outcomes of COP28 was an agreement to “triple the world’s renewable energy capacity and double its energy efficiency by 2030” (WRI, 2023). This pledge was made by 130 countries, including Australia.	The Project will facilitate the development of additional renewable energy by firming energy supply and providing stability and reliability. Facilitating additional renewable energy will assist in reducing emissions.

Strategy, Policy or Plan	Description	Project Alignment
UNFCCC (COP21) – The Paris Agreement	The United Nations Paris Agreement on climate change (Paris Agreement) outlines a framework for all countries to take climate action from 2020 and builds on the existing international efforts in the period up to 2020. The aim of the Paris Agreement is to limit global emissions to net-zero in the second half of this century. Australia is one of 195 signatories to the Paris Agreement and has set a target to reduce emissions by 43% below 2005 levels by 2030.	The Project will contribute to meeting Australia's commitments under the Paris Agreement through the storage of renewable solar energy and enabling a resultant annual reduction in GHG emissions. It should be noted that NSW targets are to achieve net-zero emissions by 2050, as listed in Part 2 section 9(1)(c) of the <i>Climate Change (Net Zero Future) Act 2023</i>.
Integrated System Plan 2024	The Integrated System Plan (ISP) provides a roadmap for the development of the NEM over the next 20 years.	The Project will respond to Phase 1 of the ISP: <i>“Development to help meet regional renewable energy targets and other policies, and/or where there is good access to existing network capacity with good system strength”</i>. The BESS will connect to the existing network and will provide energy storage and dispatch capacity to facilitate and provide electricity demand management.
NSW Context		
Net Zero Plan Stage 1: 2020-2030	The Net Zero Plan Stage 1: 2020–2030 (DPE, 2020a) sets the foundation for NSW's action on climate change and how the NSW Government will deliver on its objective to achieve net zero emissions by 2050. It outlines the strategy to reduce emissions and mitigate the impacts of climate change. In September 2021, the NSW Government announced ambitious new emission reductions, with an updated objective to reduce emissions by 50% below 2005 levels by 2030 under the Net Zero Plan Stage 1: 2020 – 2030 Implementation Update (September 2021).	The Project will facilitate the development of additional renewable energy by firming energy supply, providing stability and reliability. Facilitating additional renewable energy will assist in reducing emissions.
NSW Electricity Strategy	The NSW Electricity Strategy is the NSW Government's plan to provide more reliable, affordable, and sustainable electricity across NSW (DPE, 2019). The Strategy encourages approximately \$8 billion of new private investment in NSW's electricity system over the next decade, including \$5.6 billion in regional NSW.	The Project is consistent with the Strategy as it provides renewable storage capacity that, together with other renewable generation projects, is expected to result in the lower cost of power in comparison to wholesale prices. The Project will also contribute to greater energy resilience by providing a mechanism to stabilise electricity supply.

Strategy, Policy or Plan	Description	Project Alignment
	It aligns closely with the NSW Government's Net Zero Plan Stage 1: 2020–2030, and supports a new affordable and reliable energy system by: • Delivering Australia's first coordinated REZ in the Central-West Orana region; • Saving energy via the Energy Security Safeguard; • Supporting the development of new electricity generators; • Setting a target to increase the state's energy resilience; and • Making it easier to do energy business in NSW.	
NSW Transmission Infrastructure Strategy	The NSW Transmission Infrastructure Strategy is the government's plan to unlock private sector investment in priority energy infrastructure projects, which can deliver low-cost energy to customers to 2040 and beyond (DPE, 2018). The Strategy forms part of the government's broader plan to make energy more affordable, secure investment in network infrastructure and ensure new technologies deliver benefits for consumers. Among other things, the aims of the Strategy include improved energy reliability, security, timely project delivery, increased affordability and access to cheaper electricity.	With the provision of a BESS, the Project will provide energy storage and dispatch capacity to facilitate and provide electricity demand management.
NSW Electricity Infrastructure Roadmap	The NSW Electricity Infrastructure Roadmap (the Roadmap), released in November 2020, is the government's plan to transform the NSW electricity sector to be cleaner, cheaper and more reliable (DPE, 2020b). The Roadmap builds on the NSW Electricity Strategy (2018) and the NSW Transmission Infrastructure Strategy (2019) and emphasises the need for NSW to transition to renewable energy. It aims to replace NSW's ageing coal-fired power stations with a coordinated portfolio of energy generation, storage and network investment.	The BESS will provide energy demand management, leading to greater reliability and stability of the NEM. This in turn should facilitate further renewable energy development.

Strategy, Policy or Plan	Description	Project Alignment
Regional Context		
The South East and Tablelands Regional Plan 2036	The South East and Tablelands Regional Plan 2036 (SETRP) sets out the strategic vision for the region's ongoing growth (DPE, 2017). The SETRP provides a framework for creating a borderless region with Canberra, having a connected and prosperous economy, interconnecting biodiversity corridors, improving health and connection within communities, and providing environmentally sustainable housing choices (DPE, 2017).	The Project is proposed to connect to existing transmission lines and will therefore provide ready access to the electricity network, resulting in a contribution to the future economy. The development of the BESS aligns with the aim of a prosperous economy in that it will facilitate the development of additional renewable energy by firming energy supply and providing stability and reliability. The project also aligns with the intention of interconnecting biodiversity corridors. The development of the BESS would result in the majority of vegetation on the site being retained, in order to minimise any adverse environmental impacts and maintaining biodiversity corridors. Development of the BESS will also include new 330 kV overhead transmission lines that will connect directly to the 330 kV Bannaby Transgrid Substation.
Local Context		
Upper Lachlan Shire Local Strategic Planning Statement (LSPS) 2020	The Upper Lachlan Shire LSPS 2020 provides a framework for the social, economic, and environmental land use needs throughout the Upper Lachlan Shire LGA over the next 20 year.	The Project will provide jobs and investment within the Upper Lachlan Shire LGA, but will not compete with agricultural industries, contributing to the objectives of <i>Planning Priority 4: Business Development</i>. The local economy is currently heavily dependent on agriculture. With agriculture's contribution to the economy decreasing, other business opportunities, such as renewable energy, are required.

Strategy, Policy or Plan	Description	Project Alignment
Upper Lachlan Community Strategic Plan 2042	The Upper Lachlan Community Strategic Plan 2042 outlines the future vision and strategic directions for the Upper Lachlan Regional community. The Community Plan is executed under 5 themes and strategic objectives: community, economy, environment, infrastructure, and civic leadership.	The Project will directly respond to strategic objective <i>B. Our economy</i> by creating diversified employment opportunities. The Project also meets the goals of strategic objective <i>C. Our environment</i> by expanding renewable energy resources to the region.

2.3 SITE AND SURROUNDING DEVELOPMENT

2.3.1 REGIONAL CONTEXT

The Project is located in the Upper Lachlan LGA, approximately 204 km southwest of Sydney (by road). The closest regional centre is Goulburn, located 70 km south of the Project. Goulburn has a population of 33,598 (Australian Bureau of Statistics (ABS) 2024).

The Upper Lachlan Shire is within the South East and Tablelands region of NSW. The Abercrombie River defines the northern boundary and the Wollondilly and Lachlan Rivers define the southern boundary. The total population estimate of the Upper Lachlan LGA is 8,514 (ABS, 2021), with most residents living in the town of Crookwell, 56 km west of the Project.

Agriculture is the primary employment sector within the LGA, which is similar to the adjoining LGAs of Goulburn-Mulwaree and the Yass Valley. Renewable energy is also becoming a prominent part of the landscape in the Upper Lachlan Shire.

Table 2-2 lists the existing and relevant future projects within 50 km of the Project. Only projects within a 20 km radius of the site will be assessed for cumulative impacts; however, the table demonstrates the significant number of renewable energy projects in the region that may benefit from the Project. These projects are shown in **Figure 2-4**.

TABLE 2-2 MAJOR PROJECTS IN THE REGION

Project	Application Number	Developer	Proximity	Status
Taralga Wind Farm	DA241/04	RES Southern Cross Pty Ltd	13 km west	Approved
Wattle Creek BESS	SSD-63345458	Spark Renewables Pty Ltd	17 km south	Proposed
Wattle Creek Solar Farm	SSD-63344210	Spark Renewables Pty Ltd	17 km south	Proposed
Marulan Gas-Fired Power Station	MP07_0175	EnergyAustralia	19 km south	Approved
Berrima Coal Mine	MP10_0172	Boral Cement Ltd	20 km east	Approved
Gunlake Quarry	MP07_0074	Gunlake Quarries (division of Rollers Australia Pty Ltd)	28 km south	Approved
Marulan Solar Farm	SSD-13137914	Terrain Solar	33 km southwest	Approved

Project	Application Number	Developer	Proximity	Status
Peppertree Quarry	MP06_0074	Boral Cement Ltd	36 km south	Approved
Marulan South Limestone Mine Continued Operations Project	SSD-7009	Boral Cement Ltd	37 km south	Approved
Marulan Quarry	SSD-65146459	Global Quarries Australia Pty Ltd	37 km southwest	Proposed
Crookwell 3 Wind Farm	SSD-6695	Crookwell Development Pty Ltd	37 km southwest	Approved
Crookwell 2 Wind Farm	DA176-9-2004	Gamesa Crookwell Pty Ltd & Crookwell Development Pty Ltd (Joint Venture)	37 km southwest	Approved
Paling Yards Wind Farm	SSD-29064077	Global Power Generation Australia	42 km northwest	Proposed

2.3.2 LOCAL CONTEXT

The Project area is approximately 8ha and is located 6.5 km (by road) east of Bannaby, NSW. The Project area has a history of agricultural activities and previously formed part of a wider agricultural operation, until the land was subdivided into a number of different land parcels. Currently the site does not serve as productive agricultural land and is used for non-intensive agricultural activities, including livestock grazing for a limited number of animals. The Project area is zoned RU2 Rural Landscape under the Upper Lachlan Local Environmental Plan 2010 (ULLEP 2010).

There is an existing farm shed and associated structures present on the site that support current land uses. Access to the Project is provided via an internal track off Hanworth Road. This track passes through adjoining allotments to the west of the Project site (Lot 401 DP1265813 and Lot 402 DP1265813). From Hanworth Road the Project has access to the regional centre of Goulburn and by extension the cities of Canberra and Sydney via the Hume Highway.

Natural features surrounding the Project include the Guula Ngurra National Park, 6 km to the north-east, the Bangadilly National Park, 11 km to the south-east and the Wollondilly River 3 km to the east. The landscape is undulating, with slopes from the north and south travelling down towards St Pauls Creek in the centre of the site. This depression has a significant amount of native vegetation present that is mapped by the NSW State Vegetation Type Map as being consistent with a number of Plant Community Types (PCTs).

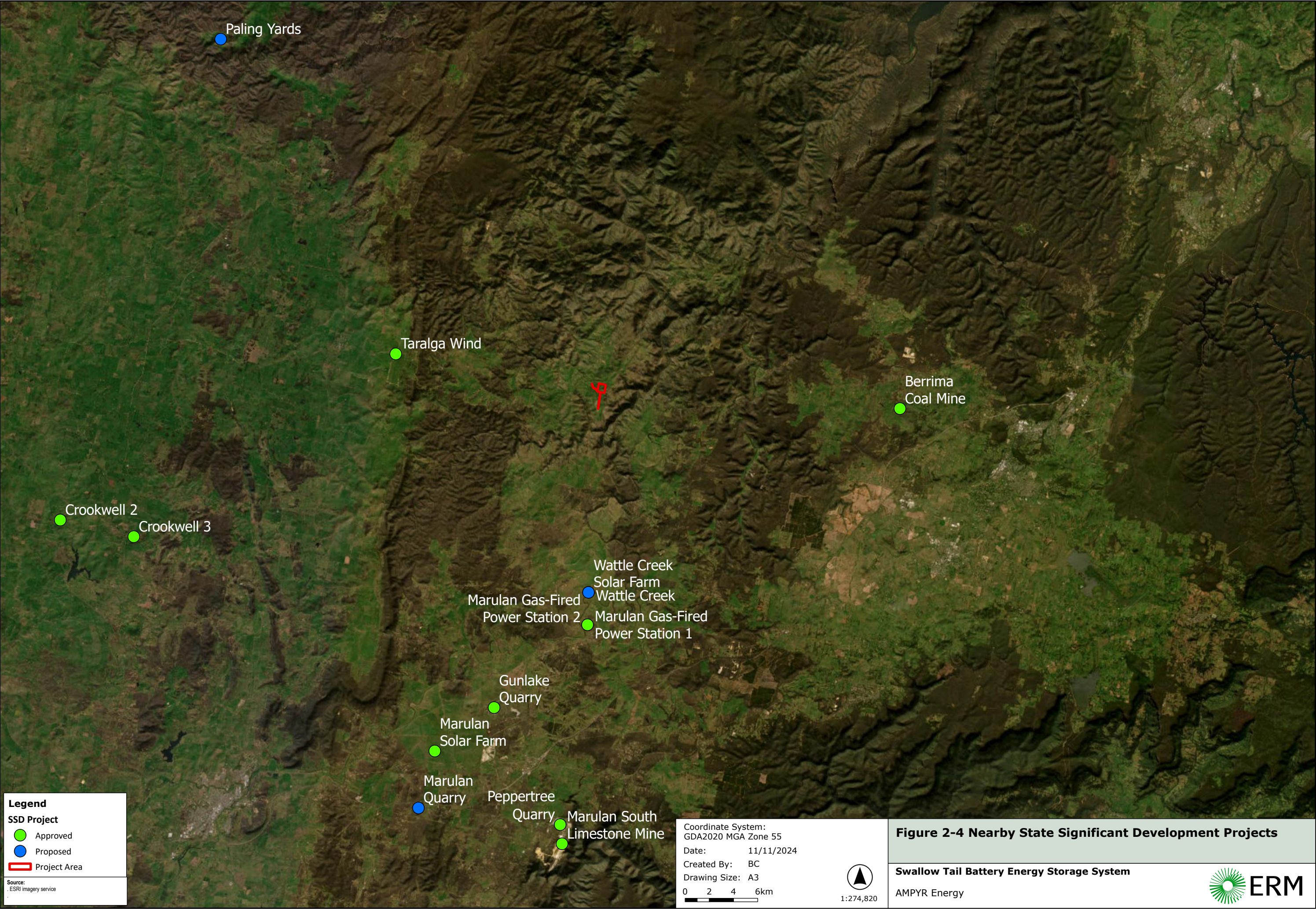
The Project is located 1.5 km north of the existing Bannaby South 330 kV Substation. The location of the Project has been selected due to the proximity to the substation, which will limit the extent of new transmission infrastructure required to be constructed. The location has also been proposed to avoid any environmental impacts as far as possible.

2.3.2.1 KEY HAZARDS AND RISKS

Table 2-3 outlines key hazards and risks associated with the site and surrounds that have the potential to influence the development of the Project.

TABLE 2-3 KEY HAZARDS ASSOCIATED WITH THE PROJECT AREA

Hazard	Description
Access	The Project will be accessed via an existing internal track that passes through two adjacent lots to the west and onto Hanworth Road. The Project is located approximately 55 km (by road) from the Hume Highway. This major road has connectivity to Sydney, Goulburn and Canberra and is part of the Oversize Overmass load carrying vehicle network. Project access is further discussed in Section 3.2.6
Mining and Exploration	The Project is not located within a mine subsidence district and has no active mining and exploration titles or applications. Active mineral and coal exploration titles exist in the locality; however they are more than 50 km away to the east. This has not been considered further.
Topography	The site is characterised by an undulating landscape with strong variations in topography ranging from the highest point of 742 m in the northwest corner of the site to the lowest point of 674 m in the gully where St Pauls Creek is located. A topographical map of the Project is shown in Figure 3-2.
Groundwater and Groundwater Dependent Ecosystems	There are no boreholes present within the site and surrounding area. Review of the Groundwater Dependant Ecosystem (GDE) Atlas determined that there is a low-moderate potential for an aquatic GDE to occur along St Pauls Creek. No other GDEs are mapped on the site.
Bushfire and Vegetation	There is a significant amount of woody vegetation present within the site associated with St Pauls Creek. This area has been mapped as bushfire category 1 and is to be given a 100 m buffer. This vegetation type has the highest combustibility and likelihood of developing fully formed fires. Bushfire prone land mapped within the site is shown in Figure 6-4
Surface Water	St Pauls Creek is the only naturally occurring water course present within the site. This creek drains into the nearby Wollondilly River. There are three farms dams that occur within the lot boundary. Watercourses present within the site are shown in Figure 6-7.
Flooding	There is no flood prone land mapped within the site or adjacent areas. Review of existing data determined that there are no available flood studies for the Bannaby area.
Contamination	Review of the NSW EPA Contaminated Land Records determined that there were no contaminated sites registered with the NSW EPA within the Upper Lachlan Shire.



3. THE PROJECT

This section presents a detailed description of the construction and operation of the Project, including Project staging, construction and operational activities and Project alternatives.

3.1 PROJECT AREA

The Project area comprises the total 40 ha of Lot 39 DP 750005, which is zoned RU2 Rural Landscape under the ULLEP 2010. There are no restrictions or covenants that apply to this freehold parcel of land. The Development footprint comprises 8 ha within the Project area.

Table 3-1 provides the details of the Project area as shown in **Figure 3-1**. The topography of the Project area is shown in **Figure 3-2**.

TABLE 3-1 PROPERTY DETAILS OF THE PROJECT

Aspect	Description
Address	Hanworth Road, Bannaby NSW 2580
Lot/DP	Lot 39 DP 750005
LGA	Upper Lachlan Shire Council
Land Zoning	RU2 Rural Landscape
Land use	Non-intensive livestock grazing

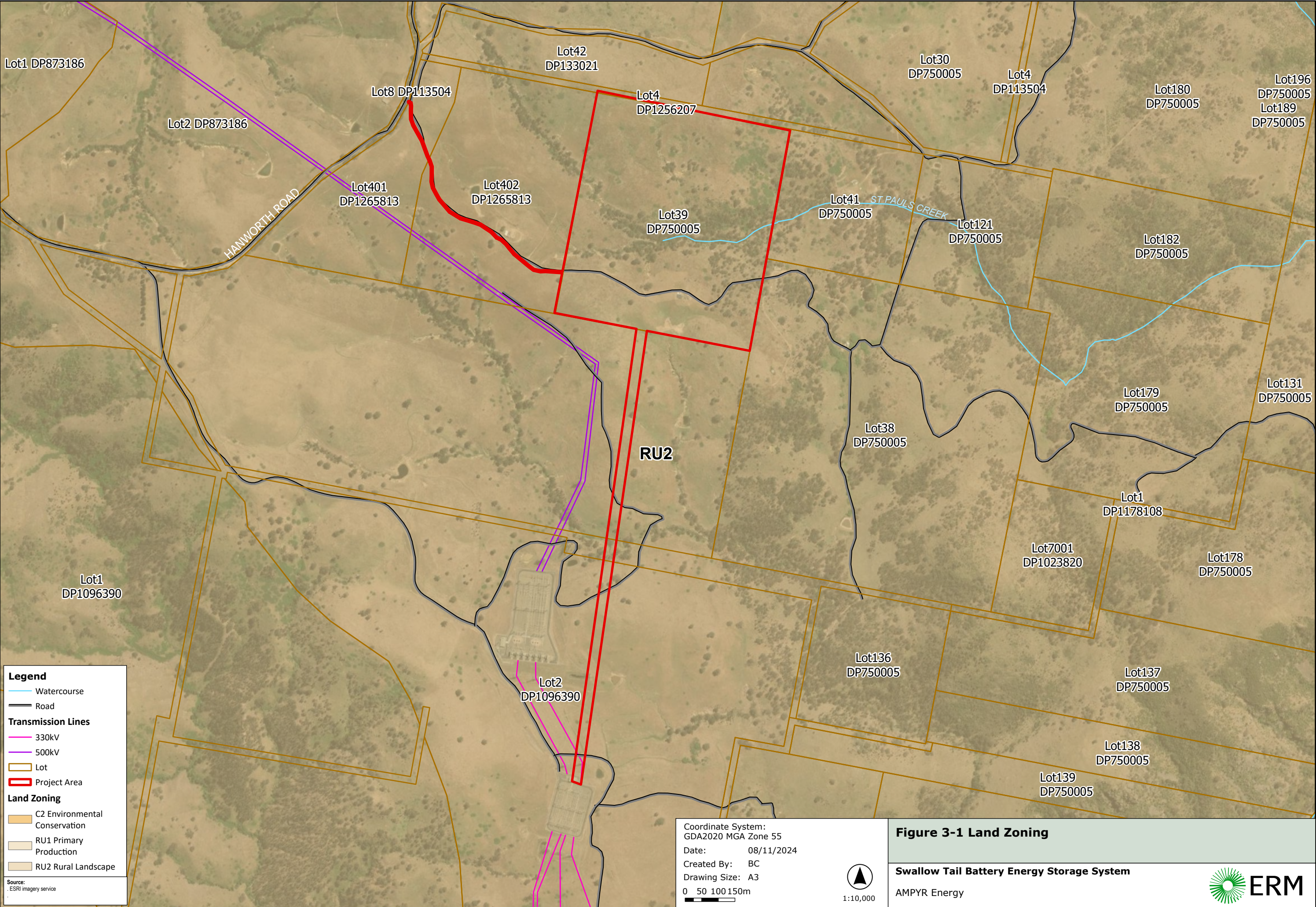
3.2 PROJECT DESCRIPTION

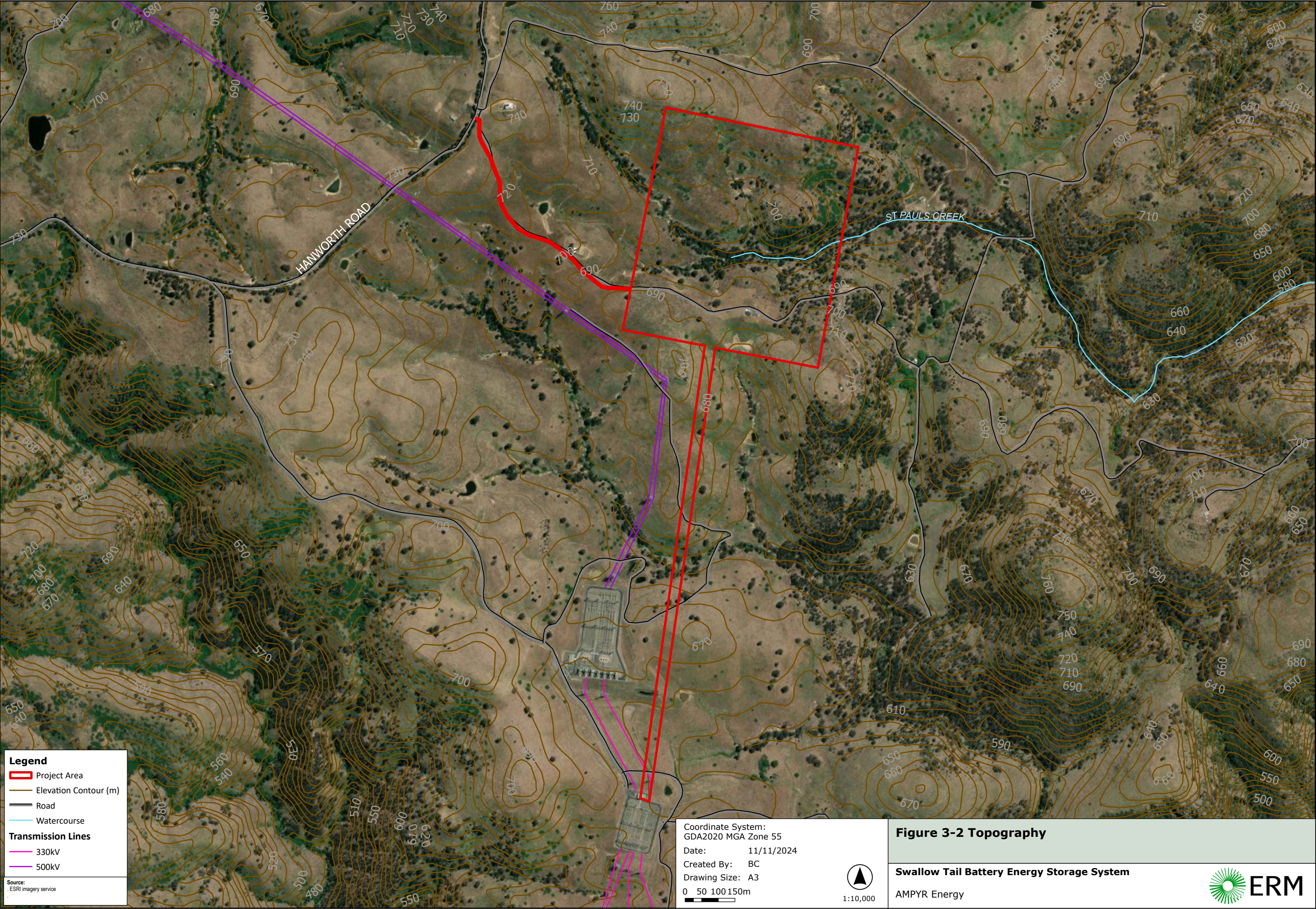
The Project will involve the construction, operation and decommissioning of a 375 MW / 1500 MWh BESS facility, 33/330 kV on-site substation, 330 kV high voltage overhead transmission line, access via Hanworth Road and ancillary infrastructure. The 330 kV high voltage overhead transmission line will connect directly to the Bannaby Substation, operated by Transgrid.

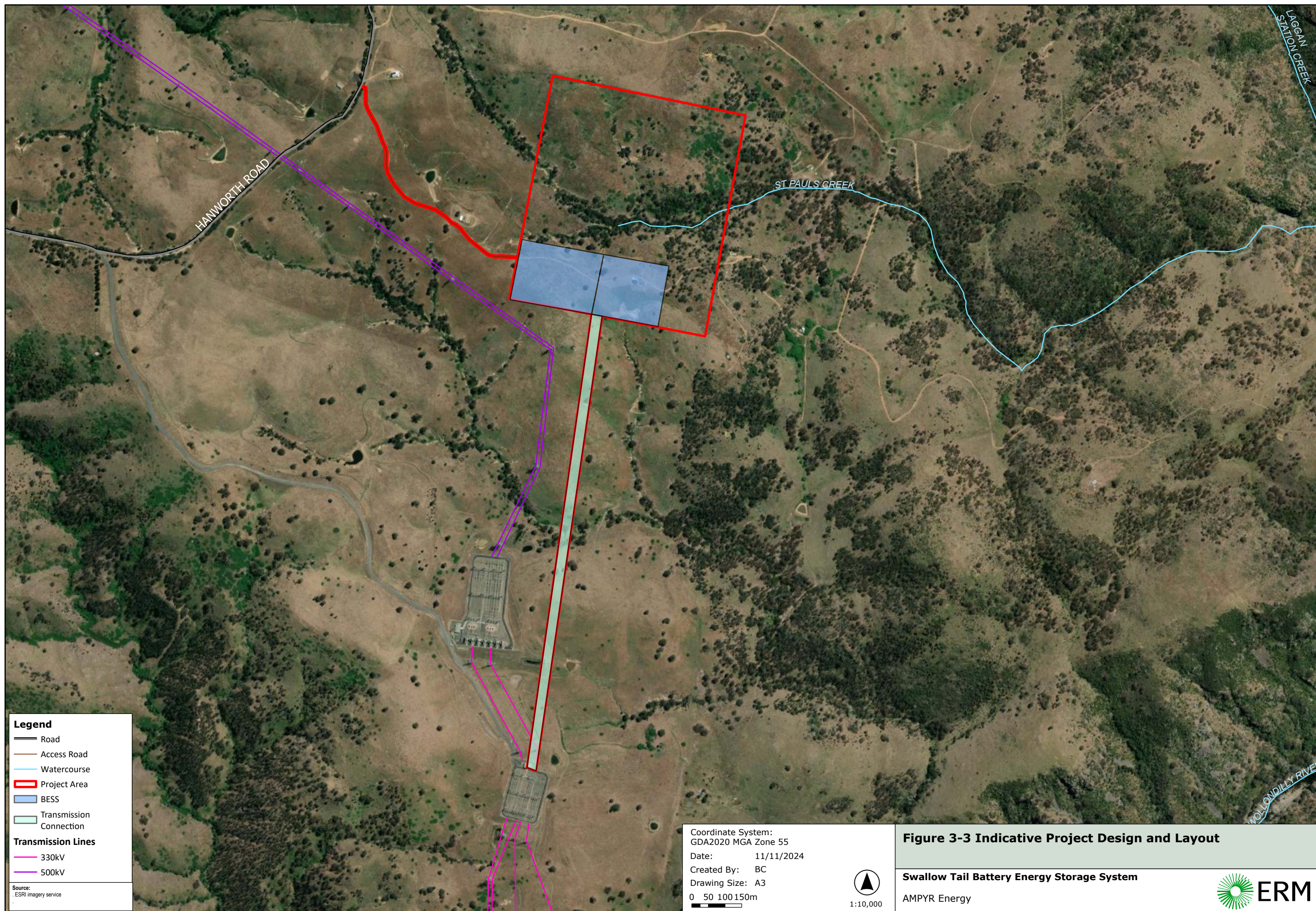
Project components and specifications are provided in **Table 3-2** below. An indicative Project layout is being developed within the development footprint, within the southern boundary of the Project area, adjacent to Transgrid land. The Project layout, once finalised, will identify the BESS and ancillary infrastructure, including the proposed 330 kV transmission line that are to connect to the 330 kV Bannaby Substation. A detailed design will be established once site constraints have been fully established as part of the studies undertaken to support the EIS. An indicative Project design and layout is shown in **Figure 3-3**.

TABLE 3-2 INDICATIVE PROJECT COMPONENTS AND SPECIFICATIONS

Component	Feature	Specification
Energy Storage	BESS	One BESS with an expected storage capacity of 375 MW / 1500 MWh.
Battery	Lithium-ion	Grid-forming converter-interfaced.
Electrical Reticulation Network	Switchyard	Switchyard and other electrical equipment providing connection from the BESS to 330 kV transmission lines.
	Substation	One on-site 33/330 kV substation.
	Grid Connection	The Project will connect to the existing Bannaby Substation, located 1.5 km south of the Project via new high voltage transmission lines.
Access	Site Access	The Project is expected to be accessed from Hanworth Road via Lot 401 DP 1265813 and Lot 402 DP 1265813. The existing access track is to be upgraded to facilitate vehicles during construction and operation.







3.2.1 BATTERY ENERGY STORAGE SYSTEM

The primary component of the Project is a 375 MW / 1500 MWh BESS facility. The BESS will store, and discharge electricity from/to the NEM. The BESS will store electricity during periods of oversupply or low demand. Subsequently, the BESS will discharge stored electricity during times of peak demand. This will assist in the stabilisation of the NEM during periods of disruption.

The BESS will consist of lithium-ion battery units housed in shipping container style enclosures with inverters, transformers and other associated electrical infrastructure. The anticipated area occupied by the BESS is approximately 8 ha.

3.2.2 ELECTRICAL RETICULATION NETWORK

The Project will include at least 1.5 km of a new overhead, high voltage transmission line. This will be used to connect to the electricity grid via the Bannaby Substation south of the Project site. The transmission line is expected to be 330 kV and connect to the 330 kV substation.

3.2.3 DEVELOPMENT FOOTPRINT

The development footprint represents the Applicant's preferred maximum potential area of impact associated with the construction and operation of the Project. For the purposes of this Scoping Report the development footprint incorporates the BESS facility, connection corridor and access road. This extends over an area of 20 ha, including land in the south-west portion of Lot 39 DP750005 (BESS), the transmission easement through Lot 2 DP1096390 (connection corridor), and a portion of Lot 401 DP1265813 and Lot 402 DP1265813 (access road).

The indicative development footprint is shown in **Figure 3-3**. Further refinements to the project layout and development footprint will be subject to detailed design of the Project and will be informed by assessments completed for the EIS.

3.2.4 CONSTRUCTION AND TEMPORARY FACILITIES

The Project will require the construction of the following facilities:

- Temporary construction compound and site office including car parking, amenities and perimeter fencing;
- Laydown area;
- Delivery of Project components including battery modules and associated components;
- Upgrade of internal access tracks;
- Minor earthworks for site levelling;
- Installation of a new transmission line; and
- Access to the Project area from Hanworth Road.

3.2.5 TRANSPORT ROUTE

Construction of the Project will require the transportation of Project components from Port Botany, in Sydney. This route will use the existing Oversize Overmass (OSOM) Load Carrying Vehicles Network, travelling west on Foreshore Road, General Holmes Drive and connection onto the M5 Motorway.

This connects to the Hume Highway in southwestern Sydney, which will pass through sections of north Goulburn via Sydney Road connecting to Taralga Road. Taralga Road connects to Bannaby Road to the east, which will facilitate access to Hanworth road and the proposed access location for the Project. Based on review of the NSW OSOM Network, minimal road upgrades are required to facilitate the passage of heavy vehicles used in the transportation of Project components. The Project will use the transport route utilised by the Taralga Wind Project in order to minimise the need for road upgrades along the transport route. This was a key consideration in the site selection for the Project.

Project components that are likely to require delivery via this route include battery units, enclosures, and electrical reticulation infrastructure.

3.2.6 SITE ACCESS

The Project will be accessed from Hanworth Road to the west of the Project site pursuant to a carriageway easement that benefits Lot 39. This easement is registered on title pursuant to dealing DP1265813. The easement is 20 metres wide and provides the Project proprietor with the right to construct and maintain an access road within the bounds of the easement area.

3.2.7 ANCILLARY ACTIVITIES

The Project may also require the following ancillary activities:

- Water sources to be used for construction activities such as dust suppression. This could be from on-site farm dams, rainwater collection tanks or off-site water sourcing;
- Subdivision of Lot 39 DP 750005 to provide a new allotment for the BESS facility to be leased by the BESS operator;
- Subdivision of Lot 39 750005 to enable Transgrid to connect the Project to the Bannaby 330 kV Substation;
- Visual screening through landscaping and fencing; and
- Geotechnical investigations to inform site levelling and road grading.

Ancillary activities are subject to further technical assessments prepared to support the EIS.

3.3 PROJECT STAGING

The Project is currently in the planning and approvals stage, which involves the preparation of a Scoping Report in pursuit of Project specific SEARs, and subsequently the preparation of the Project EIS and determination.

The anticipated staging of the Project is summarised in **Table 3-3** below.

TABLE 3-3 PROJECT STAGING

Stage	Estimated Date of Completion
Planning and Approvals	2026
Construction	2027
Commissioning and Operation	2028

3.3.1 DEVELOPMENT PHASES

3.3.1.1 CONSTRUCTION

Construction of the Project is anticipated to commence in 2027 and is expected to extend over a 15-month duration. Approximately 120 Full Time Equivalent (FTE) jobs are expected to be generated during the construction of the Project. Primary construction activities are expected to include the following:

- Earthworks and site establishment for the foundations;
- Installation of security fencing and landscaping;
- Installation of Project components including:
 - Lithium-ion battery components;
 - Transformers and switching stations; and
 - Ancillary infrastructure
- Commissioning activities.

Project components will all be manufactured offsite and delivered to the Project area.

3.3.1.2 OPERATION

The Project is proposed to operate 24 hours a day, seven days a week. Project components such as the BESS have an expected lifetime of approximately 30 years. The BESS facility will be managed remotely with an expected 2-3 FTE staff required for the life of the Project. Maintenance and monitoring activities will be completed on a regular basis. These works are expected to be undertaken by appropriately qualified external contractors.

3.3.1.3 DECOMMISSIONING

Options for Project decommissioning and recycling of infrastructure components will be investigated in the EIS phase. At the end of the BESS lifetime the Project could be formally decommissioned, all infrastructure removed and the land rehabilitated. Decommissioning will be completed with relevant legal requirements, regulations and conditions of approval.

3.4 PROJECT ALTERNATIVES

Alternatives to the development of the Project have been considered as a part of this assessment. These include:

- 'Do nothing' (not undertaking the Project);
- Alternative site selection; and
- Alternative project, electricity generation.

3.4.1 NOT UNDERTAKING THE PROJECT

Not undertaking the Project would result in continued non-intensive grazing activities on site. This would represent a missed opportunity for the increased storage capacity of the NEM. There are several renewable energy projects in development within the Upper Lachlan Shire (**Section 2.3**) that have the potential to benefit from an increased storage and discharge capacity offered by the Project. Additionally, the benefits and objectives outlined in **Section 1.3** would not be achieved.

Not progressing with the development would forgo the capital investment and the creation of direct and indirect employment through construction, operation and decommissioning.

3.4.2 ALTERNATIVE SITE SELECTION

The Applicant has considered alternative site selection for the Project. However, the current site located at Lot 39 DP750005 is preferred due to the following:

- Desktop environmental assessments detailed in **Section 6** determined that:
 - Impacts to native vegetation would be limited based on the current design;
 - There are no sites of Aboriginal cultural heritage;
 - There are no sites of historic heritage; and
 - The site is not located on land that has been identified as flood prone.
- The site is located close to the 330 kV Bannaby Transgrid (1.5 km north) substation, which would facilitate access to the NEM with only one easement required to be negotiated with Transgrid;
- The Project can use transport routes utilised by previous SSD Projects to limit the extent of road upgrades required to transport Project components to the site;
- Use of the Project area will promote a diversified income stream for the Project landowner; and
- Non-intensive grazing activities can still occur in parts of the allotment not occupied by the Project.

3.4.3 ALTERNATIVE PROJECT

The Applicant has considered energy generation as a Project alternative using wind or solar power generation. The Project's current form is preferred due to the small size of the parcel of land identified (40 ha). This area is not large enough to house a wind or solar development with the capability to supply electricity to the NEM. These developments would increase the potential for impacts to environmental sensitivities such as biodiversity, as energy generation projects typically require larger development footprints. The Project is expected to occupy 8 ha of the 40 ha lot.

4. STATUTORY CONTEXT

This section outlines the key statutory requirements for the Project under the EP&A Act and other relevant NSW and Commonwealth legislation in accordance with the *State Significant Development Guidelines – Preparing a Scoping Report* (DPE, 2022b).

4.1 POWER TO GRANT CONSENT

Approval for the Project will be sought under Part 4, Division 4.7 of the EP&A Act, which outlines the approval pathway for development deemed to be SSD. Section 4.36(2) of the EP&A Act states:

(2) A State environmental planning policy may declare any development, or any class or description of development, to be State significant development.

4.2 PERMISSIBILITY

The Project is contained wholly within the Upper Lachlan Shire LGA and is subject to the provisions of the ULLEP 2010. The Project area is zoned in its entirety as RU2 Rural Landscape under the ULLEP 2010.

Under the ULLEP 2010 '*Electricity generating works*' are defined as 'a building or place used for the purpose of –

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

A BESS would be defined as 'electricity generating works'.

Under the ULLEP 2010, the use of the site for 'electricity generating works' is not prohibited in the RU2 Rural Landscape zone and is therefore permissible.

The *State Environmental Planning Policy (Infrastructure and Transport) 2021* (Transport and Infrastructure SEPP) provides that development for the purpose of electricity generating works may be carried out by any person with consent on any land in a prescribed non-residential zone. Section 2.35 of the Transport and Infrastructure SEPP confirms that the RU2 Rural Landscape zone is listed as a prescribed non-residential zone. Therefore, pursuant to sub-section 2.36(1) of the Transport and Infrastructure SEPP, the Project is permissible with development consent.

4.3 POWER TO GRANT APPROVAL

Under the provisions of Section 2.6 (1) of *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP), a development is classified as SSD if it is specified in Schedule 1 or 2:

- (a) the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the Act, and*
- (b) the development is specified in Schedule 1 or 2.*

Schedule 1 State significant development – general, Section 20 Electricity generating works and heat or co-generation, defines SSD development as:

‘development for the purpose of electricity generating works or heat and their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power), that –

- a) has an estimated development cost of more than \$30 million, or*
- b) has an estimated development cost of more than \$10 million and is located in an environmentally sensitive area of State significance.*

The Project involves development for the purpose of electricity generating works, which will have an estimated development cost of more than \$30 million. Therefore, the Project is classified as SSD under Part 4 of the EP&A Act and will require approval under the Transport and Infrastructure SEPP.

4.4 RELEVANT COMMONWEALTH AND STATE LEGISLATION

Other approvals required under relevant NSW and Commonwealth legislation are detailed in **Table 4-1**.

TABLE 4-1 APPROVALS REQUIRED UNDER COMMONWEALTH AND STATE LEGISLATION

Legislation	Description
Commonwealth	
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	Approval from the Minister for the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) is required for any action that will or is likely to have a significant impact on one or more Matters of National Environmental Significance (MNES).
<i>Native Title Act 1993</i>	Native title recognises the traditional rights and interests to land and waters of Aboriginal and Torres Strait Islander people. Under the Native Title Act 1993, native title claimants can make an application to the Federal Court to have their native title recognised by Australian law. Any native title matters will be considered further during the preparation of the EIS.
<i>Biosecurity Act 2015</i>	Under the Biosecurity Act 2015, all landowners have a responsibility to control noxious weeds in their property, otherwise known as a General Biosecurity Duty. The General Biosecurity Duty states “<i>Any person who deals with a biosecurity matter or a carrier and who knows, or ought to reasonably know, the biosecurity risk posed or likely to be posed by the biosecurity matter, carrier or dealing has a biosecurity duty to ensure that, so far as is reasonably practicable, the biosecurity risk is prevented, eliminated or minimised.</i>” The general biosecurity duty applies to all weeds listed in Schedule 3 of the Biosecurity Act 2015 (also included as Weeds of National Significance (WoNS)).

Legislation	Description
State	
Biodiversity Conservation Act 2016 (BC Act) – Section 7.14	The Minister for Planning is required to take into account the impact of the development on biodiversity values as assessed in the Biodiversity Assessment Report (BDAR). The Minister may (but is not required to) further consider under the BC Act the likely impact of the proposed development on biodiversity values.
<i>Heritage Act 1977</i>	The Project will not require a Part 4 approval to carry out an act, matter or thing referred to in Section 57(1), or an excavation permit under Section 139.
<i>National Parks and Wildlife Act 1979</i>	The Project will not require an Aboriginal Heritage Impact Permit (AHIP) under Section 90.
<i>Roads Act 1993</i>	The Project will require consent from the appropriate roads authority under Section 138 of the Roads Act for any works undertaken on public roads. The impacts of the Project on roads and traffic will be assessed within the EIS.
<i>Water Management Act 2000</i>	The Project will not require a water use approval under Section 89, a water management work approval under Section 90, or an activity approval (other than an aquifer interference approval) under Section 91. The Project may require water access licenses under the <i>Water Management Act 2000</i>. The soil and water assessment will identify whether any water access licenses will be required for the Project.
<i>Protection of the Environment Operations Act 1997 (POEO Act)</i>	The POEO Act is the primary piece of legislation regulating pollution control and waste disposal in NSW. Schedule 1 of the POEO Act defines scheduled activities for which an Environmental Protection Licence (EPL) is required. An EPL is required under Section 48 of the POEO Act to perform an activity listed under Schedule 1 of the POEO Act. Energy storage is not listed as a scheduled activity under the POEO Act. Therefore, the project will not require an EPL.
<i>Rural Fires Act 1997</i>	The Project will not require a bush fire safety authority under Section 100B, as the development does not involve subdivision for residential or rural residential development. A Bushfire Assessment will be prepared as part of the EIS.
<i>Fisheries Management Act 1994</i>	The Project will not require a dredging or reclamation work permit under Section 201, a marine vegetation regulation of harm permit under Section 205, or a passage of fish not to be blocked permit under Section 219.

4.5 MANDATORY MATTERS FOR CONSIDERATION

The consent authority is required to consider a range of matters when deciding whether to grant consent for the Project. These are referred to as mandatory considerations, which are detailed in **Table 4-2**.

TABLE 4-2 MANDATORY CONSIDERATIONS

Statutory Reference	Mandatory Consideration
Considerations under the EP&A Act and Regulation	
Section 1.3 – Objects of the Act	Pursuant to Section 1.3 of the EP&A Act, the Objects of the Act are: - to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources; - to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment; - to promote the orderly and economic use and development of land; - to promote the delivery and maintenance of affordable housing; - to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats; - to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage); - to promote good design and amenity of the built environment; - to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants; - to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State; and - to provide increased opportunity for community participation in environmental planning and assessment.
Section 4.15 – Evaluation	In accordance with Section 4.40 and Section 4.15 of the EP&A Act, the consent authority is required to take the following matters into consideration in determining a development application: - Relevant State Environmental Planning Instruments (EPIs) including: - State Environmental Planning Policy (Planning Systems) 2021 - State Environmental Planning Policy (Biodiversity and Conservation) 2021 - State Environmental Planning Policy (Resilience and Hazards) 2021 - Transport and Infrastructure SEPP 2021; and - ULLEP 2010. - Relevant Development Control Plans (DCPs): - The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality; - The suitability of the site for the development; - Any submissions made in accordance with this Act or the regulations; and - The public interest. These will be considered in the EIS.
Considerations under relevant EPIs	
State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP)	One of the aims of Chapter 2 of the Planning Systems SEPP is to identify development to which the SSD assessment and determination process under Division 4.7 of Part 4 of the EP&A Act applies. As outlined in section 4.2, the project is classified as SSD pursuant to Section 20 of Schedule 1 of the Planning Systems SEPP.

Statutory Reference	Mandatory Consideration
State Environmental Planning Policy (Biodiversity and Conservation) 2021 (Biodiversity and Conservation SEPP)	The Biodiversity and Conservation SEPP aims, among other things, to protect the biodiversity values of trees and other vegetation in the State. Chapter 4 relates to koala habitat protection. The EIS will consider threatened fauna predicted to occur in the locality, including koalas and the presence of any vegetation that provides habitat for koalas.
State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP) – Chapter 3	Chapter 3 of the Resilience and Hazards SEPP assesses the potential hazards associated with the proposed development by providing definitions and guidelines for hazardous industry, offensive industry, hazardous storage establishments, and offensive storage establishments. In accordance with Section 3.7 of the Resilience and Hazards SEPP, consideration will be given to current circulars or guidelines published by the DPHI relating to hazardous or offensive development.
State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP)– Chapter 4	Chapter 4 of the Resilience and Hazards SEPP provides a statewide planning approach to the remediation of contaminated land. Under Section 4.6 (1) of the Resilience and Hazards SEPP, a consent authority is required to consider whether a proposed development site is contaminated before granting consent. An assessment will be prepared as part of the EIS to determine the potential contamination risk associated with the Project.
ULLEP 2010	The EIS will address relevant components of the ULLEP 2010, including: - Section 2.3(2) – The consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within the zone; and - Land Use Table – Objectives and permissible uses of the RU2 –Rural Landscape zone.
Considerations under Development Control Plans	
Upper Lachlan DCP 2010	Under Section 2.10 of the Planning Systems SEPP, DCPs do not apply to SSD projects: <i>2.10 Exclusion of application of development control plans</i> <i>Development control plans (whether made before or after the commencement of this Policy) do not apply to—</i> <i>(a) State significant development, or</i> <i>(b) development for which a relevant council is the consent authority under section 4.37 of the Act.</i> The Project will be classified as SSD.

5. COMMUNITY AND STAKEHOLDER ENGAGEMENT

The Applicant recognises that working closely with local communities to deliver projects leads to a positive, long-term impact on the region in which it operates. To inform the Scoping Report, AMPYR Australia has carried out preliminary engagement with the Project site landowner, adjacent landowners, Upper Lachlan Shire Council, parliamentarians, community groups and regulatory agencies. The approach to engagement has included:

- Targeted stakeholder mapping to identify local community groups, interested parties, utility asset owners/operators and nearby receivers;
- Early engagement with relevant stakeholders including meaningful, transparent discussions about the proposed development;
- Requesting initial feedback on the Project and responding to feedback in a timely concise and clear manner;
- Respectful engagement with Aboriginal communities based on Free Prior and Informed Consent;
- Preference for in-person engagement;
- Facilitation of easy access to Project information;
- Increase awareness of the Project in the community; and
- Establish and communicate the Applicants points of contact.

The Applicant has used the following forms of engagement:

- Letters issued to landowners surrounding the Project, including details of the Project area, preliminary layout and access route;
- Emails to stakeholders, including regulatory agencies; and
- Meetings with Upper Lachlan Shire Council and the DPHI.

5.1 STAKEHOLDERS

The Applicant has identified stakeholders who are likely to be impacted by, interested in, or have influence on the Project. **Table 5-1** below provides an initial list of stakeholders identified that are relevant to the Project. This list will be updated as the Project progresses.

TABLE 5-1 IDENTIFIED STAKEHOLDERS

Stakeholder Group	Description
Existing Landowner	The Proponent has an existing relationship with the landowner of the Project.
Project Neighbours	• There are 11 dwellings located within 2km of the Project (Figure 6-5) which are owned by a mix of local community members and corporate bodies. • Within 500m of the Project area there are 4 dwellings, 3 of which are residential and 1 non-residential. The applicant notes that although the 3 residential dwellings within 500m are not approved dwellings under state legislation, the applicant will continue to engage with them in line with best practice to maintain social license and minimise the potential disruption caused by the project. • The neighbouring lot directly south of the of the project area through which the proposed transmission line will traverse is owned by Transgrid and is where the Bannaby Substation is located

Stakeholder Group	Description
Aboriginal Community	The Gundungurra Group, the land of the Project area is under the Gundungurra Indigenous Land Use Agreement.
Local Community Groups	Bannaby Residents Action Group, formed to oppose the Humelink Project
Local Government	Upper Lachlan Shire Council

5.2 ENGAGEMENT COMPLETED TO DATE

Community and stakeholder engagement for the Project commenced in 2024. Consultation completed to date is detailed in **Table 5-2** below.

TABLE 5-2 SUMMARY OF ENGAGEMENT ACTIVITIES COMPLETED TO DATE

Engagement Activity	Description
Project Landowner and Neighbours	- Engagement, both face-to-face and via phone, in respect to the land acquisition. - Site visits to the landholder since entering into the option to acquire the land. - Engagement with the Project neighbours since Quarter 4 of 2023. - Project update meetings with the neighbours about potential impacts, mitigation measures and Project benefits, since Quarter 1 2024.
DPHI	Pre-scoping meeting held via video conference on 6 November 2024.
Community Groups	Phone calls to community groups in Bannaby and surrounding areas since October 2024.
Taralga Historical Society	Phone call to understand the nature and location of heritage listed buildings in the Bannaby region on 6 November 2024.
Upper Lachlan Shire Council	Phone call and email to council planning department to introduce the Project and organise a Project briefing on 8 November 2024.
Wendy Tuckerman, NSW Member of Parliament for Goulburn	Phone call and email to introduce the Project and arrange a Project briefing on 7 November 2024.
Angus Taylor, Federal Member of Parliament for Hume	Phone call and email to introduce Project and arrange a Project briefing on 7 November 2024.
Gundungurra Indigenous Land Use Agreement (ILUA)	Phone call and email to introduce the Project and arrange a Project briefing, to be held on 5 December 2024.

5.3 FUTURE ENGAGEMENT ACTIVITIES

Engagement activities will continue throughout the EIS phase. Consultation will be undertaken commensurate with:

- Renewable Energy Planning Framework (DPHI, 2024d)
- Undertaking Engagement Guidelines for State Significant Projects (DPIE, 2021);
- Social Impact Assessment Guideline (DPIE, 2023), as applicable; and
- Community Consultative Committee Guidelines State Significant Projects (DP&E 2019) – if a Community Consultative Committee is required.

The following future engagement activities are planned:

- Establish and launch a local community sponsorship fund in November 2024, to provide financial support to community groups (including Aboriginal community groups) targeting issues identified by local stakeholders;
- Establish a Project website and dedicated project email address;
- Develop and distribute Project collateral and project updates;
- Engage with key government agencies (including, but not limited to DPHI, BCS, TfNSW, Upper Lachlan Shire Council, State Members for Goulburn, LALC, Transgrid, RFS, EPA);
- Engage with nearby receivers, community and interested parties; and
- Engage with the Aboriginal Community in respect of Project participation.

All engagement completed will continue to be recorded and collected using a community engagement platform.

5.3.1 MONITORING AND EVALUATION

Engagement and communication will be monitored and evaluated throughout the various Project stages. Results and outcomes of feedback received from stakeholder groups will be incorporated into the Project where possible, to continuously improve Project engagement.

The effectiveness of engagement activities will be monitored by:

- Reviewing enquiries and complaints to identify recurring or unresolved issues;
- Discussions with stakeholders and the local community;
- Discussions with the Project team; and
- Monitoring of local and social media.

6. PROPOSED ASSESSMENT OF IMPACTS

This section of the Scoping Report outlines the matters requiring further assessment in the Project EIS and the level of assessment likely to be required. This report contains a preliminary assessment of key environmental factors, to identify potential areas that could be impacted by the construction and operation of the Project.

6.1 CATEGORISATION OF ASSESSMENT MATTERS

The following has been considered in the identification of matters requiring further assessment in accordance with the State Significant Development Guidelines – preparing a Scoping Report:

- The scale and nature of the likely impacts of the Project and the sensitivity of the receiving environment;
- Whether the Project is likely to generate cumulative impacts with other relevant projects (current and future) in the areas; and
- The ability to avoid, minimise and/or offset the impacts of the Project.

Each of the matters identified in this report and the level of assessment required are listed in **Table 6-1** below.

TABLE 6-1 PROPOSED LEVEL OF ASSESSMENT

Level of Assessment	Environmental Aspect
Detailed Assessment	• Biodiversity; • Aboriginal Cultural Heritage; • Hazards: ◦ Bushfire Risk; ◦ Dangerous goods, hazardous industry • Flooding; • Social; • Noise and Vibration; and • Traffic and Transport including Project access and transport route.
Preliminary Assessment	• Visual; • Historic Heritage; • Economic; • Water Resources; • Land-use and Capability; • Air Quality; and • Waste Management.

A Project EIS will be prepared in response to the SEARs, which will incorporate the assessments outlined in the table above. All assessments will be completed in accordance with stakeholder consultation, industry best practice guidelines, legislative requirements and lessons learned on other BESS facility Projects.

6.2 BIODIVERSITY

The identification of key ecological constraints at the early stage of a Project aids the process of identifying meaningful impact avoidance and minimisation outcomes. These two considerations form part of the Mitigation Hierarchy (i.e. avoid, minimise and mitigate), which precedes the determination of residual impacts where offset obligations are incurred.

Application of the Mitigation Hierarchy is central to the Biodiversity Assessment Method 2020 (BAM), being the mandatory framework for assessing impacts on biodiversity values. A Biodiversity Development Assessment Report (BDAR) is produced by a BAM Accredited Assessor to document the avoid, minimise, mitigate outcomes and residual impacts with offset liability. This process involves a detailed analysis of the biodiversity values in the Project area, which are to be obtained through detailed site investigations.

The information provided in the following sections generally outlines the biodiversity values of the Project area and the assessment approach.

6.2.1 EXISTING ENVIRONMENT

6.2.1.1 BIOREGIONAL SETTING

The Project area is located within the:

- Bungonia IBRA subregion of the Southeastern Highlands IBRA region; and
- Wollondilly - Bindook Tablelands and Gorges Mitchell Landscape (WBTG Mitchell Landscape).

The latter, which is estimated to be 38% cleared within the WBTG Mitchell Landscape, is generally described as:

“Dissected tablelands, marginal gorges and scree slopes on massive Devonian quartz porphyry and small areas of massive Devonian granite. General elevation 600 to 900m, local relief 250m. Thin gritty uniform profiles on steep slopes and around rock outcrops, grey and yellow texture-contrast profiles on flatter slopes. Woodland and open forest of; forest red gum (Eucalyptus tereticornis), yellow box (Eucalyptus melliodora), grey box (Eucalyptus molucana), white box (Eucalyptus albens), black wattle (Acacia mearnsii), Parramatta wattle (Acacia parramattensis), black she-oak (Casuarina litoralis) with numerous shrubs, bracken (Pteridium esculentum) and grasses.” (NPWS 2002).

6.2.1.2 LAND CATEGORISATION

Rural lands are regulated lands under the NSW *Local Land Services Act 2013* (LLS Act), which includes the classification of lands with reference to native vegetation cover. Several land categories exist for this purpose, each influencing the type and nature of assessment involved in a native vegetation clearing proposal. Land categories defined under the LLS Act include:

- Category 1 – exempt lands;
- Category 2 – regulated land;
- Category 2 – vulnerable regulated land; and
- Category 2 – sensitive regulated land.

The BAM does not assess biodiversity values for native vegetation and loss of habitat on Category 1 Exempt lands (see Section 1.5 of the BAM), except for the assessment of ‘prescribed impacts’ on biodiversity values (i.e., clause 6.1 of the *Biodiversity Conservation Regulation 2017*). For example, this includes the effect of removing farm infrastructure such as farm dams on species that may use these habitat features (e.g., amphibians).

Land categorisation applies to the Project as it is located on rural zoned land. There is currently a draft Native Vegetation Regulatory Map (NVR Map) published for the Project area indicating most of it is Category 1 – Exempt Land. This is shown in **Figure 6-1**.

Other land categories include:

- Category 2 regulated land (e.g., scattered trees and riparian vegetation); and
- Category 2 sensitive regulated lands (i.e., steep lands).

Until the draft NVR Mapping is introduced as final, a Land Categorisation Assessment (LCA) approved by the Biodiversity, Conservation and Science Directorate (BCS) is required to define the extent of these land categories, notably the extent of Category 1 – Exempt Lands.

Adjustments in locating the Project area may result following any preferential alignment with verified Category 1 – Exempt Lands; however, it is likely that the complete avoidance of Category 2 lands will represent a design challenge (e.g., transmission line through riparian vegetation).

6.2.1.3 NATIVE VEGETATION

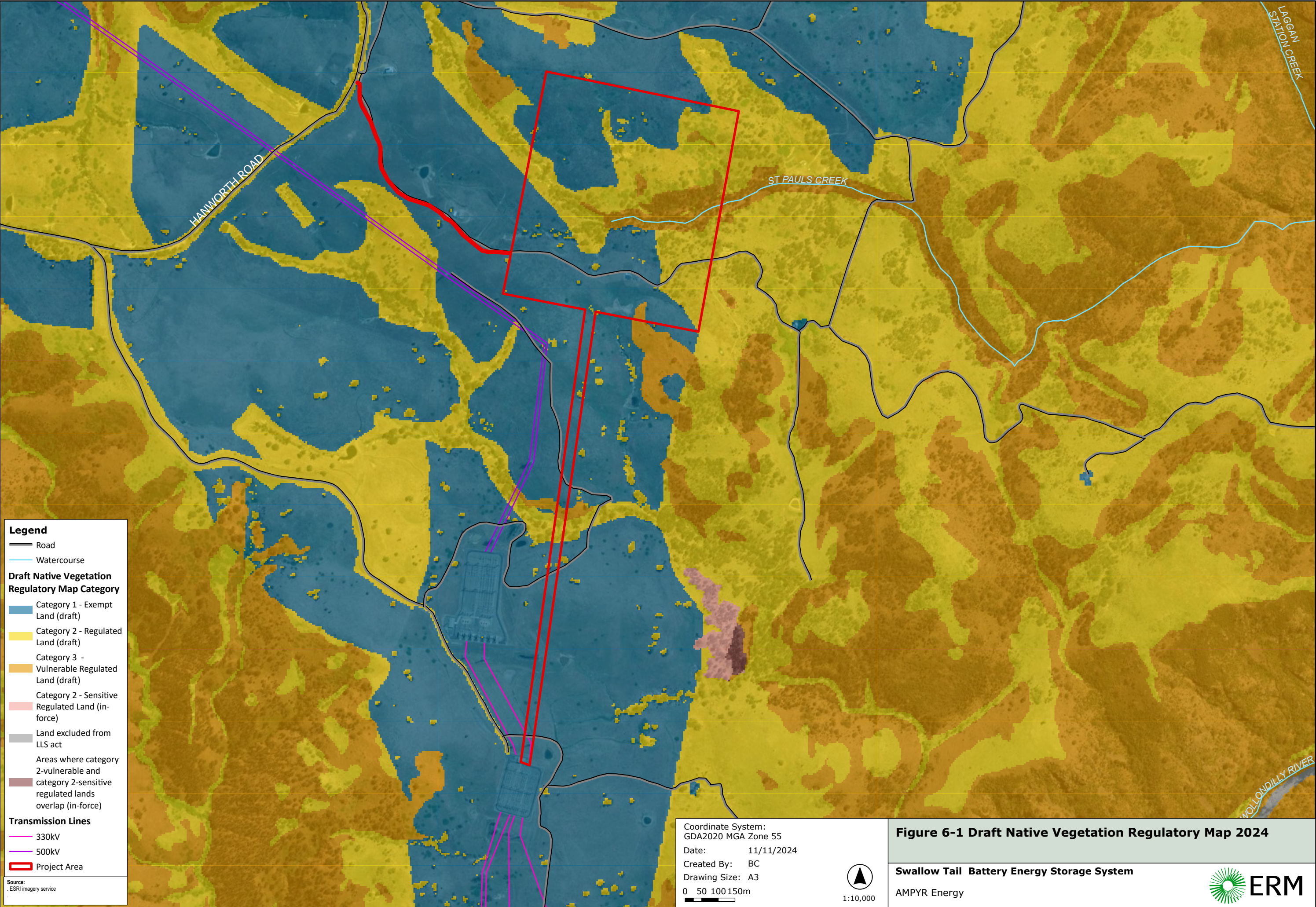
Native vegetation cover of the assessment area (this being the Project area and 1,500m radial buffer) is estimated to be between 10-30%. Patch size is likely to exceed 100 ha for most of this native vegetation cover, except for scattered trees where they are greater than 100 m from extant native vegetation cover.

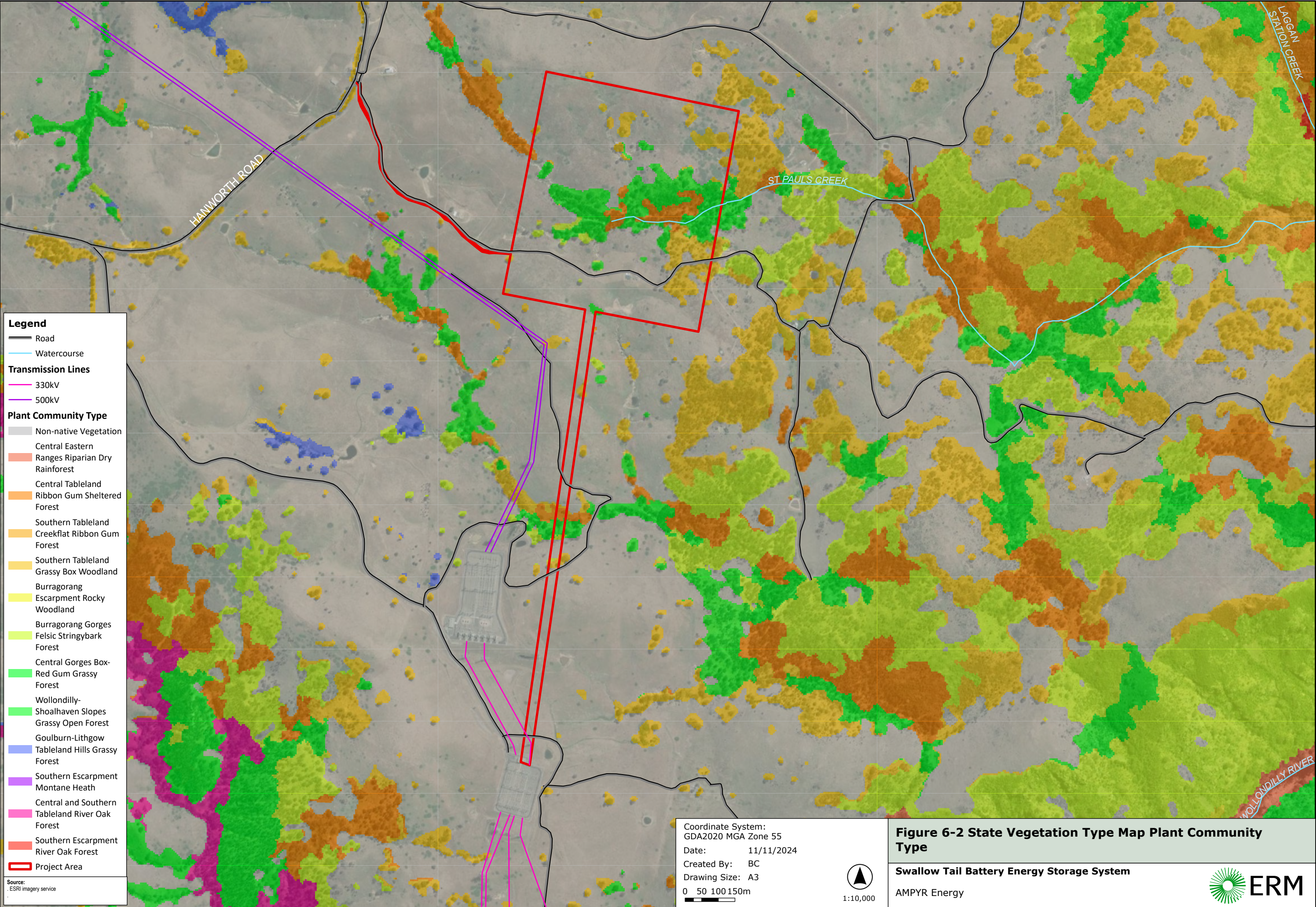
The extent and type of native vegetation within the Project area is to be determined through field survey and assessment. Preliminary insight obtained through available desktop resources (i.e., State Vegetation Type Map (SVTM)) identified the following Plant Community Types (PCTs) as having the potential to occur within the Project area:

- 3303 Central Tableland Ribbon Gum;
- 3376 Southern Tableland Grassy Box Woodland;
- 3481 Burragorang Gorges Felsic Stringybark Forest;
- 3483 Central Gorges Box-Red Gum Grassy Forest; and
- 3486 Wollondilly-Shoalhaven Slopes Grassy Open Forest.

The unverified SVTM mapping is shown in **Figure 6-2.**;

Application of Section 4.1 to 4.4 of the BAM is required to verify native vegetation extent, classification and integrity. This is a formative part of preparing the Project BDAR and is often done in parallel with a LCA (should this be undertaken). Once complete, predicted and candidate threatened species will be more accurately determined for further consideration.





6.2.1.4 PREDICTED CANDIDATE SPECIES

The SVTM predicted PCTs of the Project area were used to generate a preliminary list of Candidate species that may be impacted by the Project. The preliminary Candidate flora species list is provided in **Table 6-2**.

TABLE 6-2 PRELIMINARY CANDIDATE SPECIES LIST - FLORA

Scientific Name	Common Name	BC Act	EPBC Act	Survey Period												
<i>Acacia clunies-rossiae</i>	Kanangra Wattle	V	-	<table><tr><td> Jan </td><td> Feb </td><td> Mar </td><td> Apr </td></tr><tr><td> May </td><td> Jun </td><td> Jul </td><td> Aug </td></tr><tr><td> Sep </td><td> Oct </td><td> Nov </td><td> Dec </td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Dillwynia glaucula</i>	Michelago Parrot-pea	E	-	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td> Sep </td><td> Oct </td><td> Nov </td><td> Dec </td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Diuris aequalis</i>	Buttercup Doubletail	E	E	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td>Sep</td><td> Oct </td><td> Nov </td><td>Dec</td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Eucalyptus aggregata</i>	Black Gum	V	V	<table><tr><td> Jan </td><td> Feb </td><td> Mar </td><td> Apr </td></tr><tr><td> May </td><td> Jun </td><td> Jul </td><td> Aug </td></tr><tr><td> Sep </td><td> Oct </td><td> Nov </td><td> Dec </td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Eucalyptus glaucina</i>	Slaty Red Gum	V	V	<table><tr><td> Jan </td><td> Feb </td><td> Mar </td><td> Apr </td></tr><tr><td> May </td><td> Jun </td><td> Jul </td><td> Aug </td></tr><tr><td> Sep </td><td> Oct </td><td> Nov </td><td> Dec </td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Leucochrysum albicans subsp. tricolor</i>	Hoary Sunray	E	E	<table><tr><td> Jan </td><td> Feb </td><td> Mar </td><td> Apr </td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td> Sep </td><td> Oct </td><td> Nov </td><td> Dec </td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Pomaderris cotoneaster</i>	Cotoneaster Pomaderris	E	E	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td>Sep</td><td> Oct </td><td> Nov </td><td>Dec</td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Pultenaea pedunculata</i>	Matted Bush-pea	E	-	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td> Sep </td><td> Oct </td><td> Nov </td><td>Dec</td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Solanum armourense</i>	-	E	-	<table><tr><td> Jan </td><td> Feb </td><td> Mar </td><td> Apr </td></tr><tr><td> May </td><td>Jun</td><td>Jul</td><td> Aug </td></tr><tr><td> Sep </td><td> Oct </td><td> Nov </td><td> Dec </td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Scientific Name	Common Name	BC Act	EPBC Act	Survey Period			
<i>Solanum celatum</i>		E	-	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec			
<i>Swainsona sericea</i>	Silky Swainson-pea	V	-	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec			

Noting the guidelines for conducting targeted threatened flora surveys, the preliminary Candidate species list notionally indicates September and October as being the most suitable period for conducting these surveys.

The preliminary Candidate fauna species list is provided in **Table 6-3**.

TABLE 6-3 PRELIMINARY CANDIDATE SPECIES LIST - FAUNA

Scientific Name	Common Name	BC Act	EPBC Act	Survey Period												
<i>Anthochaera phrygia</i>	Regent Honeyeater	CE	CE	N/A See Important Habitat Maps												
<i>Aprasia parapulchella</i>	Pink-tailed Legless Lizard	V	V	N/A seek expert advice												
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	E	E	<table><tr><td>■ Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td>Sep</td><td>■ Oct</td><td>■ Nov</td><td>■ Dec</td></tr></table>	■ Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	■ Oct	■ Nov	■ Dec
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<i>Calyptorhynchus lathami lathami</i>	South-eastern Glossy Black Cockatoo	V	V	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>■ Apr</td></tr><tr><td>■ May</td><td>■ Jun</td><td>■ Jul</td><td>■ Aug</td></tr><tr><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td></tr></table>	Jan	Feb	Mar	■ Apr	■ May	■ Jun	■ Jul	■ Aug	Sep	Oct	Nov	Dec
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<i>Cercartetus nanus</i>	Eastern Pygmy-possum	V	-	<table><tr><td>■ Jan</td><td>■ Feb</td><td>■ Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td>Sep</td><td>■ Oct</td><td>■ Nov</td><td>■ Dec</td></tr></table>	■ Jan	■ Feb	■ Mar	Apr	May	Jun	Jul	Aug	Sep	■ Oct	■ Nov	■ Dec
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<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	E	E	<table><tr><td>■ Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td>Sep</td><td>Oct</td><td>■ Nov</td><td>■ Dec</td></tr></table>	■ Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	■ Nov	■ Dec
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<i>Delma impar</i>	Striped Legless Lizard	V	V	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td>■ Sep</td><td>■ Oct</td><td>■ Nov</td><td>■ Dec</td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	■ Sep	■ Oct	■ Nov	■ Dec
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<i>Haliaeetus leucogaster</i>	White-bellied Sea-eagle	V	-	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>■ Jul</td><td>■ Aug</td></tr><tr><td>■ Sep</td><td>■ Oct</td><td>■ Nov</td><td>■ Dec</td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	■ Jul	■ Aug	■ Sep	■ Oct	■ Nov	■ Dec
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Scientific Name	Common Name	BC Act	EPBC Act	Survey Period												
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	V	V	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Hieraaetus morphnoides</i>	Little Eagle	V	-	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Isoodon obesulus obesulus</i>	Southern Brown Bandicoot (eastern)	E	E	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Keyacris scurra</i>	Key's Matchstick Grasshopper	E	E	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Lathamus discolor</i>	Swift Parrot	E	CE	N/A See Important Habitat Maps												
<i>Litoria aurea</i>	Green and Golden Bell Frog	E	V	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Litoria booroolongensis</i>	Booroolong Frog	E	E	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	V	-	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Mixophyes balbus</i>	Stuttering Frog	E	V	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Myotis macropus</i>	Southern Myotis	V	-	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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<i>Ninox connivens</i>	Barking Owl	V	-	<table><tr><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td></tr><tr><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td></tr><tr><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td></tr></table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Scientific Name	Common Name	BC Act	EPBC Act	Survey Period
<i>Ninox strenua</i>	Powerful Owl	V	-	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec
<i>Petauroides volans</i>	Southern Greater Glider	E	E	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec
<i>Petaurus norfolcensis</i>	Squirrel Glider	V	-	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec
<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	E	V	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	V	-	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec
<i>Phascolarctos cinereus</i>	Koala	E	E	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec
<i>Tyto novaehollandiae</i>	Masked Owl	V	-	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec

Several guidelines govern the way targeted threatened fauna surveys are performed. Noting these guidelines, the preliminary Candidate species list notionally indicates a need for at least two surveys with one being in August and the other in December – January. Some of the fauna species surveys may be undertaken as part of the targeted flora survey where timing and/or methods dictate (e.g., Striped Legless Lizard and Grey-headed Flying Fox).

In addition to the PCT filter, habitat constraints and geographical limitations may also influence the finalisation of the Project Candidate Species list. **Table 6-4** lists the preliminary Candidate species with habitat constraints or geographic limitations.

TABLE 6-4 PRELIMINARY CANDIDATE SPECIES HABITAT CONSTRAINTS AND GEOGRAPHIC LIMITATIONS

Scientific Name	Common Name	Habitat constraints	Geographic limitations
<i>Callocephalon fimbriatum</i>	Gang Gang Cockatoo	Hollow bearing trees; Eucalypt tree species with hollows at least 3 m above the ground and with hollow diameter of 7 cm or larger	-
<i>Calyptorhynchus lathami lathami</i>	Glossy-black Cockatoo	Hollow bearing trees; Living or dead tree with hollows greater than 15cm diameter and higher than 8m above ground	-
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	Cliffs; Within two kilometres of rocky areas containing caves, overhangs, escarpments, outcrops, or crevices, or within two kilometres of old mines or tunnels	-
<i>Haliaeetus leucogaster</i>	White-bellied Sea-eagle	Other; Living or dead mature trees within suitable vegetation within 1km of a rivers, lakes, large dams or creeks, wetlands and coastlines	-
<i>Hieraaetus morphnoides</i>	Little Eagle	Other; Nest trees - live (occasionally dead) large old trees within vegetation)	-
<i>Isoodon obesulus obesulus</i>	Southern Brown Bandicoot	Other; Requires dense ground cover in a variety of habitats	-
<i>Litoria aurea</i>	Green and Golden Bell Frog	Semi-permanent/ephemeral wet areas; Within 1km of wet areas	-
<i>Miniopterus orianae oceanensis</i>	Large Bent-wing Bat	Caves; Cave, tunnel, mine, culvert or other structure known or suspected to be used for breeding including species records with microhabitat code "IC - in cave;" observation type code "E nest-roost;" with numbers of individuals >500	-
<i>Myotis macropus</i>	Southern Myotis	Waterbodies; Waterbodies with permanent pools/stretches 3m or wider, including rivers, large creeks, billabongs, lagoons, estuaries, dams and other waterbodies, on or within 200m of the site	-
<i>Ninox connivens</i>	Barking Owl	Hollow bearing trees; a living or dead tree with a hollow >20 cm diameter that occurs >4 metres above the ground	-
<i>Ninox strenua</i>	Powerful Owl	Hollow bearing trees; a living or dead tree with a hollow >20 cm diameter that occurs >4 metres above the ground	-

Scientific Name	Common Name	Habitat constraints	Geographic limitations
<i>Petrogale penicillata</i>	Brush-tailed Rock Wallaby	Other; Land within 1 km of rocky escarpments, gorges, steep slopes, boulder piles, rock outcrops or cliff lines	--
<i>Phascolarctos cinereus</i>	Koala	Other; Presence of koala use trees - refer to Survey Comments field in TBDC	-
<i>Pteropus poliocephalus</i>	Grey-headed Flying Fox	Other; Breeding camps	-
<i>Pultenaea pedunculata</i>		--	Between Boro and Marulan
<i>Solanum celatum</i>		--	North of Oallen
<i>Tyto novaehollandiae</i>	Masked Owl	Hollow bearing trees; a living or dead tree with a hollow >20 cm diameter that occurs >4 metres above the ground	-

Finalisation of the Candidate species list and the associated seasonal survey schedule would occur after the production of a verified PCT map for the Project area and consideration of habitat constraints and geographic limitations. The refined Candidate species list will define the BDAR scope for detailed survey and assessment requirements.

6.2.1.5 THREATENED ECOLOGICAL COMMUNITIES

The NSW BioNet Vegetation Database identifies one of the SVTM predicted PCTs (i.e., 3376) to have an associated Threatened Ecological Community (TEC), this being White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands IBRA subregions (Box Gum Woodland) Critically Endangered Ecological Community (CEEC).

The occurrence and extent of TECs within the Project area will be determined following the completion of detailed site investigations and analysis against relevant listing advice for associated TECs. The presence of TECs may involve the consideration of condition states.

6.2.1.6 IMPORTANT HABITAT MAPS FOR THREATENED SPECIES

The habitat of several highly mobile threatened species is mapped as 'important areas'. These are:

- Swift Parrot (*Lathamus discolor*);
- Regent Honeyeater (*Anthochaera phrygia*);
- Plains Wanderer (*Pedionomus torquatus*); and
- Migratory shorebirds.

None of the mapped important areas for the above listed threatened entities occur within the Project area.

6.2.1.7 SERIOUS AND IRREVERSIBLE IMPACT ENTITIES

The potential for impacts on Serious and Irreversible Impacts (SAII) entities requires detailed consideration when locating and design the Project. The following preliminary Candidate species and TEC are listed as potential SAI entities.

- Regent Honeyeater (*Anthochaera phrygia*);
- Large-eared Pied Bat (*Chalinolobus dwyeri*);
- Swift Parrot (*Lathamus discolor*);
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*);
- Stuttering Frog (*Mixophyes balbus*);
- Brush-tailed Rock-wallaby (*Petrogale penicillata*);
- *Solanum armourense*; and
- Box Gum Woodland CEEC.

Impacts on most of these potential SAI species are likely to be avoided as the Project:

- Does not intersect with relevant Important Area Maps (i.e., Regent Honeyeater or Swift Parrot); or
- Can be designed to avoid habitat constraints such as caves (i.e., Large-eared Pied Bat, Large Bent-winged Bat) and rocky area (i.e. Brush-tailed Rock-wallaby).

Survey and design principles would be required to demonstrate that the remaining potential SAI entities would not be adversely affected by the Project.

6.2.2 ASSESSMENT APPROACH

The desktop assessment highlights several opportunities and constraints to consider.

The construction and operation of the Project has the potential to cause impacts to listed species and TECs listed under the BC Act and EPBC Act. At a high level, these will need to be considered as part of locating the Project prior to determining the disturbance footprint where the BAM is to be applied to assess impacts on biodiversity values.

6.2.2.1 MAPPING OF CATEGORY 1 - EXEMPT LANDS

The draft NVR Map is not in force other than for lands categorised as Category 2 'vulnerable' or 'sensitive'. These categories are in force and cannot be revised.

Otherwise, site data and analysis are required to verify the extent of Category 1 and Category 2 regulated lands. For these lands, a BAM accredited assessor has the option of identifying the extent of Category 1 – exempt lands when preparing a BDAR. The guidance provided for this is outlined in *Determining Native Land Categorisation for Application in the Biodiversity Offsets Scheme* (DPE, 2023).

It is anticipated that an LCA will be prepared, and form part of the early works associated with the preparation the Project BDAR. The mapping of Category 1 – Exempt Lands may influence Project location (i.e., early avoidance of biodiversity values) and the way in which the BDAR is to be prepared.

6.2.2.2 PREPARATION OF A BIODIVERSITY DEVELOPMENT ASSESSMENT REPORT

A BDAR is mandatory for SSD projects unless set aside by an approved BDAR Waiver. The BDAR comprises Stages 1 and 2 of the BAM. The following steps form part of the Stage 1 assessment of biodiversity values impacted by the Project:

- Map the extent of native vegetation within the direct impact area;
- Prepare a detailed assessment of MNES and submit an EPBC referral (if deemed required); and
- Perform targeted seasonal fauna and flora surveys in accordance with the BAM for Candidate species considered likely or potentially occurring within the Project area; and
- Identify relevant Prescribed Impacts.

The Stage 2 assessment includes the following:

- Direct and indirect impacts on native vegetation (e.g., loss of PCTs and associated habitat);
- Impacts to threatened species and ecological communities including predicted ecosystem and Candidate species; and
- Prescribed impacts (e.g., loss of connectivity, mortality and injury from vehicle strike).

The BDAR will also document the application of the Mitigation Hierarchy, namely:

- Avoidance of impacts;
- Minimisation of impacts; and
- Mitigation measures.

The residual impact would be documented in the form of ecosystem and species credits. Impacts on potential SAI entities will also be identified and documented for the consideration of the NSW Minister for Planning.

6.3 HERITAGE

6.3.1 ABORIGINAL CULTURAL HERITAGE

6.3.1.1 EXISTING ENVIRONMENT

Archaeological Background

The Project area is located within the Bungonia sub-bioregion of the South Eastern Highlands Bioregion. The Bungonia sub-bioregion is generally comprised of a distinct plateau with steep, deep margins on the Great Escarpment dropping into the Shoalhaven River. The soils are mostly yellow texture contrast soils, some with harsh clay subsoils. Shallow structured organic loams on limestone and basalt, deep siliceous sands and clayey sands on Tertiary sediments are present (NPWS 2003: 209).

Soil mapping of the region (DECC 2008) shows that the Project area is within the Hanworth soil landscape. The landscape of Hanworth includes hills on Bindook Porphyry (quartz porphyry) in the Canyonleigh Hills, Ginkin Hills, Moss Vale Tablelands, Wollondilly Gorge and Wombeyan Hills. The altitude of the landscape ranges from 182 – 1225 m, with local relief at 30 – 120 m. The landscape includes extensively cleared woodland, with historical grazing occurring across most of the area. Soils are brown and yellow Natric Kurosols (Soloths and Padzolic Soils), Rudosols (Lithosols) and yellow and brown Kurosols (Soloths). The soils are of a highly erodible nature, with gully erosion in many drainage lines and sheet erosion on many cleared slopes.

An Aboriginal Heritage Study of the Goulburn Mulwaree LGA (neighbouring the Upper Lachlan Shire LGA) was prepared by Australian Museum Business Services (AMBS 2012). This study built upon earlier investigations by Koettig and Lance (1986) and Fuller (1989) based on the City of Goulburn area (approximately 40 km south-west of the Project area). Koettig and Lance investigated the distribution of sites across the landscape, various landforms, bedrock geology and proximity to water. They found artefact scatters were the most common site type in the region, found across all environmental contexts, mostly on lower slopes with good drainage. Most sites were within 100 m of water, and sites close to watercourse junctions were larger and denser sites. They found that burial sites were rare, potentially due to marker features not having been preserved (e.g., carved trees, earth mounds). Culturally Modified Trees (CMTs) are also rare in the region, with fires and forest clearance leaving relatively few mature native trees. The authors also noted Bora grounds as rare, though they admit predictive modelling for this site type is not accurate. Grinding grooves were found mostly near creek lines with suitable sandstone outcrops (Koettig and Lance 1986). Fuller tested Koettig and Lance's model of site distribution through surveying, finding sites across all environmental zones – even those the former assessed as having low potential (1989).

AMBS (2012) found that the site location predictions found in Koettig and Lance and Fuller's studies of the Goulburn Mulwaree LGA were generally consistent across the LGA. They provided a discussion of site types likely to occur within the LGA. Generally, sites occurred in proximity to watercourses, in elevated areas, and in areas with suitable geology or mature vegetation (AMBS 2012: 24-28).

6.3.1.2 PREVIOUS ARCHAEOLOGICAL ASSESSMENTS

Several archaeological surveys and reports have been conducted within Bannaby and the broader region for renewable energy projects and other land management programs. These are briefly discussed below.

Navin Officer Heritage Consultants (2023) undertook an Aboriginal Cultural Heritage Assessment Report (ACHAR) for a project area for the Transgrid HumeLink, a proposed 360 km 500 kV transmission line from Wagga Wagga to Bannaby and Maragle. The eastern most end of the transmission line is adjacent to the current Project area. NHOC undertook extensive archaeological surveying for the project, which due to access issues made up approximately 69.5% of the project footprint.

Sixty-three new sites and six Potential Archaeological Deposits (PADs) were identified during survey, while archaeological test excavation undertaken at targeted locations recovered 203 artefacts. A key component of the report methodology was the development of sensitivity modelling across the project footprint, which considered previously recorded Aboriginal Heritage Information Management Systems (AHIMS) sites, topographic contours and slopes, a review of previous archaeological investigations and the hydrological landscape of the area. Two sections of NHOC's project footprint that were assessed and provided with archaeological sensitivity modelling, located 1 km and 5 km west of the current Project area of this report, included areas of low, moderate, and high archaeological sensitivity.

Navin Officer Heritage Consultants (2007) undertook an archaeological assessment for the development of the Bannaby 500/330 kV substation directly south of the current Project area (approximately 700 m). Their survey identified 11 sites including seven artefact scatters, one with an associated PAD and four isolated finds. Recommendations included that if sites were to be impacted by the project, then surface recovery should take place, as well as subsurface archaeological testing of the PAD area to determine its extent and nature. As the disturbance footprint was determined to impact nine sites and the PAD in total, an Aboriginal Heritage Impact Permit (AHIP) was acquired to salvage and excavate.

Surface collection and excavation at the Bannaby 500/330 kV substation led to the recovery of 449 stone artefacts (NOHC, 2008). The assemblage included a wide range of artefact types representing various aspects of manufacturing and usage. Most artefacts included flakes, with flaked pieces and broken retouched flakes the next most numerous. Cores and bipolar artefacts were included in the assemblage, as well as a small grindstone top-stone (muller). Re-touched artefacts made up an unusually large percentage of the assemblage (8.3%), most of which were scrapers. The authors of the report assessed the site as of medium local significance.

Bowen Heritage Management (2016) surveyed a site of a rural subdivision on Canyonleigh Road, approximately 20 km south-east of the current Project area. They located several small surface sites located within 100 m of watercourses. Their survey results across a large area supported the predictive site location model developed by Koettig and Lance and Fuller for the broader region.

Navin Officer Heritage Consultants (2008) undertook a cultural heritage assessment relating to a gas pipeline servicing turbine power generating facilities approximately 20 km south of the Project area. NOHC undertook field surveys as part of their report and found three newly recorded sites – one artefact scatter with associated PAD and two isolated finds – within their study area.

Dibden (2004) surveyed Greenwich Park, a subdivision of Towrang, approximately 25 km south-west of the current Project area. A total of 48 sites were recorded, with the most common material type recovered being silcrete. The sites were located on spur crests, slopes or drainage depressions.

Umwelt Environmental Consultants (2005) surveyed the proposed Lynwood quarry site at Marulan, approximately 30 km south of the Project area, identifying 52 new sites. These included 29 artefact scatters, 12 isolated finds, seven CMTs and two stone arrangements. The artefact scatters and isolated finds were located on exposed creek lines, slopes and crests, with 50% located within 30 m of a watercourse.

Officer and Navin (1996) surveyed an area approximately 22 ha adjacent to the Hume Highway south of Marulan, approximately 30 km south of the Project area. They found three sites and three isolated finds, with silcrete, quartz and chert artefacts. The sites were in an undulating low gradient landscape. Navin Officer later surveyed a similar landscape, at a site on Winfarthing Road, Marulan (Dearling 1997). Their survey discovered one high density open artefact scatter, two low density scatters, and three isolated finds.

A series of archaeological investigations were undertaken as part of the Mount Piper – Marulan 500 kV Transmission Line. The results were compiled in a report by Brayshaw and Dallas (1993), surveying for which uncovered 26 new sites. Landforms with the highest level of potential for sites included sandstone scarps and prominent ridgelines. Creek and river flats, adjacent high ridgetops and hillslopes were considered as having high potential, with gently undulating land, containing creeks and adjacent ridgelines between Bannaby and Marulan identified as moderately sensitive. Brayshaw and Dallas undertook test excavations at seven sites, recovering nine artefacts located between 5-20 cm deep in gravelly soil.

6.3.1.3 AHIMS SEARCH RESULTS

Heritage NSW provides the AHIMS database, which holds information concerning previously recorded Aboriginal sites in NSW. An extensive search of the AHIMS database using a shapefile of the Project area with a 1000 m buffer was conducted on 17 October 2024, using the details provided in **Table 6-5**.

TABLE 6-5 AHIMS DATABASE SEARCH DETAILS

Item	Detail
Client Service ID	941739
Datum	AGD Zone 56
Buffer	1000 m
Number Sites	4

A total of four sites were identified during the search, with the sites located directly to the south of the Project area, associated with Bannaby Substation. These areas are shown in **Figure 6-3**. No registered sites are located within the boundary of the Project area. Of the four sites listed on the AHIMS register, two are artefact scatters and two are isolated finds. Cultural heritage sensitivity mapping and the results from previous archaeological reports from the region demonstrate that areas of high archaeological sensitivity exist within the Project area.

The results of the full AHIMS search are summarised in **Table 6-6**.

TABLE 6-6 AHIMS REGISTERED SITE TYPES

Site Type	Total Number
Artefact	4
Total	4

FIGURE 6-3 AHIMS RECORDS

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6.3.1.4 ASSESSMENT APPROACH

Based on the results of soil mapping, AHIMS mapping, and the results of previous reports, this preliminary desktop assessment considers it likely that areas within the Project area contain evidence of past Aboriginal land use. Predictive modelling prepared at this stage of the process can assist in determining sensitive landscapes; however, it is acknowledged that more detailed investigation and assessment will be required to inform the next phase of project planning and design. In consideration of these factors, the following recommendations are made:

- Comprehensive investigation, to include pedestrian field survey, consultation with Aboriginal stakeholders, sensitivity mapping, and archaeological test excavation (as required) should be undertaken during the development application stage;
- The investigations are to be undertaken in accordance with all NSW legislation and relevant guidelines including the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011), the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DECCW, 2010), and *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW, 2010);
- Results of the investigations are to be detailed in an ACHAR, in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW, 2010); and
- Upon completion of the ACHAR, a Cultural Heritage Management Plan (CHMP) should be prepared to ensure appropriate management of any identified cultural heritage throughout the construction process.

6.3.2 HISTORIC HERITAGE

6.3.2.1 EXISTING ENVIRONMENT

The Goulburn area was visited by Europeans as early as the late 1790s by explorers. Official exploration resumed in 1814, and Governor Macquarie visited the area in 1820, declaring it named the 'Goulburn Plains'. Numerous large properties were established in the area by the early 1920s, with farms producing wheat, sheep and cattle for the Sydney market. The township of Marulan was officially gazetted on 11 March 1835. The great southern railway reached Marulan on 6 August 1868 (NOHC 2008: 15).

Since its initial settlement, Bannaby has been a farming and grazing district synonymous with the Hillas family. John Hillas, who was overseer of James Macarthur's estate, operated the run of *Hillasmount* (approximately 5 km west of the Project Area) from 1826 (NOHC 2023: 73). Hillasmount was an expansive rural homestead complex, with its Bunnaby homestead constructed by John and George Hillas over a 12-year period from 1828 to 1840. The homestead was occupied by Martha and Matthew Hillas in the 1870s and members of the Hillas family were buried in Saint Matthew's Anglican Cemetery in Bannaby from 1893 (Lambert 2008: 189-190).

Historical aerial photographs indicate the Project area was cleared land with scattered trees during the 1960s, with existing roads in the area already in place. The Project area remained undeveloped into the early 1990s when the transmission lines and towers directly to the south were constructed. The road passing through the Project area, as well as the homestead, are more recent developments since the mid-1990s.

6.3.2.2 HERITAGE REGISTER SEARCHES

Statutory Listings

Commonwealth Heritage List

The Commonwealth Heritage List includes natural, Indigenous and historical heritage places owned or controlled by the Australian Government. Items on the list have satisfied the minister as having one or more Commonwealth Heritage values. There are no Commonwealth Heritage listed places within or in proximity to the Project area.

National Heritage List

The Australian National Heritage List contains natural, historic, and Indigenous places deemed to be of outstanding heritage significance to Australia. Before a site is placed on the list, a nominated place is assessed against nine criteria by the Australia Heritage Council. There are no National Heritage listed places within or in proximity to the Project area.

State Heritage Register

A search of the NSW State Heritage Register (SHR) was conducted on 16 October 2024. The search revealed that there are no SHR-listed items within or near the Project area.

Upper Lachlan Local Environmental Plan 2010

A search of the ULLEP 2010 was conducted on 16 October. The search identified no local heritage listed sites within or in proximity to the Project area.

Section 170 Heritage Registers

Section 170 of the *Heritage Act 1977* requires all NSW state agencies to identify, conserve and manage the heritage assets owned, managed and occupied by that agency. To facilitate this, Section 170 heritage registers were established for all NSW government agencies. These registers are held and maintained by each state agency and updated as assets are acquired, altered, or decommissioned.

A search of the relevant Section 170 registers was undertaken on 16 October 2024.

No Section 170 heritage places are located within or near the Project area.

Non-Statutory Considerations

Register of the National Estate

The Register of the National Estate (RNE) is a non-statutory archive of natural, historic and Indigenous places and incorporates over 13,000 places. Originally compiled between 1976 and 2003 by the Australian Heritage Commission (AHC), the RNE was frozen on 19 February 2007, which means that no new places can be added, or removed. Since February 2012 the RNE has been maintained as a non-statutory listing or archive.

A search of the Australian Heritage Database was undertaken on 16 October 2024. This search identified no RNE listed places within or near the Project area.

National Trust of Australia (NSW) Heritage Register

The National Trust of Australia maintains a register of landscapes, townscape, buildings, industrial sites, cemeteries and other heritage places, which the Trust determines to have cultural significance. This register is non-statutory but provides an indication of places considered significant by the wider community.

A search of the National Trust Heritage Register conducted on 17 October 2024 indicated there are no National Trust listed properties within or near the Project area.

It is noted that heritage register searches provide a limited understanding of potential historical archaeological resources within the Project area, rather providing information about standing structures of importance to the community.

6.3.2.3 ASSESSMENT APPROACH

Preliminary assessment has shown there are no historic heritage items within or near the Project area listed on National, State or Local statutory heritage registers.

While no registered historic heritage items are located within the Project area, further assessment would be required to better establish the historical archaeological and heritage potential of the Project area.

Based on this information, it is recommended that a Historical Heritage Assessment (HHA) be prepared as part of the EIS. Preparation of the HHA report would involve detailed historical research, including analysis of historical aerial imagery, physical inspection of the relevant areas of the Project area, and consultation with the Local and District Historical Society and any other relevant stakeholders

6.4 HAZARDS

6.4.1 BUSHFIRE

6.4.1.1 EXISTING ENVIRONMENT

Bushfire presents a threat to human life and assets and can adversely impact ecological values. Bushfire risk can be considered in terms of environmental factors that increase the risk of fire (fuel quantity and type, topography and weather patterns), as well as specific activities (such as hot works and construction activities) or infrastructure components that exacerbate combustion or ignition risks (such as transmission lines and other electrical components).

A review of the National Parks and Wildlife Service (NPWS) Fire History dataset (available via the seed mapping portal) does not identify any history of bushfire within the Project area. However, a review of the NSW Rural Fire Service (RFS) Bushfire Prone Land (BFPL) mapping confirms that portion of the Project area contains vegetation vulnerable to bushfire risk. This is shown in **Figure 6-4**.

The Project area has been mapped as Vegetation Category 1 and Vegetation Category 2. The cleared grasslands are also likely to be recognised as Vegetation Category 3.

- **Vegetation Category 1** is the highest risk for bush fire. It is represented as red on the bush fire prone land map and has the highest combustibility and likelihood of forming fully developed fires including heavy ember production. Vegetation Category 1 consists of forest, woodlands, heaths (tall and short), forested wetlands and timber plantations. Land mapped as Category 1 typically has a 100 m buffer applied to the vegetation type;

- **Vegetation Category 2** is considered to have a lower bush fire risk than Category 1 and Category 3, but higher than the excluded areas. This vegetation category has lower combustibility and/or limited potential fire size due to the area shape and size. It mainly consists of: Rainforests, discrete urban reserves, suitable access and adequate infrastructure to support suppression for firefighters, flat topography and lower risk vegetation parcels; and
 - **Vegetation Category 3** is considered to be medium bush fire risk vegetation. It is higher in bush fire risk than Category 2 (and the excluded areas) but lower than Category 1. It is represented as dark orange on a BFPL map. This category consists of grasslands, freshwater wetlands, semi-arid woodlands, alpine complex and arid shrublands.
- This BFPL mapping triggers the requirement to apply the aims and objectives of the NSW RFS Guidelines – Planning for Bushfire Protection 2019 (NSW RFS, 2019).

6.4.1.2 ASSESSMENT APPROACH

The EIS will include a Bushfire Risk Assessment (BRA) and will aim to identify potential hazards and risks associated with bushfires/use of potential bushfire prone land. The BRA will aim to demonstrate that the proposed BESS can be designed, constructed and operated to minimise ignition risks and provide for asset protection consistent with the *NSW Rural Fire Service Guidelines – Planning for Bushfire Protection 2019* (NSW RFS, 2019).

The BRA and mitigation strategies will be guided by the following factors that contribute to bushfire risk:

- Fuels, weather, topography, predicted fire behaviour and local bushfire history;
- Suppression resources, access (roads, tracks) and water supply; and
- Values and assets.

Mitigation will be a combination of complementary strategies, all of which are required to provide the best possible protection outcome for the BESS, land managers and the community.

6.4.2 PRELIMINARY HAZARD ANALYSIS

A Preliminary Hazard Assessment (PHA) is required for potentially hazardous or offensive development under SEPP Resilience and Hazards 2021. Clause 3.2 of the SEPP Resilience and Hazards defines a ‘potentially hazardous industry’ is as:

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

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

(b) to the biophysical environment”

Appendix 3 of the Applying SEPP 33 Guidelines (DoP, 2011) lists the industries that may fall within the Resilience and Hazards SEPP (former SEPP 33), which do not include energy storage facilities. However, the BESS facility proposed for the Project is likely to utilise lithium-ion batteries, which are listed as Class 9 - Miscellaneous dangerous goods. While Class 9 materials are excluded from the SEPP 33 screening test, the hazards related to these materials should be considered in accordance with the Applying SEPP 33 Guidelines.

Batteries can be a serious safety risk for occupants and installers if incorrectly installed or operated, potentially leading to electric shock, fire, flash burns, explosion or exposure to hazardous chemicals and released gases. The Battery installation guidelines for accredited installers guidelines, prepared by the Clean Energy Council (2017) state that there are numerous hazards associated with battery systems and storage in relation to electrical, energy, fire, chemical, explosive gas, and mechanical hazards. Where a hazard is identified, risk reduction should be applied to eliminate or reduce these risks, in order to protect persons, property and livestock from fire, electric shock, or physical injury (CEC, 2017).

A PHA will be undertaken as a component of the EIS, which will assess the potential hazards and risks associated with the Project in accordance with the requirements of the Resilience and Hazards SEPP. Specifically, it will assess the potential hazards associated with the inclusion of a BESS and evaluate the likely risks to public safety, by focusing on the transport, handling and use of hazardous materials. The assessment will also determine whether the Project should be considered a hazardous or potentially hazardous industry under the Resilience and Hazards SEPP.

6.5 NOISE AND VIBRATION

6.5.1 EXISTING ENVIRONMENT

The Project area is situated in a rural setting, where the existing land uses are predominantly for agricultural purposes. The existing noise environment at the nearest dwellings is determined to be that of a typical rural area, dominated by natural noise sources such as foliage noise, birdsong, distant road traffic noise and occasional noise associated with agricultural production. The Transgrid Bannaby 500/330 kV Substation is also located 1.5 km south of the Project area.

The two closest dwellings to the Project are located to the west located on lot 402 DP 1265813 and to the east on Lot 38 DP75000. There are an additional nine dwellings within 2 km of the Project. These eleven dwellings are located within the area of influence (for the purpose of potential noise impacts, 2 km from the Project). This is shown in **Figure 6-5**.

6.5.2 ASSESSMENT APPROACH

In the EIS stage of the project, construction and operational noise impacts will be assessed at the associated and non-associated dwellings within the area of influence as part of the Noise and Vibration Impact Assessment (NVIA), and subsequent detailed design of the Project.

During the operational phase of the Project, potential noise impacts are likely to be associated with the electrical infrastructure, in particular, cooling systems associated with the battery units and transformers.

During the construction phase of the Project, dwellings may be affected by noise associated with site preparation, delivery, installation and testing and increased construction traffic on the local road network.

The Project is unlikely to result in vibration impacts during its construction or operational phases.

The NVIA will be developed in accordance with the following standards, policies and guidelines, where applicable:

- NSW Environment Protection Authority (EPA), *Noise Policy for Industry (NPI) 2017* (NSW EPA, 2017);
- NSW Department of Environment and Climate Change (DECC), *Interim Construction Noise Guideline 2009* (ICNG) (NSW DECC, 2009);
- Australian Standards (AS) 1055:2018 *Acoustics – Description and measurement of environmental noise* (Standards Australia, 2018);
- NSW Department of Environment and Conservation (DEC) *Assessing Vibration: A Technical Guideline 2006* (NSW DEC, 2006);
- NSW Department of Environment, Climate Change and Water (DECCW), *Road Noise Policy* (NSW DECCW, 2011);
- Transport for NSW (TfNSW), *Road Noise Criteria Guideline (RNCG) 2022* (TfNSW RNCG, 2022);
- Transport for NSW (TfNSW), *Noise Mitigation Guideline (NMG) 2022* (TfNSW NMG, 2022); and
- NSW Environment Protection Authority (EPA), *Noise Guide for Local Government (NGLG) 2013* (NSW EPA NGLG, 2013).

The NVIA will generally include:

- Establishment of background noise levels as well as operational and construction assessment criteria at dwellings;
- Assessment of operational noise impacts;
- Assessment of construction noise impacts;
- Assessment of road traffic noise impacts (with a focus on construction traffic);
- Assessment of cumulative operational noise impacts associated with surrounding industry (as relevant); and
- Provision of recommendations for noise mitigation, management measures, safeguards and/or provisions for monitoring.

6.6 SOCIAL AND ECONOMIC

This section provides the first phase of the Social Impact Assessment (SIA) undertaken for the Project. The first phase of SIA aligns with the DPE's (currently DPHI) Social Impact Assessment Guideline for SSD Projects (SIA Guideline) (DPE, 2023a) and Technical Supplement: Social Impact Assessment Guideline for State Significant Projects (SIA Technical Supplement) (DPE, 2023b).

The first phase of SIA involves scoping and preliminary assessment and sets further parameters for the second phase of SIA (the assessment report to be appended to the EIS) (DPE, 2023b). Accordingly, the first phase of SIA includes:

- Defining the Project Social Locality;
- Social baseline describing the profile of the community in the Social Locality;
- Preliminary assessment of potential social impacts to inform Project refinement; and
- Outlining the approach that will be undertaken to complete the second phase of SIA.

6.6.1 EXISTING ENVIRONMENT

6.6.1.1 SOCIAL LOCALITY

One of the first steps in a SIA is the scoping process, which helps define the social area of influence, or 'Social Locality'. Determining the Social Locality for the Project involves understanding the nature of the Project, the characteristics of the surrounding communities, and how potential positive and/or negative impacts will be experienced by different community members/groups.

Accordingly, the following is to be considered when defining the Social Locality:

- The location and layout of the proposed BESS as well as the associated components within the overall Project area relative to sensitive land uses, being residential dwellings and structures. This includes proximity to environmental values and topographical features; and
- Construction and operation phase activities, such as:
 - Land clearing and ongoing access for maintenance;
 - Workforce requirements, including skills required and accommodation arrangements;
 - Goods and services required by the Project; and
 - Haulage routes to and from the Project area.

When considering these aspects, it was determined that the Project Social Locality should include the Project area; the area surrounding the Project area wherein noise, visual and other amenity impacts may occur; the haulage routes where similar amenity impacts may be experienced; and the communities in larger nearby centres that may provide accommodation, workers or goods and services to the Project.

The Project area is approximately 204 km (by road) southwest from Sydney NSW and 70 km (by road) northeast of Goulburn. Two local roads, being Brayton Road and Hanworth Road, connect the Project to the Hume Highway (OSOM approved) via Marulan Urban Centre and Locality (UCL). The classifications of the roads that service the Project area are shown in **Table 6-7**.

TABLE 6-7 ROAD CLASSIFICATIONS

Road	Authority	Oversize and Over Mass Vehicles Approved Road
Hume Highway	State	Yes
Brayton Road	Local	No
Hanworth Road	Local	No

6.6.1.2 APPROACH TO DETERMINING THE SOCIAL LOCALITY

Based on the above, the Project Social Locality, as defined for the purposes of the SIA, was determined to comprise of the following three components:

- The **Project area and immediate surrounding areas**, located within the ABS Statistical Area Level 1 (SA1) Nos. 10105154019 (containing the Project) and SA1 11402128908 (East of the Project area). SA1 data has been used to identify key baseline indicators for the Social Locality, where applicable;

- The **possible transportation and haulage routes** to the Project area. Primary access to the Project area during construction and operation is proposed via the existing road network. For the purpose of this assessment, the Social Locality includes the two local roads connecting the Project (Brayton Road and Hanworth Road) to Marulan UCL and the Hume Highway (OSOM approved), which may be refined during the second phase SIA based on the Traffic and Transport Impact Assessment;
- The **surrounding towns and regional centres** of Taralga, Marulan, Crookwell and Goulburn UCLs provide baseline data for towns which may provide accommodation, labour, goods and services to support the construction phase of the Project. Refer to **Table 6-8** for their approximate distances to the Project area; and
- The **broader and comparative social context** for the Project includes LGA level data for the Upper Lachlan Shire and Goulburn Mulwaree LGAs. State level data for NSW has been used to provide an understanding of its location.

This Social Locality will enable the following types of comparative statistical analysis in the second phase SIA:

- **Rural-urban analysis:** UCLs establish baseline data for urban areas whilst SA1s surrounding UCLs represent low-density rural areas, which allows for a rural-urban analysis;
- **Hierarchical spatial analysis:** LGA and State data is included to allow for a hierarchical spatial analysis comparing local areas (SA1s and UCLs) to regional and state baselines; and
- **Time-series analysis:** Including ABS data from the two most recent census years (currently 2016 and 2021) will allow for a time-series analysis to identify positive and negative socio-economic trends.

The Project social locality is shown in **Figure 6-6**.

TABLE 6-8 APPROXIMATE DISTANCES TO THE PROJECT AREA

Town / Regional Centre (UCLs and SUA)	Travel Distance (km)	Travel Time (min)
Taralga	26	26
Marulan	47	57
Crookwell	63	51
Goulburn	70	59

6.6.2 COMMUNITY PROFILE

The community profile presented in this section will inform the social baseline in the second phase SIA (part of the EIS) and is primarily based on ABS 2021 Census data.

Table 6-9 outlines the ABS datasets used to provide key demographic data across the Project Social Locality. For the purposes of the first phase SIA only 2021 ABS datasets (i.e., latest available) were considered; however, in the second phase SIA, relevant 2016 ABS data will also be used for the purposes of trend analysis.

TABLE 6-9 SUMMARY OF RELEVANT ABS DATASETS

Social Locality Categories	Location	2021 ABS Data Reference (Census)
Immediate surroundings	SA1 (within the Project area)	SA1 10105154019
	SA1 (adjacent to Project area)	SA1 11402128908
Surrounding towns and regional centres	Taralga UCL	UCL 122127
	Marulan (L) UCL	UCL 121072
	Crookwell UCL	UCL 115047
	Goulburn UCL	UCL 112009
Broader comparative context	Upper Lachlan Shire LGA	LGA 17640
	Goulburn Mulwaree LGA	LGA 13310
	NSW	Code 1 (STE)

In addition to the above listed ABS datasets, the second phase SIA social baseline will be informed by a desktop review of sources including public health advisory bodies, principally NSW Health and local hospitals (i.e., regarding physical and mental health issues prevalent in the local community), and educational institutions, principally the NSW Department of Education, and local schools.

Information relating to the economic profile of the Project will be provided by ABS 2021 Census data, while information on developmental priorities and challenges in the region will be provided by local and State government planning documents, such as Upper Lachlan Shire Local Strategic Planning Statement 2020.

6.6.2.1 DEMOGRAPHIC OVERVIEW

Table 6-10 draws on the ABS datasets listed in **Table 6-9** to provide a demographic overview of the Project's Social Locality. The Project area is located within ABS SA1 10105154019, which has an aging population, high rates of homeownership (84.5%) and a high portion of unoccupied dwellings (44.8%). The highest unemployment rates in the Social Locality are in Goulburn (4.6%) and Crookwell UCLs (4.8%), both of which are lower than that of NSW (4.9%).

6.6.2.2 SOCIO-ECONOMIC CONDITIONS

Table 6-10 also includes the ABS' Socio-Economic Indexes for Areas (SEIFA) ¹ based on 2021 census to provide an Index of Relative Socioeconomic Advantage and Disadvantage (IRSAD). The ABS broadly defines socio-economic advantage and disadvantage in the SEIFA as, "...people's access to material and social resources" at an area rather than individual level. A lower SEIFA score (<50) indicates that an area is relatively disadvantaged compared to an area with a higher score (>50).

¹ SEIFA is a product developed by the ABS that ranks areas in Australia according to relative socio-economic advantage and disadvantage. The indexes are based on information from the five-yearly Census, available at: <https://www.abs.gov.au/statistics/people/people-and-communities/socio-economic-indexes-areas-seifa-australia/latest-release>. SEIFA combines Census data such as income, education, employment, occupation, housing and family structure to summarise the socio-economic characteristics of an area. Each area receives a SEIFA score, referred to as the socio-economic advantage and disadvantage score, indicating how relatively advantaged or disadvantaged that area is compared with other areas.

The SEIFA scores in **Table 6-10** are a percentile score, which divides a distribution into 100 equal groups. The lowest scoring 1% of areas are given a percentile number of 1 and the highest 1% of areas are given a percentile number of 100. A score of 50 suggests an area is neither advantaged nor disadvantaged. This report uses the percentile ranking within State or Territory.

SEIFA Analysis

Table 6-10 indicates Goulburn Mulwaree LGA has a low SEIFA index of 37, compared to the Upper Lachlan Shire LGA, which has an index of 72. This demonstrates that on average the Upper Lachlan Shire LGA is relatively advantaged whilst Goulburn Mulwaree LGA is relatively disadvantaged.

Table 6-10 also denotes that the SA1 (10105154019) with the Project area has a percentile score of 52. The SA1 (11402128908) north of the Project area has a higher percentile score of 57 demonstrating that both SA1s have a similar advantage percentile.

TABLE 6-10 KEY INDICATORS FOR ALL ABS DATASETS (2021) ACROSS THE PROJECT SOCIAL LOCALITY

Population	Median Age	Indigenous Pop. (%)	Pop. Over 65 Years of Age (%)	Median Weekly Household Income (\$)	Unemployment (%)	SEIFA (Percentile in NSW)	Dwelling Count (Occupied / Unoccupied (%))	Dwelling Tenure (Owned Outright + Mortgaged / Rented, %)	Household Composition (Families / Singles / Groups, %)
SA1 10105154019 (within Project Area)									
315	53 ↑	7.0 ↑	24.9 ↑	1,687 ↓	2.8 ↓	52 ↑	53.6 / 44.8	84.5 / 15.5	71.6 / 21.6 / 6.9
SA1 11402128908 (East of the Project Area)									
213	46 ↑	4.7 ↑	14.1 ↓	1,937 ↑	0.0 ↓	57 ↑	72.2 / 27.8	95.7 / 5.7	80.0 / 13.3 / 6.7
Taralga UCL									
292	54 ↑	1.7 ↓	34.2 ↑	1,100 ↓	2.4 ↓	*	75.5 / 25.8	73.1 / 21.1	58.0 / 39.5 / 2.5
Marulan (L) UCL									
819	33 ↓	5.7 ↑	16.4 ↓	1,468 ↓	3.9 ↓	*	89.6 / 9.1	72.8 / 23.2	70.4 / 25.7 / 3.8
Crookwell UCL									
2,098	51 ↑	3.8 ↑	25.4 ↑	1,120 ↓	4.8 ↓	*	88.6 / 12.1	76.9 / 18.4	63.9 / 34.7 / 1.3
Goulburn UCL									
23,963	40 ↑	5.4 ↑	20.9 ↑	1,405 ↓	4.6 ↓	*	91.5 / 8.6	62.9 / 43.0	64.1 / 33.1 / 2.8

Population	Median Age	Indigenous Pop. (%)	Pop. Over 65 Years of Age (%)	Median Weekly Household Income (\$)	Unemployment (%)	SEIFA (Percentile in NSW)	Dwelling Count (Occupied / Unoccupied (%))	Dwelling Tenure (Owned Outright + Mortgaged / Rented, %)	Household Composition (Families / Singles / Groups, %)
Goulburn Mulwaree LGA									
32,053	41 ↑	5.1 ↑	20.9 ↑	1,466 ↓	4.3 ↓	37 ↓	87.0 / 13.0	67.8 / 28.9	66.9 / 30.4 / 2.6
Upper Lachlan Shire LGA									
8,514	49 ↑	3.1 ↓	25.1 ↑	1,465 ↓	3.0 ↓	72 ↑	76.9 / 23.3	81.2 / 12.6	71.3 / 27.6 / 1.2
NSW Code 1 (STE)									
8,072,163	39	3.4	17.7	1,829	4.9	*	2,900,468 / 299,524 (9.4%)	64 / 32.6	71.1 / 25.0 / 3.8

↑↓ Demographic indicator suggests negative social impact, socio-economic disadvantage and/or sensitivity/vulnerability to the Project.

↑↓ Demographic indicator suggests positive social impact, socio-economic advantage and/or resilience to the Project.

↑ Above state average.

↓ Below state average.

*Note: SEIFA is not provided for ABS UCL Statistical Areas.

6.6.2.3 ECONOMIC PROFILE

Table 6-11 provides a categorization of the top eight industries per statistical area based on five categories:

- Agriculture and Primary Production²;
- Public and Social Services³;
- Commercial and Retail Services⁴;
- Industrial and Manufacturing Services⁵; and
- Construction and Infrastructure⁶.

Coding ABS top industry data into these five categories enables a comparative analysis of industry data and clearly highlights trends through applying conditional formatting.

Table 6-11 shows there is a diverse range of industries across the Social Locality with minimal Agriculture and Primary Production within the Project's immediate surroundings (represented by 11402128908 and 10105154019). The largest industry category in the Social Locality is Public and Social Services and the smallest industry category is Industrial and Manufacturing.

TABLE 6-11 CATEGORISATION OF TOP INDUSTRIES IN DIRECTLY IMPACTED AREAS

Location ⁷	Public and Social Services (%)	Agriculture and Primary Production (%)	Commercial and Retail Services (%)	Industrial and Manufacturing (%)	Construction and Infrastructure (%)
SA1 1140 2128908	4.2	3.4	*	2.5	10
SA1 1010 5154019	14.7	*	6.6	5.1	5.1
Taralga UCL	10.1	11.7	*	*	5.0
Marulan UCL	*	*	7.1	2.6	8.6
Crookwell UCL	7.4	3.9	3.4	*	7.9
Goulburn UCL	11.4	*	6.4	*	*

* Indicates that there were no relevant industries present in the top 8 industries for that statistical area and does not equate to 0%

² Agriculture and Primary Production combines the following ABS categories: 'Beef Cattle Farming (Specialised)', 'Sheep Farming (Specialised)', 'Sheep-Beef Cattle Farming' and 'Grape Growing'.

³ Public and Social Services combines the following ABS categories: 'Aged Care Residential Services', 'Local Government Administration', 'Hospitals (except Psychiatric Hospitals)', 'Other Social Assistance Services', and 'Primary Education'.

⁴ Commercial and Retail Services combines the following ABS categories: 'Supermarket and Grocery Stores' and 'Takeaway Food Services'.

⁵ Industrial and Manufacturing combines the following ABS category: 'Ready-Mixed Concrete Manufacturing', 'Other Electrical Equipment Manufacturing' and 'Building and Other Industrial Cleaning Services'.

⁶ Construction and Infrastructure combines the following ABS categories: 'Other Heavy and Civil Engineering Construction', 'Road Freight Transport', 'Other Construction Material Mining' and 'Site Preparation Services'.

⁷ The six (6) ABS statistical areas were chosen to represent the areas with direct social impacts.

Table 6-12 suggests that most local construction workers, if available, may be sourced from the Goulburn Mulwaree LGA, with the potential for some relevant skills and occupations to be sourced from the Upper Lachlan Shire LGA or elsewhere. There is a total of 6,317 people with relevant occupations in the Social Locality. Nationally, Technicians and Trades Workers, Labourers and Machinery Operators and Drivers have the largest proportion of independent contractors (17%, 11% and 10%, respectively), which is an indicator for existing employee mobility within the workforce (ABS, 2023c).

TABLE 6-12 CATEGORISATION OF THE RELEVANT TOP OCCUPATIONS IN SOCIAL LOCALITY

Locations ⁸	Technicians and Trades Workers (no.)	Machinery Operators and Drivers (no.)	Labourers (no.)	Total
Goulburn Mulwaree LGA	2,129	1,231	1,751	5,111
Upper Lachlan Shire LGA	511	237	419	1,167
SA1 11402128908	16	13	10	39
Total	2,656	1,481	2,180	6,317

6.6.2.4 SOCIAL INFRASTRUCTURE OVERVIEW

Social infrastructure is a term that covers a wide range of services and facilities that meet community needs for education, health, social support, recreation, cultural expression, social interaction and community development. This includes schools and other educational institutions, medical services, emergency services, recreational facilities, community organisations, as well as some commercial services like childcare facilities and recreational sports.

Table 6-13 shows that Goulburn and Crookwell UCL are likely to provide most goods and services to support the Construction and Operation phases of the Project. They have a combined total of 59 social infrastructure services, which is 77.6% of the total number identified across the Social Locality. Taralga and Marulan UCLs will likely provide additional support during the Construction and Operation phases of the Project due to their proximity to the Project, but they lack many of the services required to support the influx of Construction workers.

⁸ The three ABS areas listed capture the total area of the Social Locality and exclude ABS areas contained within larger ABS Statistical Areas.

TABLE 6-13 SUMMARY OF SOCIAL INFRASTRUCTURE

Services and Organisations	Taralga	Marulan	Crookwell	Goulburn	Total
Health					
Hospitals	0	0	1	1	2
Medical Centres / Dental	1	1	2	5	9
Family and Education					
Childcare	0	1	1	3	5
Primary schools	0	1	1	4	6
Secondary schools	0	0	1	3	4
Tertiary education facilities	0	0	0	1	1
Recreation and Community					
Swimming Pools	0	0	1	1	2
Sporting facilities	2	1	2	6	11
Fitness Centres	0	0	1	3	4
Shopping Centres	0	0	0	2	2
Post Offices	1	1	1	1	4
Libraries	0	0	1	1	2
Place of worship	3	2	3	7	15
Emergency Services					
State Fire Emergency	1	1	1	1	4
Police	0	1	1	1	3
Ambulance	0	0	1	1	2
Total	8	9	18	41	76

6.6.3 POTENTIAL SOCIAL IMPACTS

The first phase SIA provides a preliminary desktop assessment of the potential impacts, while the second phase SIA, that will be incorporated into the EIS, develops this preliminary assessment into a full assessment report. The full assessment report provides a detailed analysis of the potential impacts and incorporates key stakeholder feedback.

The scoping of potential social impacts was initially facilitated through consideration of the SIA Scoping Tool (DPE, 2023d) that complements the SIA Guideline. The SIA Scoping Tool identifies the potential social impacts that are considered likely to occur, and the corresponding level of assessment for each potential social impact. Use of the updated SIA Scoping Tool allows for the level of assessment to be identified, which in this case was determined to be 'detailed assessment'.

The methodology that will be followed in the second phase SIA is provided in **Section 6.6.4**. The second phase SIA will also take into account potential cumulative impacts in view of recent and proposed renewable energy projects, and other large-scale projects in the Project Social Locality.

As this is a first phase SIA, this impact assessment is preliminary in nature and makes assumptions about community perceptions and potential impacts from the Project, based on the desktop review, prior BESS SIA experience, and the outcomes of the engagement activities carried out to-date. The identified potential impacts listed in **Table 6-14** will be ground-truthed, supplemented by stakeholder feedback, and reviewed against any changes associated with further design development, subsequent to the issue of the SEARs.

It should be noted that the Project is continuously evolving and improving, and as such the outcomes of this preliminary assessment will be used to inform future refinements as part of the ongoing design development. Furthermore, given the operational timeframe for the Project (20-30 years), components may be upgraded to prolong the life of operation, or decommissioning and the land returned to the original land use.

For the purposes of this first phase SIA and the second phase SIA, a future decommissioning phase are not assessed. The potential social impacts associated with the decommissioning of the Project will be considered as part of a Decommissioning Plan (or similar).

TABLE 6-14 PRELIMINARY SOCIAL IMPACT ASSESSMENT

Description of Impact	Impact Categories	Impact Influence	Project Phase	Level of Assessment
Employment and Procurement				
Increased demand for labour in the Social Locality (generates direct and indirect employment opportunities)	Livelihoods	Positive	Construction	Detailed Assessment
Increased demand for labour in the Social Locality leading to a skill shortages/ reduced labour availability for local services and/or businesses	Livelihoods	Negative	Construction	Detailed Assessment
Increased demand for goods and services in the Social Locality (stimulates local economies)	Livelihoods	Positive	Construction	Detailed Assessment
Increased demand for goods and services in the Social Locality (creates shortages)	Livelihoods	Negative	Construction	Detailed Assessment
Diversification of income streams for host landowners	Livelihoods	Positive	Life of the Project	Detailed Assessment
Local Disruptions				
Disruptions to agricultural activities / farming practices (e.g. activities may limit access and cause temporary inconveniences for the operation of rural properties, such as stock movements, paddock access, etc.)	Livelihoods Health and Wellbeing	Negative	Life of the Project	Detailed Assessment
Increased vehicular movement from workers employed by the Project, and the transportation of materials and equipment to site, increasing the potential for accidents and wear and tear on road infrastructure	Health and Wellbeing	Negative	Construction	Detailed Assessment
Interruptions to daily life, such as changes in traffic conditions (e.g. diversions for school buses, road closures, changes to public vehicular access), utility disruptions, etc.	Way of Life Accessibility	Negative	Construction	Detailed Assessment
Impacts associated with noise, vibration, and dust, which may cause impacts or disruptions to community health.	Health and Wellbeing Surroundings	Negative	Construction	Detailed Assessment

Description of Impact	Impact Categories	Impact Influence	Project Phase	Level of Assessment
Changes to public vehicular access in the vicinity of the Project area has the potential to impact community access	Accessibility	Negative	Life of the Project	Detailed Assessment
Land Use and Landscape				
Perceived impacts on land and/or property values (i.e. a decrease in land values)	Livelihoods	Negative	Operation	Detailed Assessment
Visual impact through altered rural character/changes to rural amenity (i.e. loss of scenic views and negative changes to visual amenity)	Way of Life Surroundings	Negative	Life of the Project	Detailed assessment
Altered landscape has the potential to impact tangible and intangible Aboriginal heritage	Culture	Negative	Life of the Project	Detailed Assessment
Accommodation and Worker Influx				
Increased demand / pressures on housing and accommodation potentially resulting in a shortage and/or increased cost of living	Way of life	Negative	Construction	Detailed Assessment
Increased demand and pressure on social, emergency, community, and recreational services and/or facilities including health care	Accessibility Way of Life	Negative	Construction	Detailed Assessment
Stakeholder and Community				
Development of a Community Benefit Fund (or similar Project-specific community benefit sharing scheme), which may generate positive outcomes for the local community (e.g. support of local community groups, scholarships, etc.)	Livelihoods Culture	Positive	Life of the Project	Detailed Assessment
Reduced community cohesion and increased social tensions if appropriate management and/or mitigations are not implemented.	Health and Wellbeing	Negative	Construction	Detailed Assessment
Perceived adverse potential health impacts associated with the Project, including noise emissions, exposure to low level EMF, and bushfire risk.	Health and Wellbeing	Negative	Operation	Detailed Assessment

6.6.4 ASSESSMENT APPROACH

This section outlines the plan for developing the second phase SIA, in accordance with the requirements of the Social Impact Assessment Guideline and Technical Supplement (DPE 2023a, 2023b). Accordingly, the second phase SIA will be structured according to the following sections:

1. Introduction, Project Description, Regulatory Context

This section will provide a detailed overview of the Project locale, components, stages, and history. It will also provide a detailed review of the legislative and regulatory framework applicable to the SIA, considering relevant company policies.

2. Methodology

The impact assessment methodology to be applied to the second phase SIA follows DPHI's Social Impact Significance matrix (DPE, 2023b, pp 12-13). In this matrix, the likelihood level refers to the probability of a social impact's occurrence as a result of the Project while the magnitude is considered in terms of the following elements:

- **Extent:** Who specifically is expected to be affected (directly, indirectly, and/or cumulatively), including any potential vulnerable people? Which location(s) and people are affected? (e.g., near neighbours, local, regional);
- **Duration:** When is the social impact expected to occur? Will it be time-limited (e.g., over particular Project phases) or permanent?
- **Severity:** What is the likely scale or degree of change? (e.g., mild, moderate, severe);
- **Intensity:** How sensitive/vulnerable (or how adaptable/resilient) are affected people to the impact, or (for positive impacts) how important is it to them? This might depend on the value they attach to the matter; whether it is rare/unique or replaceable; the extent to which it is tied to their identity; and their capacity to cope with or adapt to change; and
- **Level of Concern / Interest:** How concerned/interested are people? Sometimes, concerns may be disproportionate to findings from technical assessments of likelihood, duration and/or severity. Concern itself can lead to negative impacts, while interest can lead to expectations of positive impacts.

The characteristics of the magnitude of impact combine with their likelihood of occurrence to yield a rating of social impact significance, as indicated in **Table 6-15**. The social impact significant matrix depicted in **Table 6-15** will be applied to yield the initial evaluation of social impacts that are likely to be experienced by different groups within the Project Social Locality.

TABLE 6-15 ADAPTED SOCIAL IMPACT SIGNIFICANCE MATRIX

		Magnitude level				
		1 Minimal	2 Minor	3 Moderate	4 Major	5 Transformational
Likelihood level	A Almost certain	Medium	Medium	High	Very High	Very High
	B Likely	Low	Medium	High	High	Very High
	C Possible	Low	Medium	Medium	High	High
	D Unlikely	Low	Low	Medium	Medium	High
	E Very unlikely	Low	Low	Low	Medium	Medium

*Where impacts are positive the following colour scale is used:

	Positive		Low	Medium	High	Very High
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3. Social Locality and Stakeholder Identification

This section will elaborate on the preliminary outline of the Project Social Locality. The update will incorporate regulator and client feedback on the preliminary identification and provide an updated stakeholder list as the SIA moves into the second phase and more information becomes available.

4. Stakeholder Engagement relevant to the SIA

This section summarises the community and stakeholder engagement activities and outcomes relevant to the SIA that have been undertaken during ongoing stakeholder engagement for the Project, and during targeted engagement for the SIA.

5. Social Baseline

This section will update and expand on the community profile. The preliminary desktop assessment will be supplemented and ground-truthed with data obtained during fieldwork, including stakeholder engagement activities outlined above.

6. Impact Assessment and Management

This section will update and expand on the preliminary social impact assessment, providing an impact assessment informed by the stakeholder engagement. Two ratings will be provided in the impact assessment table covering pre- and post-mitigation levels of impact significance. The section will also elaborate on the mitigation measures which may be applied to reduce the negative social impact significance levels, or enhance the social benefits, for the various social impacts identified. The level of residual impacts will also be noted.

7. Monitoring Framework

This section will provide an overview of the recommended monitoring framework for the social impact management and mitigation measures put in place during the construction and operation phases of the Project. The framework provided will help to form the basis for developing a SIMP as part of Project post-approval requirements.

8. References

List of all documents and other resources cited in the SIA.

9. Appendices

Appendices will include community profiles and other supporting information such as summaries of stakeholder engagement and primary research, where considered necessary.

6.7 TRAFFIC AND TRANSPORT

The Project is situated off Hanworth Road, Bannaby. The Project will utilise the transport route used for the Taralga Wind Farm development as this requires minimal upgrade and alteration of existing roads.

Traffic generation is expected to be greatest during the construction stage with the increased volume of both light vehicles used to transport workers and heavy vehicle movements associated with the delivery of materials, plant and equipment. Details of the likely traffic volumes generated during both construction and operation stages, including details of the proposed onsite car parking spaces will be provided as part of a Traffic Impact Assessment, prepared as part of the EIS.

During construction, materials will be transported to the site from either the Port of Newcastle or Port Botany. The capacity and efficiency of the local and regional road network for the proposed haulage route will be considered further in the TIA.

The TIA will include an assessment of cumulative impacts associated with construction programs of nearby large-scale projects. Consultation will also be undertaken with Upper Lachlan Shire Council and TfNSW to ensure any traffic related concerns are fully addressed as part of the EIS.

6.8 VISUAL

The EIS will consider the visual impact of the Project within the surrounding landscape. This will consider potential visual impacts on nearby residents and public viewpoints. The location of the Project provides significant natural topographic and vegetation relief from visual impacts. The footprint of the BESS is also small compared to, for e.g., a solar farm; therefore, impacts should be minimised by appropriate siting and landscaping, as necessary.

A Visual Impact Assessment will be prepared as part of the EIS. The VIA will include an assessment of the likely visual and landscape impacts of the Project (including glare, reflectivity and night lighting) on surrounding residences, road users and rail corridors. The assessment will also consider the cumulative visual impacts of the proposed BESS with the adjacent Bannaby substation. Where relevant, it will include mitigation measures to help reduce the project's impact on visual amenity.

6.9 LAND USE AND CAPABILITY

6.9.1 EXISTING ENVIRONMENT

The NSW Land and Soil Capability Assessment Scheme provides an indication of the land practices that can be applied to an area without causing degradation on and off-site. Review of the Land and Soil Capability Mapping data for NSW determined that the Project area is mapped as Class 6 – very severe limitations. This class is not compatible with high impact land uses such as cropping.

Review of the Australian Soil Classification Type Map of NSW determined the entire Project area is mapped as Kurosols (natirc) soil and does not contain and biophysical strategic agricultural land.

6.9.2 ASSESSMENT APPROACH

The Project EIS will be supported by a land use assessment which will detail the suitability of the Project site based on existing land use, site compatibility and soil constraints. Appendix A of the Large-scale Solar Energy Guideline details the agricultural impact assessment requirements. Figure 4 of this appendix contains a flow chart which outlines the three levels of assessment that may be required. The Project area is zoned as RU2, does not contain nor is adjacent to land mapped as LSC class 1-4 or biophysical strategic agricultural land, and is adjacent to land zoned RU2. Therefore, a Level 1 basic assessment is likely to be required for the Project.

Level 1 assessments typically include presentation of LSC mapping and site verification, consultation with neighbouring landholders, description of potential Project impacts and measures to reduce these impacts on and off-site.

6.10 WATER RESOURCES

6.10.1 EXISTING ENVIRONMENT

The Project area is situated within the Hawkesbury Nepean water catchment which extends over an approximate area of 21,400 km². The nearest natural watercourse is St Pauls Creek, located within the Project area, 60 m from the BESS Facility. This area is mapped as Key Fish Habitat (KFH) within the Hawkesbury Nepean catchment. Additionally, there are at least three farm dams within the Project area.

There are no high ecological value aquatic ecosystems mapped within the Project area. Most of the Project area is mapped as non-native vegetation and does not contain groundwater dependant ecosystems. Small areas associated with St Pauls Creek are mapped as low – medium potential for housing groundwater dependant ecosystems. There are no boreholes located within the Project area.

Review of the NSW Flood Data Portal, managed by the State Emergency Service (SES) determined that no flood maps are available for the Project area and the locality of Bannaby NSW. The nearest flood studies to the project are from Goulburn NSW.

A map of all the hydrological landscape within the Project locality is shown in **Figure 6-7**.

6.10.2 ASSESSMENT APPROACH

The Project EIS will be supported by an assessment to identify potential impacts to surrounding watercourses, including flooding, and details on measures proposed to monitor, reduce and mitigate potential impact.

Flooding investigations are likely to include the development of models to determine flood levels, severity, and hazard categories for the site with the Project in place. Including measures such as design solutions or operation procedures to mitigate potential for increased flood risk.

Water resources assessments are likely to include the description of water usage requirements during construction and operation of the Project. Including where and how the Project will meet these water requirements (Water access licences under the *Water Management Act 2000* or other arrangements). The assessment will also outline erosion and sediment control measures that are to be implemented during the construction of the Project in accordance with *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004).

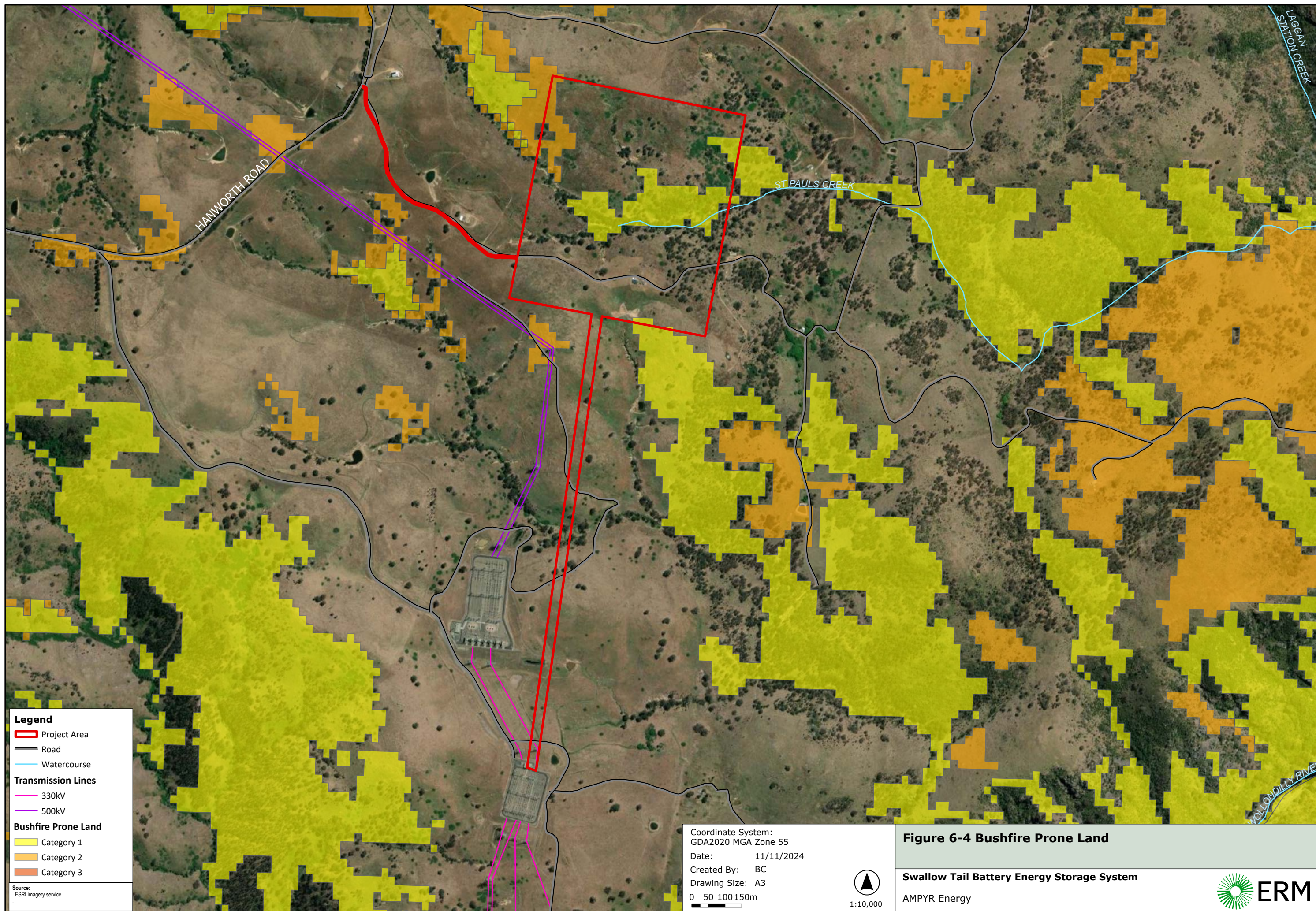
6.11 AIR QUALITY

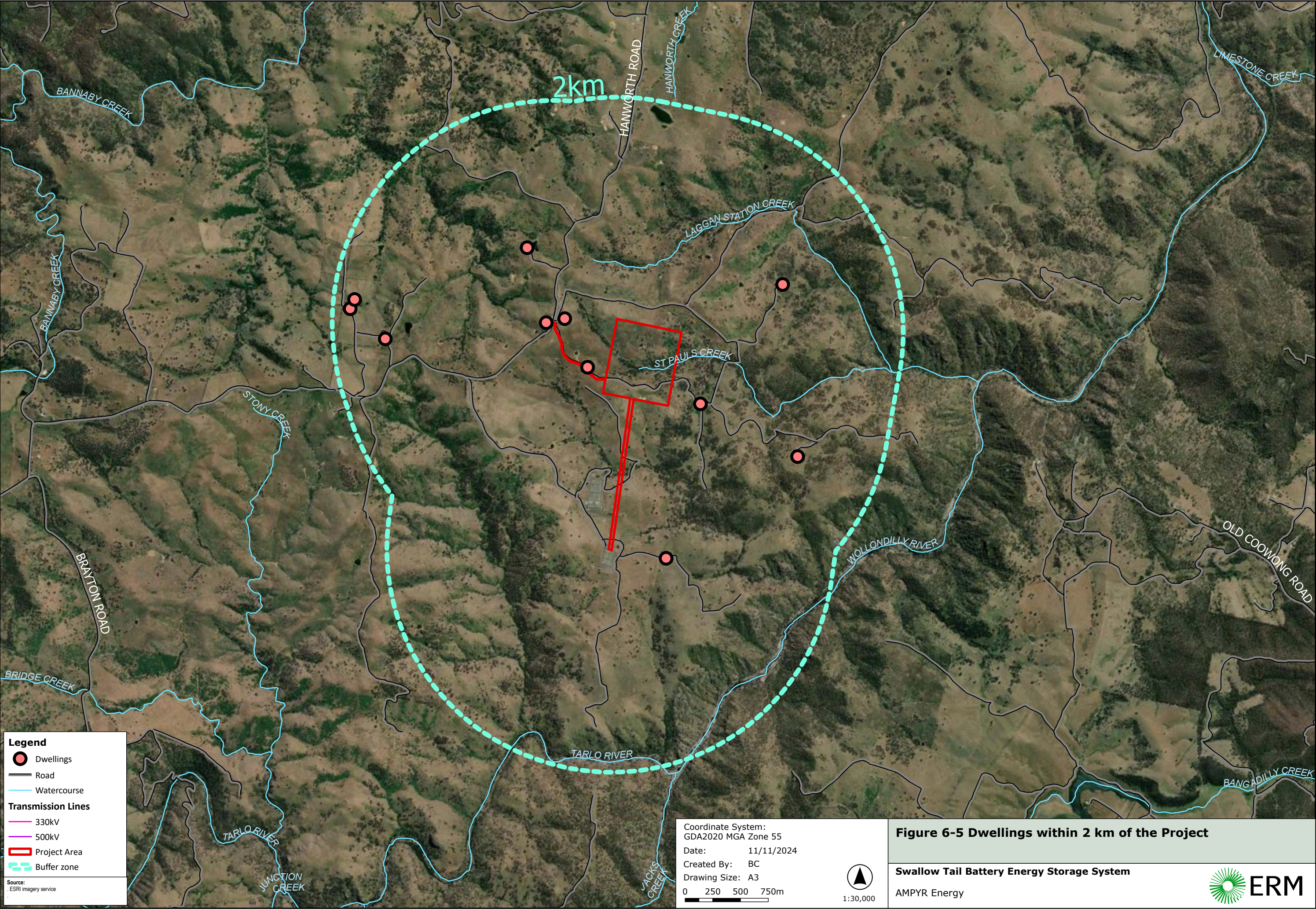
The Project is not expected to have significant impacts on air quality in the region. Impacts during construction will generally relate to dust generation from construction works, while impacts during operation are expected to be minimal. More broadly, the Project will also have a positive impact on air quality by contributing to the overall reduction of greenhouse gas emissions. The EIS will consider the potential impacts to air quality and propose appropriate management and mitigation measures during the construction and operational phases of the Project. Air quality and dust management will generally be assessed in accordance with relevant guidelines and policies including:

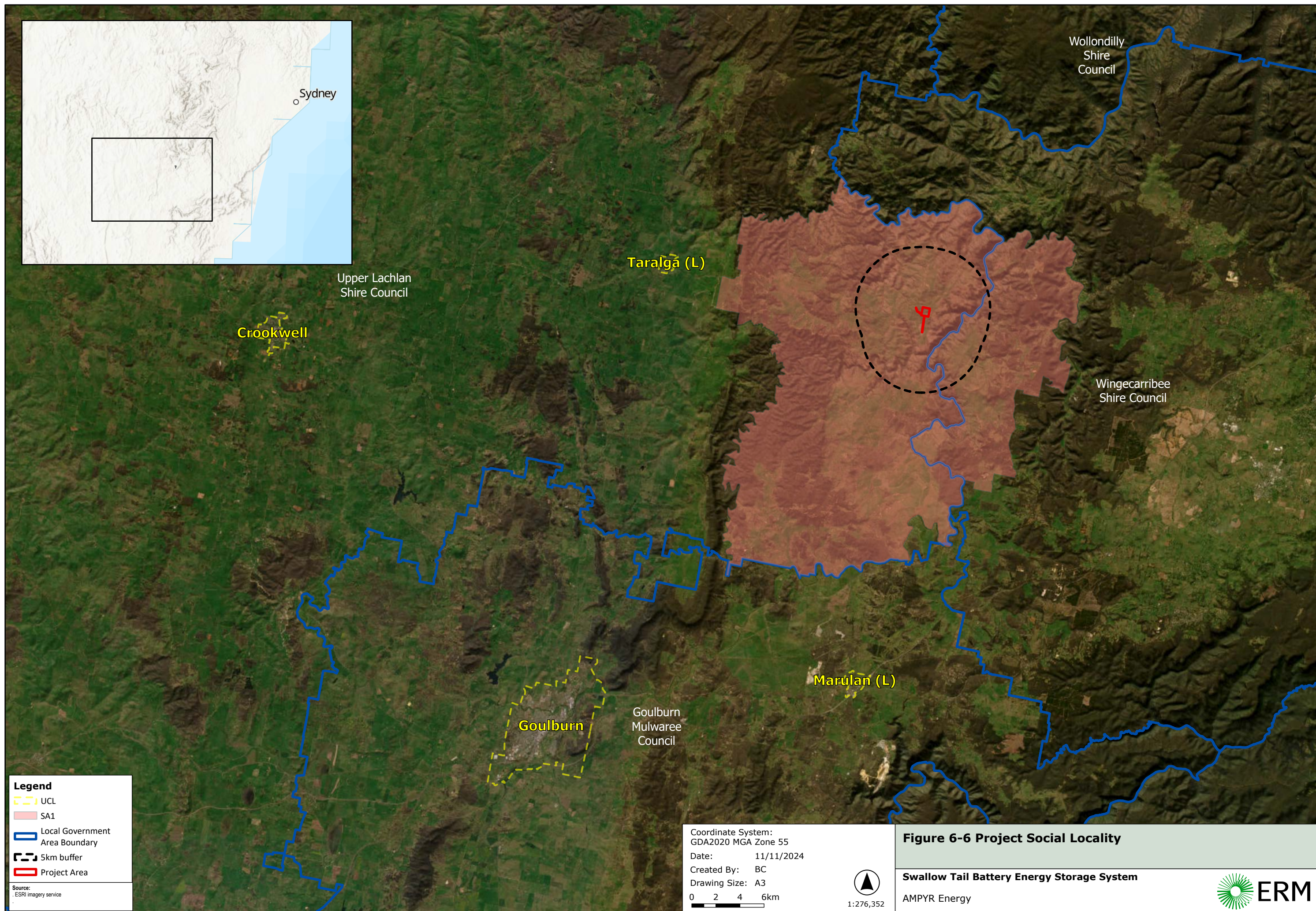
- National Greenhouse Accounts Factors (Australian Government, 2021); and
- NSW Climate Change Policy Framework (OEH, 2016).

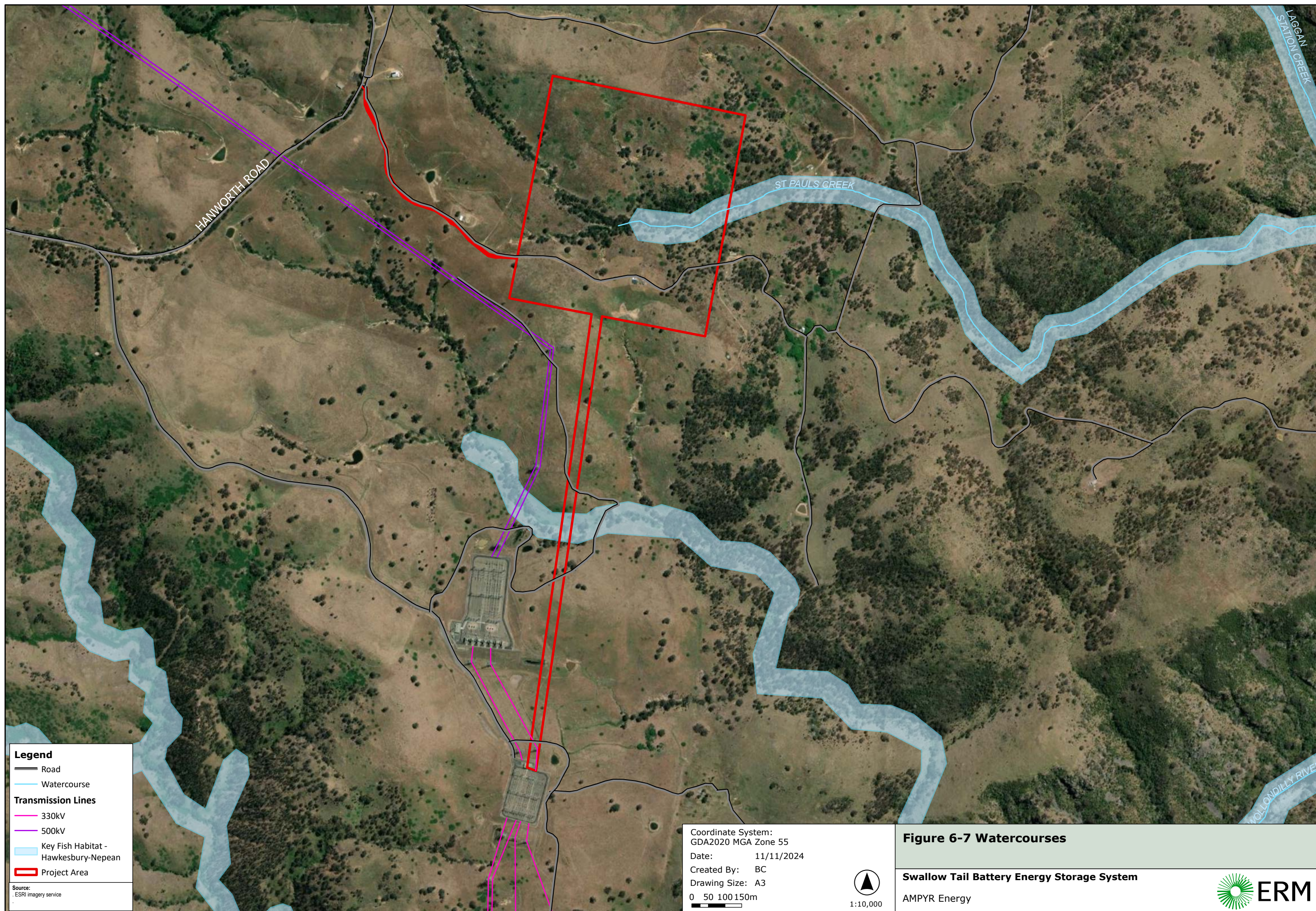
6.12 WASTE MANAGEMENT

The EIS will quantify and classify the likely waste streams to be generated during construction and operation and describe measures to manage, reuse, recycle and dispose of waste in accordance with waste Classification Guidelines (NSW EPA, 2014).









6.13 CUMULATIVE IMPACT ASSESSMENT

The Cumulative Impact Assessment Guidelines for State Significant Projects (DPE, 2022) (CIA Guidelines) provides a framework for assessing and managing project-level cumulative impacts. A CIA will be completed to support the Project EIS in accordance with the CIA Guidelines.

6.13.1 SCOPE OF ASSESSMENT

The Project is to consider past, present and reasonably foreseeable future projects. Projects considered in the CIA are limited to those specified in section 3.4 of the CIA Guidelines.

The CIA will focus on the construction and operational impacts of the Project in conjunction with projects within 50 km. Additionally, the CIA considers traffic routes, noise and visual amenity, and social impacts including availability of workforce, workers accommodation, access to goods and services, health and wellbeing.

6.13.2 STUDY AREA

The study area for the CIA encompasses an area of 20 km radius from the Project area. This area considers how overlapping construction timelines with projects in the vicinity could impact the local and state road network, including OSOM and upgrades required. The study area captures the social locality of the Project and will seek to identify impacts relating to construction workforce accommodation within the Upper Lachlan Shire LGA and surrounding LGAs. The assessment will be based on the 'worst case' assumption that all proposed projects in the study area will be constructed at the same time.

The study area for environmental aspects such as noise, air quality and amenity will use areas varying from 2 – 5 km from the Project area to capture potential impacts on the nearest receivers. Impacts to biodiversity, heritage, hydrology and other environmental aspects will be limited to the Project area and direct areas of impact related to the Development footprint.

6.13.3 TIME PERIOD

Construction of the Project is expected to commence in 2027 with commissioning and operational activities expected by 2028. The potential cumulative impacts associated with Project staging are detailed in **Table 6-16**.

TABLE 6-16 CUMULATIVE IMPACTS ASSOCIATED WITH PROJECT STAGING

Project Phase	Estimated Timeframe	Likely Scale of Impacts	Duration of Impact	Potential Cumulative Impact
Assessment and Approvals	2026	Minor	Temporary	Social – community wellbeing
Construction	2027	Moderate	Temporary	Amenity – noise, vibration air quality. Traffic and transport Social – community wellbeing
Operation	2028	Minor	Ongoing until end of Project lifetime	Amenity – noise Hazards and risk Social – community wellbeing

6.13.4 PROJECTS TO ASSESS

The relevant SSD projects that are proposed, approved, under construction and operational that are within 20km of the Project, and are therefore included in the CIA, are listed below:

- Taralga Wind Farm;
- Wattle Creek BESS;
- Wattle Creek Solar Farm;
- Marulan Gas-Fired Power Station; and
- Berrima Coal Mine.

6.13.5 ASSESSMENT APPROACH

The assessment method required for the CIA is outlined in **Table 6-17** below. Further assessment of the cumulative impacts relating to environmental impacts such as noise, traffic, visual, and social will be completed to inform the EIS. These assessments will be conducted in accordance with the CIA Guidelines. Outcomes of the CIA will be used to create environmental mitigation measures to minimise any potential cumulative impacts as a result of the Project.

Table 6-18 outlines the scoping summary table for this assessment.

Limitations to this is that there is uncertainty with the timeframes for approval, construction, and operation with nearby projects. The CIA assumes a worst-case scenario that all the projects will be constructed and operated at the same time.

TABLE 6-17 CUMULATIVE IMPACT ASSESSMENT APPROACH

Level of Assessment	
Detailed Assessment	The Project may result in significant impacts on the matter, including cumulative impacts. Detailed assessment is characterised by: • Potential overlap in impacts between a future project (e.g., Project A) and the proposed project; • 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; and • Uncertainties exist with respect to data, mitigation, assessment methods and criteria.
Standard Assessment	The Project is unlikely to result in significant impacts on the matter, including cumulative impacts. Standard assessments are characterised by: • 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; and • The assessment is unlikely to involve any significant uncertainties or require any detailed cumulative impact assessment.
No Assessment Required	No potential overlap in impacts between a future project and the proposed project that would warrant any consideration in the cumulative impact assessment

TABLE 6-18 CUMULATIVE IMPACT ASSESSMENT SCOPING SUMMARY TABLE

Project	Project Status	Distance from Project	Potential Overlap of Impacts				
			Traffic and Transport	Visual Amenity	Noise Amenity	Social Impacts	Hazards and Risk
Taralga Wind Farm (TWF)	Operational	13 km west					
			No potential overlap in visual impacts between TWF and the Project.	No potential overlap in visual impacts between TWF and the Project.	No potential overlap in noise impacts between TWF and the Project	Potential risk of cumulative impacts. Further assessment is required	No potential overlap in noise impacts between TWF and the Project
Wattle Creek BESS (WCB)	Under Assessment	17 km south					
			Potential overlap in traffic and transport impacts related to the transport route	No potential overlap between WCB and the Project	No potential overlap between WCB and the Project	Potential risk of cumulative impacts. Further assessment is required	No potential overlap between WCB and the Project
Wattle Creek Solar Farm (WCSF)	Under Assessment	17 km south					
			Potential overlap in traffic and transport impacts related to the transport route	No potential overlap between WCSF and the Project	No potential overlap between WCSF and the Project	Potential risk of cumulative impacts. Further assessment is required	No potential overlap between WCSF and the Project
Marulan Gas Fired Power Station (MGFPS)	Approved	19 km south					
			Potential overlap in traffic and transport impacts related to the transport route	No potential overlap between MGFPS and the Project		Potential risk of cumulative impacts. Further assessment is required	No potential overlap between MGFPS and the Project
Berrima Coal Mine (BCM)	Approved	20 km east					
			Potential overlap in traffic and transport impacts related to the transport route	No potential overlap between BCM and the Project	No potential overlap between BCM and the Project	Potential risk of cumulative impacts. Further assessment is required	No potential overlap between BCM and the Project

7. CONCLUSION

AMPYR Australia Pty Ltd is proposing to develop a BESS with a capacity of 375 MW, near the town of Bannaby NSW 2580. The Project is in the Upper Lachlan LGA and is known as the Swallow Tail BESS.

The Project will include:

- Installation of lithium-ion batteries with an aggregate capacity of 1500 MWh;
- An upgrade to the project site entry located at Hanworth Road, Bannaby and internal access tracks to facilitate the transport of Project components to the Project area;
- Electrical reticulation to connect the BESS to the existing Bannaby South 330 kV Substation;
- Associated and ancillary infrastructure including an onsite substation, site office and perimeter fencing;
- Temporary construction facilities including construction compound, laydown area and car parking; and

The preliminary environmental assessment undertaken for this Scoping Report finds that the Project area is suitable to accommodate the Project for the following reasons:

- Proximity to the Bannaby South 330 kV Substation and nearby renewable energy projects;
- The Project will contribute creating employment opportunities in the area; and
- Project accessibility from Sydney and Goulburn.

This Scoping Report has considered:

- The scale and nature of environmental impacts associated with construction and operation of the Project;
- Whether the Project will contribute to cumulative impacts associated with other nearby SSD projects;
- The Projects ability to avoid, mitigate and offset any potential impacts; and
- The complexity of technical assessments required for the Project EIS.

The Project EIS will be prepared in accordance with the requirements of the SEARs issued by DPHI. All assessments will be completed in accordance with the relevant legislation, guidelines and standards, as well as consultation with relevant stakeholders.

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APPENDIX A SCOPING SUMMARY TABLE

APPENDIX 1 SCOPING REPORT SUMMARY TABLE

Aspect	Level of Assessment	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Mitigation Measures Required	Cumulative Impact Assessment	Engagement	Relevant Government Plans, Policies and Guidelines	Scoping Report Reference
Biodiversity	Detailed	Moderate	Direct	Sensitive – local flora and fauna, vegetation communities.	Yes	No	General	- Biodiversity Assessment Methodology (DPE 2020) - Commonwealth EPBC 1.1 Significant Impact Guidelines – Matters of National Environmental - Significance (Commonwealth of Australia, 2013) - Commonwealth Department of the Environment – - Survey Guidelines for Threatened Species (various)	Section 6.2
Aboriginal Cultural Heritage	Detailed	Low-Moderate	Direct, Indirect, and Perceived	Sensitive – cultural value	Yes	No	Specific	- Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011) - Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010) - Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW, 2010c) - Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW, 2010b)	Section 6.3.1
Historic Heritage	Standard	Low	Direct, Indirect	Sensitive – heritage values	Yes	No	General	Historical Archaeology Code of Practice (Heritage Council, 2006)	Section 6.3.2
Bushfire Risk and Hazards	Standard	Low	Direct, Indirect, and Perceived	Sensitive – community safety, health and wellbeing	Yes	No	General	- Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (Department of Planning, 2011) - Assessment Guideline: Multi-level Risk Assessment (Department of Planning and Infrastructure, 2011) - Hazardous Industry Planning Advisory Paper No 6: Hazard Analysis (Department of Planning, 2011) - Planning for Bushfire Protection 2019 – NSW Rural Fire Service (RFS, 2019)	Section 6.4
Noise Amenity	Standard	Low	Direct, Cumulative, and Perceived	Sensitive – receivers	Yes	Yes	General	- Noise Policy for Industry (2017) (NSW Environment Protection Authority) - Interim Construction Noise Guidelines 2009 (Department of Environment, Climate Change) - NSW Road Noise Policy 2011 (Department of Environment, Climate Change and Water) - Assessing Vibration: A Technical Guideline 2006	Section 6.5

Aspect	Level of Assessment	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Mitigation Measures Required	Cumulative Impact Assessment	Engagement	Relevant Government Plans, Policies and Guidelines	Scoping Report Reference
Social	Standard	Low	Direct, Cumulative, and Perceived	Sensitive – community, environmental, economic	Yes	Yes	Specific	- Social Impact Assessment Guideline for State Significant Projects (DPE, 2021) - Technical Supplement: Social Impact Assessment Guideline for State Significant Projects (Technical Supplement) (DPE, 2021)	Section 6.6
Land Resources	Standard	Low	Direct, Indirect	Sensitive – agricultural land	Yes	No	General	- Soil and Landscape Issues in Environmental Impact Assessment (OEH, 2000) - Landslide Risk Management Guidelines (AGS, No Date) - Site Investigations for Urban Salinity (OEH, 2002) - Revised Large Scale Solar Guidelines (DPE, 2022)	Section 6.7
Water Resources and Flooding	Standard	Low	Direct, Indirect	Sensitive – Local watercourses and water quality	Yes	No	General	- Managing Urban Stormwater; Soils & Construction (Landcom, 2004) - Guidelines for Controlled Activities on Waterfront Land (DPI Water, 2018) - Relevant Water Sharing Plans (DPI Water) - Guidelines for Watercourse Crossings on Waterfront Land (DPI Water, 2012) - Floodplain Risk Management Guidelines (Department of Environment and Climate Change, 2016) - Floodplain Development Manual: The management of flood liable land (NSW Government, 2005)	Section 6.10
Air Quality	Standard	Low	Direct, Indirect	Sensitive – local amenity	Yes	No	General	- National Greenhouse Accounts Factors (Australian Government, 2021) - NSW Climate Change Policy Framework (Office of Environment and Heritage, 2016).	Section 6.11
Waste Management	Standard	Low	Direct, Indirect	Sensitive – local environment and local infrastructure	Yes	No	General	Waste Classification Guidelines (DECCW, 2009)	Section 6.12



APPENDIX B AHIMS SEARCH RESULTS

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Bannaby BESS 1

Client Service ID : 941739

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	<u>Site Status **</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
52-1-0279	BA8 (Bannaby Substation)	AGD	56	228570	6184881	Open site	Valid	Artefact : 2		100843,10115 2,102556
	<u>Contact</u>	<u>Recorders</u>	Navin Officer Heritage Consultants Pty Ltd					<u>Permits</u>	2915	
52-1-0277	BA6 (Bannaby Substation)	AGD	56	228761	6184670	Open site	Valid	Artefact : 1		100843,10115 2,102556
	<u>Contact</u>	<u>Recorders</u>	Navin Officer Heritage Consultants Pty Ltd					<u>Permits</u>	2915	
52-1-0280	BA9 (Bannaby Substation)	AGD	56	228595	6184745	Open site	Valid	Artefact : 1		100843,10115 2,102556
	<u>Contact</u>	<u>Recorders</u>	Navin Officer Heritage Consultants Pty Ltd					<u>Permits</u>	2915	
52-1-0272	BA1 (Bannaby Substation)	AGD	56	228928	6184698	Open site	Valid	Artefact : 4		100843,10115 2
	<u>Contact</u>	<u>Recorders</u>	Navin Officer Heritage Consultants Pty Ltd					<u>Permits</u>	2915	

** Site Status

Valid - The site has been recorded and accepted onto the system as valid

Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 21/10/2024 for Charles Barnett for the following area at Search using shape-file Bannaby_Boundary_Paul_Lot_39_1000m_20241610 with a buffer of 0 meters. Additional Info : Archaeological Assessment. Number of Aboriginal sites and Aboriginal objects found is 4

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Environmental Resources Management - Melbourne

Date: 21 October 2024

Level 6 99 King Street
Melbourne Victoria 3000

Attention: Charles Barnett

Email: charles.barnett@erm.com

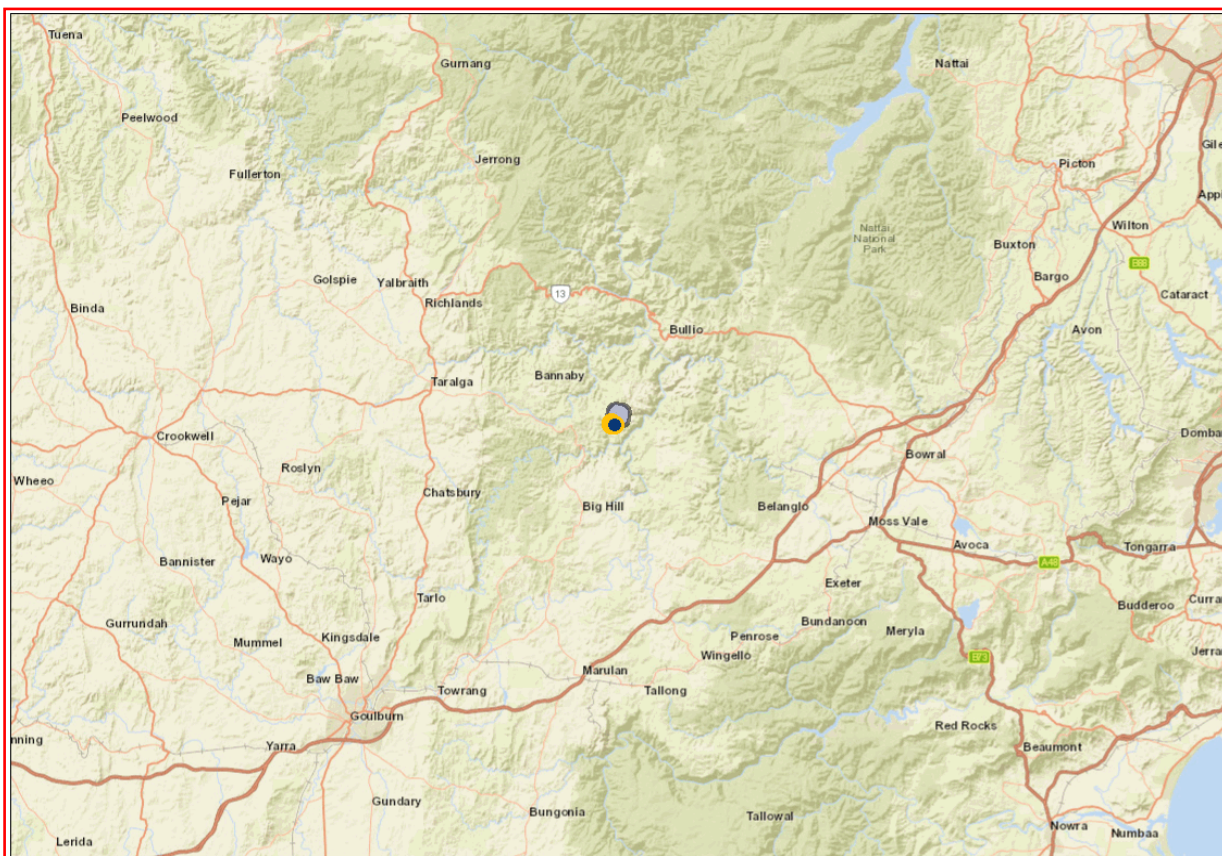
Dear Sir or Madam:

AHIMS Web Service search for the following area at Search using shape-file

Bannaby Boundary Paul Lot 39 1000m 20241610 with a buffer of 0 meters. Additional Info :

Archaeological Assessment, conducted by Charles Barnett on 21 October 2024.

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



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

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

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

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

Important information about your AHIMS search

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



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