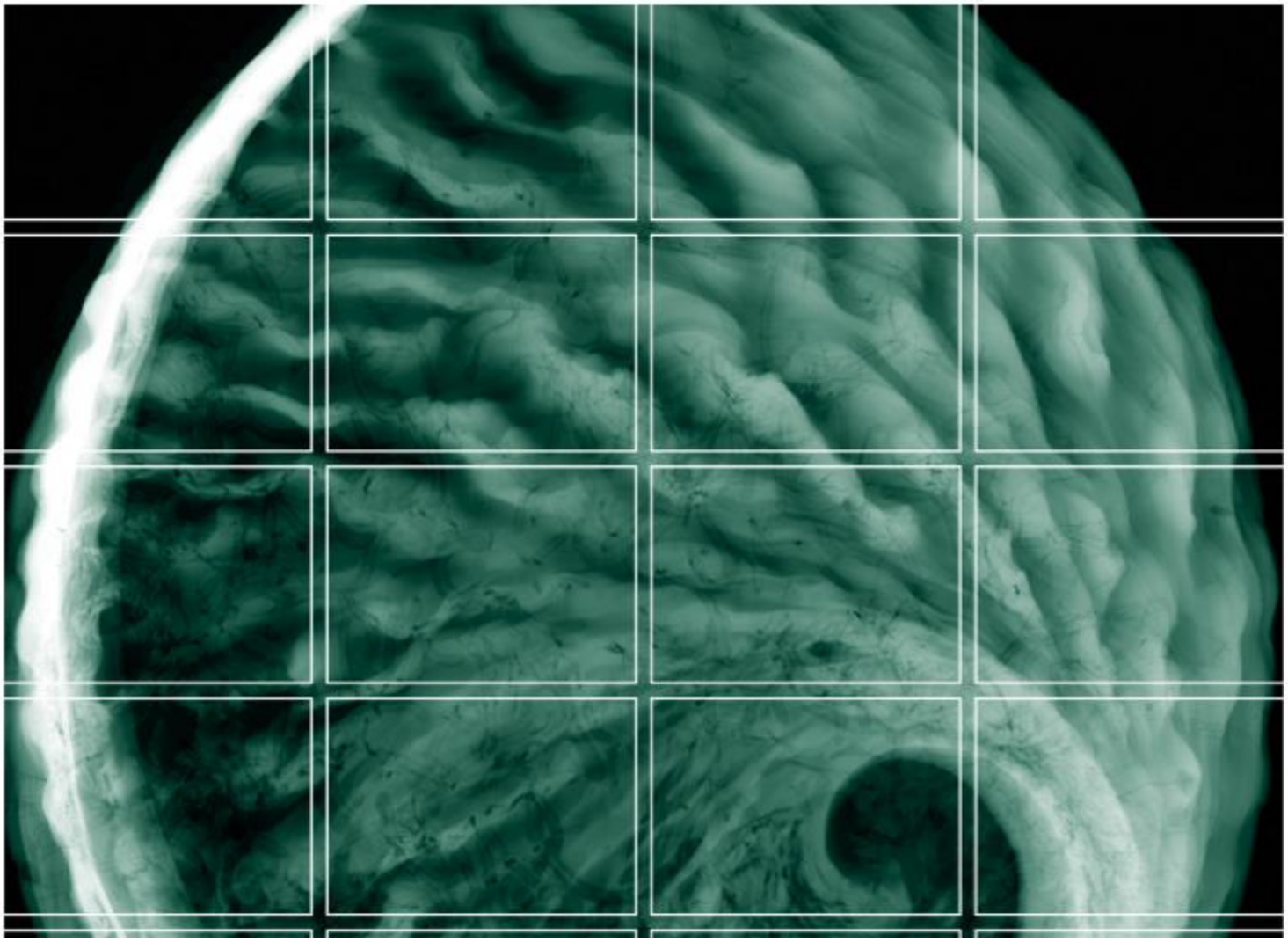


NEOEN

Eathorpe Battery

Scoping Report

14 October 2022

Project No.: 0646324

The business of sustainability

ERM

Document details	
Document title	Eathorpe Battery
Document subtitle	Scoping Report
Project No.	0646324
Date	14 October 2022
Version	1.0
Author	Elohanna Levi, Lorena Boyle, Lorien Perchard
Client Name	Neoen Australia Pty Ltd

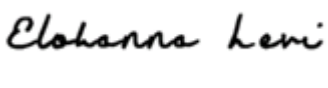
Document history				ERM approval to issue		
Version	Revision	Author	Reviewed by	Name	Date	Comments
Draft	01	EL, LB, LP	A Antcliff	M Davey	15/09/2022	
Final Draft	02	EL	A Smith	M Davey	27/09/2022	
Final Draft	03	EL	A Smith	M Davey	05/10/2022	
Final	04	EL	A Smith	M Davey	14/10/2022	

Signature Page

14 October 2022

Eathorpe Battery

Scoping Report



Elohanna Levi
Environmental Consultant

Adam Smith
Project Manager

Mark Davey
Partner

Environmental Resources Management Australia Pty Ltd
Level 15 309 Kent Street
Sydney NSW 2000

CONTENTS

List of Tables

List of Figures

Acronyms and Abbreviations

Name	Description
AHIMS	Aboriginal Heritage Information Management System
AMEO	Australian Energy Market Operator
AQC	Air Quality Categories
ASC	Australian Soil Classification
ASL	Above sea level
BC Act	NSW Biodiversity Conservation Act 2016
BESS	Battery Energy Storage System
BSAL	Biophysical Strategic Agricultural Land
CapEx	Capital expenditure
CCC	Community Consultative Committee
CEP	Community Engagment Plan
DA	Development Application
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DCP	Development Control Plan
DEWHA	Department of the Environment, Water, Heritage and the Arts
DPE	Department of Planning and Environment
DPIE	Department of Planning, Industry and Environment (now DPE)
EEAP	Energy Efficiency Action Plan
EIS	Environmental Impact Statement
EPBC Act	Commonwealth Environmental Protection and Biodiversity Conservation Act 1999
EP&A Act	NSW Environmental Planning & Assessment Act 1979
ERM	Environmental Resources Management Australia
ESD	Ecological Sustainable Development
DCP	Development Control Plan
GHG	Greenhouse gas
GWh	Gigawatt hours
km	Kilometres
km^2	Square kilometres
LEP	Local Environmental Plan
LGA	Local Government Area

Name	Description
LSC	Land and soil capability
m	Metres
MNES	Matters of National Environmental Significance (EPBC Act)
MW	Megawatt
NEM	National Electricity Market
Neoen	Neoen Australia Pty Ltd
NSW	New South Wales
REA	NSW Renewable Energy Action Plan
REZ	Renewable Energy Zone
RFS	NSW Rural Fire Service
RNE	Register of the National Estate
SEARs	Secretary's Environmental Assessment Requirements
SEED	Sharing and Enabling Environmental Data
SEPP	State Environmental Planning Policy
SSD	State Significant Development
TEC	Threatened Ecological Community
TNO	Transmission Network Operator
TTIA	Traffic and Transport Impact Assessment
WHL	World Heritage List

1. INTRODUCTION

1.1 Introduction

Neoen Australia Pty Ltd (the Applicant) propose to construct and operate the Eathorpe Battery development located east of Armidale, NSW (the 'Project'). The Project is a utility scale battery energy storage system, with a total capacity of up to 100 megawatts (MW) / 200 megawatt hours (MWh). The estimated capital expenditure (CapEx) for the Project is $80 million. The Applicant is seeking State Significant Development (SSD) consent for the Project under Part 4, Division 4.7 of the *Environmental Planning & Assessment Act 1979* (EP&A Act).

Environmental Resources Management Australia Pty Ltd (ERM) was engaged to prepare a Scoping Report for the Project, as a first step in the SSD consent process. The Scoping Report supports an application to the Secretary of the NSW Department of Planning and Environment (DPE) for Secretary's Environmental Assessment Requirements (SEARs). The SEARs will guide the preparation of an Environmental Impact Statement (EIS) for the Project as part of the Development Application (DA).

1.2 The Applicant

The Applicant, Neoen Australia Pty Ltd (Neoen) was founded in 2012 as a subsidiary of Neoen Société Anonyme (SA). The headquarters of Neoen SA are located in Paris, and they operate across renewable energy technologies, including solar, wind and battery storage. Neoen SA develops, finances, constructs, operates, owns and maintains its projects as a fully integrated renewable energy company, with a genuine long-term approach. The mission of Neoen SA is to design and implement the means to produce the most competitive renewable electricity, sustainably and on a large scale. They are a key player in the low carbon energy transition on the world stage, with 5.4 gigawatt (GW) currently in operation or under construction. As a responsible company whose long-term vision is reflected in a strong and sustainable growth strategy, Neoen SA is targeting more than 10 GW capacity globally in operation or under construction by the end of 2025.

Neoen began operations in Australia in 2012, and has established local capabilities in development, financing, construction, asset management and operations from offices located in Sydney, Canberra, Adelaide, Brisbane, Melbourne and Perth. Neoen has so far invested more than A$3 billion in Australian renewables, with more than 2.5 GW of renewable projects in operation or under construction in Australia, including:

- Coleambally Solar Farm, Dubbo Solar Hub, Griffith Solar Farm, and Parkes Solar Farm in NSW;
- DeGrussa Solar Farm & battery in WA;
- Western Downs Green Power Hub and Kaban Green Power Hub in QLD;
- Goyder South Stage 1, Hornsdale Wind Farm and Hornsdale Power Reserve in SA;
- Bulgana Green Power Hub, Numurkah Solar Farm and Victorian Big Battery, in VIC; and
- Capital Battery in the ACT.

Neoen is one of the leading renewable energy companies in Australia and is targeting to have 5GW renewable energy capacity in operation or under construction in Australia by 2025.

Neoen's Australian Business Number (ABN) and address are listed below:

- **ABN**: 57 160 905 706; and
- **Address**: Level 21, 570 George Street, Sydney, NSW 2000.

1.3 Project Overview

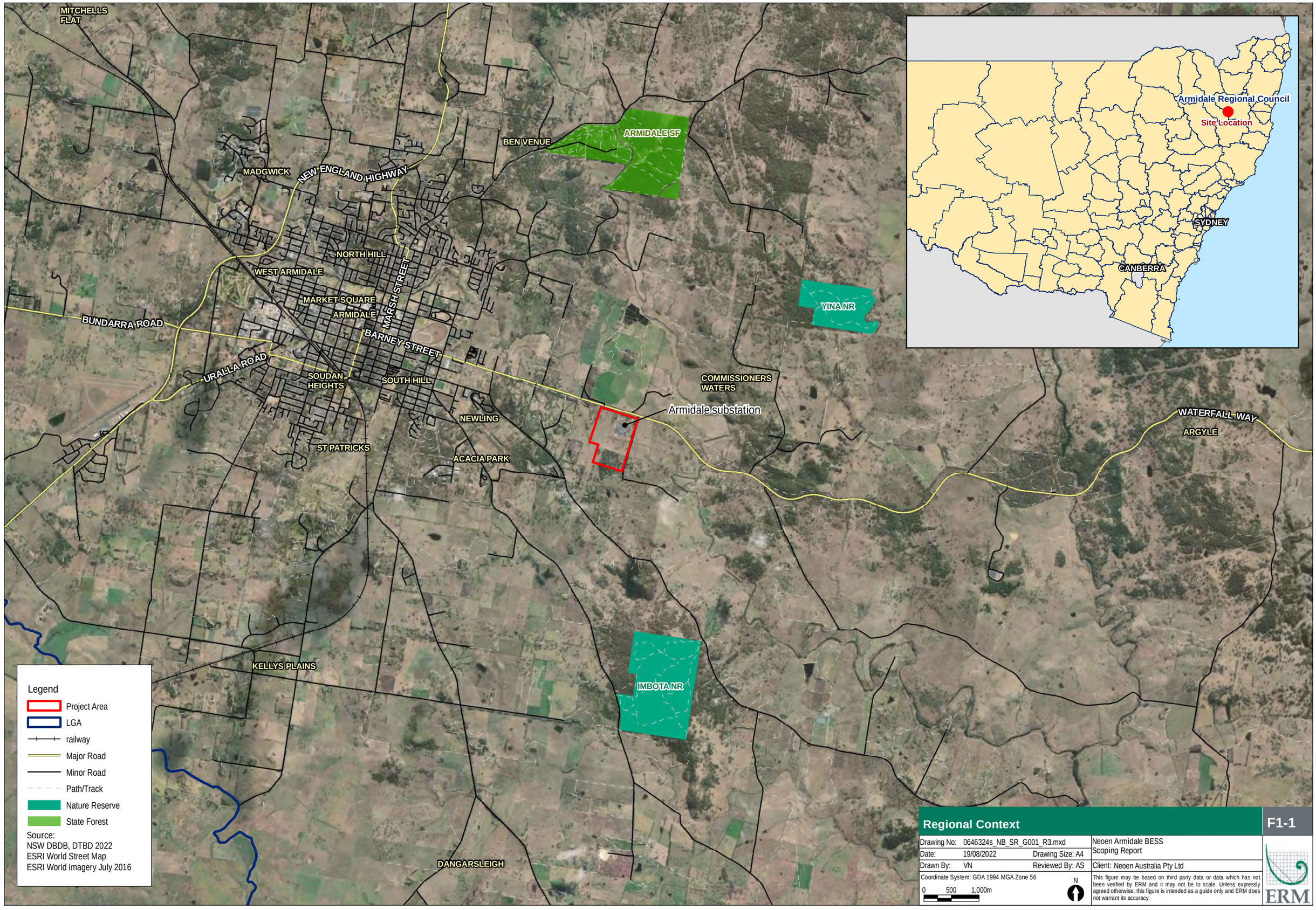
Neoen proposes to develop, construct, own and operate the Eathorpe Battery near Armidale in the New England and North West Region of NSW. The Project Area is located entirely within the Armidale Regional Council Local Government Area (LGA) on land that is currently used for cattle grazing. The regional context of the Project Area is identified in **Figure 1-1**.

The Project is a utility scale battery energy storage system, with a total capacity of up to 100 MW / 200 MWh, and includes ancillary infrastructure, to be located in the southwest portion of the Project Area. Neoen is proposing to build a new transmission line from the Project to the existing TransGrid Armidale Substation, which is located to the north of the Project Area.

Indicative ancillary infrastructure and associated works for the Project will include:

- Battery cells that will be housed in either climate-controlled shipping container style buildings or outdoor cabinets;
- Electrical inverters;
- Underground cabling and above-ground cabling;
- Associated control systems;
- Communications infrastructure;
- HVAC units and ventilation;
- MV and HV transformers;
- An Operations & Maintenance (O&M) facility and storage sheds/spare parts room;
- Car parking;
- Water tanks;
- Control room and electrical switch room;
- Extension of a busbar at an existing substation;
- Benching and earthing;
- Security fencing and lighting;
- Temporary construction compound and laydown areas; and
- Noise walls, landscaping and screening vegetation.

The Project design and components are described in further detail in **Section 3.2**.



Regional Context

F1-1

Drawing No:	0646324s_NB_SR_G001_R3.mxd		Neoen Armidale BESS Scoping Report
Date:	19/08/2022	Drawing Size: A4	
Drawn By:	VN	Reviewed By: AS	Client: Neoen Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

ERM

1.4 Project Objectives

The objectives of the Project are to:

- Deliver energy security, reliability and a stable energy supply for NSW consumers through its ability to store power and consequently charge and discharge energy as required by the electricity network;
- Assist in improving stability, sustainability and reliability to the electricity network services through proven and cost-effective solution;
- Supply electricity during periods of peak demand;
- Unlocking additional capacity on existing transmission networks, thereby reducing costs to electricity consumers;
- Reducing risk of potential future load shedding or blackout events;
- Supporting NSW Government to achieve a smooth transition towards their goal of 8,000 MW of renewable energy capacity in the New England Renewable Energy Zone (REZ).

1.5 Purpose of this Report

This Scoping Report supports an application for SEARs which will guide the development of the EIS to inform a SSD application under Part 4 of the EP&A Act. The Scoping Report has been prepared in accordance with the following guidelines:

- State Significant Development Guidelines - Preparing a Scoping Report: Appendix A to the State Significant Development Guidelines (DPIE, 2021a) (Scoping Report Guidelines);
- Social Impact Assessment Guideline for State Significant Projects (DPIE, 2021b);
- Cumulative Impact Assessment Guidelines for State Significant Projects (DPIE, 2021c);
- Undertaking Engagement Guidelines for State Significant Projects (DPIE, 2021d);
- Survey guidelines for Australia's threatened birds (DEWHA, 2017); and
- Significant Impact Guidelines 1.1 - Matters of National Environmental Significance (DoE, 2013).

2. STRATEGIC CONTEXT

2.1 Project Justification

2.1.1 Project Benefits

The Project will contribute to Commonwealth and NSW Government emission reduction targets by:

- Providing additional energy storage capacity and dispatchable energy during periods of high electricity demand;
- Allowing for generated renewable energy to be stored and then supplemented to the electricity grid constituting the National Electricity Market (NEM), supporting the transition of the energy sector away from a centralised system of fossil fuel generation, towards a more decentralised system of renewable energy production and storage and assist in reducing greenhouse gas (GHG) emissions;
- Improving security and resilience of the NEM;
- Helping to avoid blackouts and associated costs;
- Increasing competition and driving the price of electricity down, benefiting NSW consumers;
- Attracting growth and expertise in renewable energy; and
- Attracting renewable investment.

The Project will also provide direct financial benefits to the regional and local community, including:

- Infrastructure investment of approximately $80 million;
- Generation of up to 100 jobs during the construction phase and approximately 3 jobs during the operational phase;
- Indirect benefits to local services and businesses throughout the construction and operation phases;
- Additional landowner income resulting in financial contributions to the local community; and
- Local community benefits through the implementation of a Community Benefit Sharing Program that will provide direct and targeted local benefits.

The Project is located in the New England REZ, which was formally declared by the NSW Government in 2021. According to Armidale Regional Council (ARC, 2020), the expected benefits of the New England REZ include:

- Electricity reliability;
- Increasing affordability of electricity;
- Supporting emissions reduction; and
- Engaging local businesses and community members.

In addition, the Project will deliver significant benefits to the Region and local communities, including:

- Direct investment in the New England and North West Region;
- Opportunities for local contractors and businesses;
- New jobs to be created during construction;
- Long-term service and maintenance jobs during Project operation;
- Additional storage capacity for renewable low-cost energy to be supplied to the electricity grid constituting the NEM; and

- Development of new skilled labour in the region within the growing renewable energy industry.

Construction and operation of the Project will require a range of skills including engineering, trades (electrical, mechanical, construction), transport, building material providers, equipment operators, consultants and administrative staff.

2.1.2 Site Suitability

The Project Area is considered suitable for the Project for the following reasons:

- It is located within the boundaries of the New England REZ and will contribute to the future development of the REZ;
- The Project will be located in proximity to existing/ transmission infrastructure;
- There are a number of other existing and proposed renewable energy projects including utility scale battery energy storage system located within the region and in proximity to the Project Area;
- The Project Area is easily accessible via Waterfall Way (Grafton Road) and Eathorpe Road;
- The Project is compatible with the existing land uses of the Project Area and its surrounding areas;
- The Project is consistent with the *RU4 Primary Production Small Lots* zoning and will meet the following objective of the RU4 zone: to enable sustainable primary industry and other compatible land uses;
- The Project is consistent with the *SP2 Infrastructure* zoning and will also meet the following objective of the SP2 zone: to provide for infrastructure and related uses and prevent development that is not compatible with or that may detract from the provision of infrastructure; and
- The Project is located within a remote and sparsely populated area with limited receptors in proximity to the Project Area.

2.2 Alignment with Policy and Strategic Goals

Increased adoption of renewable energy generation sources and associated energy management will assist Australia to transition from traditional fossil fuel energy production, which is linked to anthropogenic climate change, atmospheric pollution, water pollution, land pollution and human health impacts. Critically, reducing carbon emissions through replacement of traditional energy sources with renewable energy and storage will assist to slow the effects of climate change, benefitting current and future generations in line with the principles of Ecologically Sustainable Development (ESD).

In addition to achieving the objectives outlined in **Section 1.4**, the Project will assist to achieve objectives of the following International, Federal Government, and State Government policies strategic goals:

- United Nations Sustainable Development Goals;
- Federal Government's Renewable Energy Target;
- Federal Government emissions reductions commitments;
- NSW Net Zero Plan Stage 1: 2020 – 2030;
- NSW Electricity Strategy;
- NSW Transmission Infrastructure Strategy;
- NSW Electricity Infrastructure Roadmap;
- NSW New England Renewable Energy Zone;

- Contributing to the National Electricity Market;
- New England North West Regional Plan;
- Armidale Local Strategic Plan; and
- Community Strategic Plan - Armidale.

2.2.1 United Nations Sustainable Development Goals

The *United Nations 2030 Agenda for Sustainable Development* includes global Sustainable Development Goals (SDG) to build a more sustainable and resilient future. The 17 SDG and 169 individual targets cover measures towards improvements to economic, social and environmental sustainability. All Member States of the United Nations agreed to work towards achieving the SDGs by 2030. Of relevance to the Project are:

- Goal 7: 'Ensure access to affordable, reliable, sustainable and modern energy for all', Target 7.2 states '*By 2030, increase substantially the share of renewable energy in the global energy mix'*; and
- Goal 11 Sustainable Cities and Communities, Target 11.6 states '*By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management'.*

The Project will provide a source of energy management for renewable energy projects, facilitating increased renewable electricity generation and dispatch in Australia. This will assist Australia reduce reliance on fossil fuels for electricity generation, resulting in reduction of greenhouse gas emissions and improved air quality via reduced air emissions.

2.2.2 Federal Government's Renewable Energy Target

The Renewable Energy Target (RET) is a Federal Government scheme which has been in operation since 2001. It is designed to reduce emissions of greenhouse gases in the electricity sector and encourage the additional generation of electricity from sustainable and renewable sources. Since January 2011, the RET has been operated as two schemes – small- and large-scale.

Amendments to the RET scheme in 2015 set new annual targets (for 2022-2030) for energy from large-sale renewable projects at 33,000 Gigawatt hours. Investment in renewable energy systems remains strong and the 2020 target has not acted as a cap on new investment (Clean Energy Regulator, 2020) as the competitiveness of renewable energy no longer relies on the generation of LGCs.

This is relevant for this proposal as, once constructed, it will assist in energy demand management to allow large-scale renewable energy projects to be developed so that the LRET can be achieved or exceeded. The Project will facilitate the delivery of renewable, low-cost energy to the electricity grid constituting the NEM.

2.2.3 Federal Government's Commitments

2.2.3.1 United Nations Framework Convention on Climate Change Conference of Parties (COP26) – Glasgow 2021

The United Nations Framework Convention on Climate Change (UNFCC) Conference of Parties 26 (COP26) was held in Glasgow in late 2021. A key outcome of COP26 was agreement to '*revisit and strengthen …2030 targets (Paris Agreement targets) in nationally determined contributions…by the end of 2022'* (UNFCCC, 2021) .

The Federal Government committed to achieving net zero greenhouse gas emissions by 2050 ahead of the G20 Summit in Rome and the Glasgow United Nations climate discussions (COP26).

The Project will assist in delivering on this key commitment for Australia by providing energy demand management for the projects that will significantly reduce emissions of greenhouse gases through renewable energy generation.

2.2.3.2 UNFCC 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 upon the 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 is one of 195 countries that signed on to the Paris Agreement and set a target to reduce emissions by 26-28 per cent below 2005 levels by 2030, building on the 2020 target of reducing emissions by five per cent below 2000 levels (PoA, 2017).

In June 2022, the Australian Government lodged an updated Nationally Determined Contribution (NDC) with the UNFCCC secretariat (Australian Government, 2022). The updated NDC:

- Committed Australia to a more ambitious 2030 target, to reduce greenhouse gas emissions by 43% below 2005 levels by 2030, which is a 15-percentage point increase on Australia's previous 2030 target; and
- Reaffirms Australia's commitment to net zero emissions by 2050.

The Project will contribute to meeting Australia's commitments under the Paris Agreement by creating additional storage capacity and energy demand management for renewable sources, which will contribute to annual reductions in greenhouse gas emissions.

2.2.4 NSW Government's Commitments

2.2.4.1 Net Zero Plan Stage 1: 2020-2030

The Net Zero Plan Stage 1: 2020–2030 (DPIE, 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, as outlined in the NSW Climate Change Policy Framework (OEH, 2016). The Plan is the NSW Government's overarching 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).

This Project will help give effect to the Net Zero Plan, including the NSW Government's updated 2030 target by facilitating energy demand management for renewable energy projects that will assist the NSW Government in achieving the 2030 target.

2.2.4.2 NSW Electricity Strategy

The *NSW Electricity Strategy* (DPIE, 2019a) is the NSW Government's plan to achieve the three objectives of reliability, affordability and sustainability for the NSW electricity system, and will support an estimated $8 billion of private investment in NSW's electricity system over the next decade.

An aim of the NSW Government's Electricity Strategy is to improve the efficiency and competitiveness of the NSW electricity market by reducing risk, cost, and government-caused delays, and to encourage investment in new price-reducing generation and energy saving technologies. The Strategy identifies the NSW Government's commitment to energy security, including additional capacity increases via interconnector projects and the rolling out of REZs. The Strategy aligns closely with the NSW Government's *Net Zero Plan Stage 1: 2020 – 2030*.

The Project is consistent with the Strategy as it provides storage capacity that, together with other renewable generation projects, is expected to result in lower cost of energy in the NEM.

2.2.4.3 NSW Transmission Infrastructure Strategy

The *NSW Transmission Infrastructure Strategy* (DPE, 2018) is the NSW Government's plan to unlock private sector investment in priority energy infrastructure projects, which can deliver least-cost energy to customers to 2040 and beyond. The Strategy forms part of the government's broader plan to make energy more affordable, secure investment in new power stations and network infrastructure and ensure new technologies deliver benefits for consumers.

The Strategy seeks to help meet future energy needs by facilitating new transmission that could support up to 17,700 MW of new electricity generation. Other benefits include improved energy reliability, security, timely project delivery, increased affordability and access to cheaper electricity.

The Project is consistent with the Strategy as it will provide energy storage and dispatch capacity to facilitate and provide electricity demand management for new renewable energy generation projects, which will provide more reliability in the NEM. Furthermore, the Project can unlock additional capacity on existing transmission lines, saving customers millions of dollars in expensive transmission line upgrades.

2.2.4.4 NSW Electricity Infrastructure Roadmap

The *NSW Electricity Infrastructure Roadmap* (Roadmap) is the NSW Government's plan to transform the NSW electricity sector into one that is clean, cheap and reliable. The Roadmap builds on the NSW Electricity Strategy (DPIE, 2019a) and the NSW Transmission Infrastructure Strategy (DPE, 2018). It sets NSW on a plan to replace its ageing coal-fired power stations with a coordinated portfolio of generation, storage and network investment.

The Roadmap emphasises the need to transition to renewable energies, noting four of the State's five coal fired power stations are expected to close within the next 15 years, starting with Liddell Power Station in early 2023, followed by Eraring (2025), Vales Point B (2029) and Bayswater (2033). These power stations currently provide around three quarters of NSW's electricity supply and two thirds of the firm capacity needed during heat waves (DPIE, 2020d).

Significantly, Origin Energy announced in February 2022 that it intends to close the Eraring Power Station in August 2025, seven years ahead of its previously planned retirement. Eraring is the largest of the remaining coal-fired power stations in Australia. Energy Australia also announced in September 2021 an accelerated closure date for the Mt Piper Power Station, the youngest of NSW's coal fired generation plants, by three years, to 2040.

Enabled by the *Electricity Infrastructure Investment Act 2020* (NSW), the Roadmap sets out a coordinated framework to support $32 billion in private investment in at least 12 gigawatts of renewable generation infrastructure and at least 2 gigawatts of long-duration storage infrastructure supporting network infrastructure by 2030 (DPIE, 2020d).

The Roadmap seeks to reduce NSW electricity emissions by 90 million tonnes by 2030, helping deliver on NSW's ambitions to reach net zero emissions by 2050 and the updated objective to reduce emissions by 50% below 2005 levels by 2030 (DPIE, 2020d).

The Project will provide a significant amount of renewable energy storage to help with energy demand management, which will facilitate the development of new renewable energy projects, assisting in NSW low carbon energy transition.

2.2.4.5 New England Renewable Energy Zone

The *NSW Electricity Strategy* and Roadmap establish the framework to deliver the state's first five REZs in strategic areas across the state, including in the New England region. The REZs will play a significant role in delivering renewable energy generation and storage to help replace existing fossil fuel power stations as they come to their end of operational life.

The New England region has been identified as one of five REZs to be created in NSW, with others being declared/proposed in the Central-West Orana, Illawarra, south west and Hunter-Central Coast regions of NSW. REZs combine wind, solar, hydroelectric and energy storage, together with high-voltage transmission lines, to generate and deliver clean, renewable energy. By connecting multiple generators and storage in the same area, REZs capitalise on economies of scale to deliver cheap, reliable and clean electricity for homes and businesses in NSW.

The New England REZ encompasses some of Australia's best natural energy resources. The location of the New England REZ was selected based on detailed geospatial mapping, which identified areas of high renewable energy resource potential (e.g., wind speeds, solar irradiance), proximity to existing transmission infrastructure, and interactions with existing land uses. The New England REZ was declared by the Minister for Energy and Environment in December 2021. The declaration begins the process of formalising the REZ under the *Electricity Infrastructure Investment Act 2020*, establishes EnergyCo as the Infrastructure Planner for the REZ, and sets the intended network capacity of 8,000MW. The declaration of the New England REZ also supports the implementation of the *Australian Energy Market Operator's Integrated System Plan*.

The objectives of REZs are to:

- Deliver affordable energy into the future;
- Diversify the NSW energy mix;
- Expand electrical transmission capabilities; and
- Open up new parts of the National Electricity Market (NEM) for energy generation in locations that can benefit from diverse weather patterns.

The Project is strategically located within the New England REZ and aligns with the strategic objectives of the New England REZ as identified above.

2.2.4.6 Contributing to the NEM

The AEMO *2021 Electricity Statement of Opportunities* provides updated forecasts for demand and supply of electicity (AEMO, 2021). Traditionally, coal-fired generation and some gas peaking power plants have met NSW's electricity needs. In 2020, coal-fired generation supplied 74% of the total electricity generated in Australia, with renewables supplying 24% of generation (Department of Industry, Science, Energy and Resources, 2021). However, it is expected that over 16 gigawatts (GW) of thermal generation (about 61% of the current coal fleet in the NEM) will retire in the next two decades and between 26 GW to 50 GW of new large-scale wind and solar capacity is forecast to come online (Australian Energy Regulator, 2021).

The AEMO 2022 Integrated System Plan (June 2022) (ISP 2022) has attributed the optimal development pathway for the NEM as a nine-fold increase in utility-scale variable renewable energy (VRE) and storage. ISP 2022 continues that much of this resource will be built in REZs, which have 'the potential to foster a more holistic approach to regional employment, economic opportunity and community participation' (AEMO, 2022).

The AEMO's 2021 Electricity Statement of Opportunities report notes the substantial pipeline of future projects in various stages of development. These projects total 121 GW and are spread across all regions, including NSW.

The Project will help to meet increasing demand for energy in the NEM as forecast by AEMO from 2026-2027 onwards and will help to offset the planned retirement of fossil fuel generation plant over the next two decades.

2.3 Land Use Planning

2.3.1 New England North West Regional Plan 2036

New England North West Regional Plan 2036 applies to the Armidale LGA. The plan aligns with the NSW Government's 20-year strategy for guiding land use planning decisions for the New England North West Region. The plan replaced the previous strategic plan for the region, the *New England North West Strategic Regional Land Use Plan*. The plan sets regional planning priorities and provides guidance and direction for regional and local planning decisions for the region and each local government area. A Government direction has been issued to councils so that new planning proposals or updated local planning controls are consistent with the directions and actions outlined in the plan.

The NSW Government has established the New England North West Delivery, Coordination and Monitoring Committee to deliver, coordinate and be accountable for achieving the vision and goals of the Plan. Every five years, or as necessary, the Plan will be reviewed and adjusted to make sure the vision for 2036 is realised.

A key direction under 'Goal 1: A strong and dynamic regional economy', is '*Direction 5: Grow New England North West as the renewable energy hub of NSW*'. The Plan states:

- New opportunities for employment will be offered in emerging renewable energy and green technology industries, and positions the new renewable energy generation and 'green' industries as eco-friendly alternatives and solutions to environmental issues and challenges, noting that the region can be a leader in renewable energy;
- That existing proposals for large wind and solar farms, and energy storage will generate employment and investment from construction, operations and connection to the State's electricity grid; and
- Incorporating small-scale cogeneration measures into the design of new developments and providing employment lands for research and development opportunities will further support the sector's growth.

Relevant actions of the plan include:

- 5.1: Diversify the energy sector by identifying renewable energy resource precincts and infrastructure corridors with access to the electricity network; and
- 5.2: Facilitate appropriate smaller-scale renewable energy projects using biowaste, solar, wind, hydro, geothermal or other innovative storage technologies.

The Project will assist in achieving these actions and is consistent with Goal 1 Direction 5 of the Plan.

2.3.2 Armidale Local Strategic Planning Statement 2040

The *Armidale Local Strategic Planning Statement 2040* (LSPS) identifies clear planning priorities to address planning and development for the Armidale LGA. The LSPS sets short, medium and long-term actions to deliver community priorities and vision as referenced in the *New England North West Regional Plan 2036* and *Community Strategic Plan Armidale 2017 – 2027*.

Of relevance to the Project are Planning Priorities 2.d and 3.h, as summarised in **Table 2-1**.

Table 2-1 Armidale LSPS Planning Priorities Relevant to Project

Armidale LSPS Planning Priority	LSPS Commitment	Project Response
#2 Economy - d) Employment Land: Facilitate the development of land required and suitable for commercial or industrial and related purposes	Support the development of employment lands	The Project is consistent with Planning Priority #2 as it delivers jobs and economic benefits to regional and local communities throughout the construction and operation of the Project. The Project is anticipated to create up to 100 construction jobs, and 3 operational jobs.
#3 Infrastructure - h) Renewable Energy: Investigate potential opportunities for development of renewable energy production facilities	Identify and promote options for renewable energy generation opportunities	The Project is consistent with Planning Priority #3 as it contributes to the new renewable energy generation industry storage within the Armidale LGA.

2.3.3 Armidale Dumaresq Local Environmental Plan 2012

The Armidale Dumaresq Local Environmental Plan 2012 (Armidale Dumaresq LEP) aims to *'facilitate development for a range of business enterprises and employment opportunities*' (Clause 1.2(2)(c)). It also aims to *'to ensure that development is sensitive to both the economic and social needs of the community, including the provision of community facilities and land for public purposes,*' Clause.1.2(2)(d))

The Project Area is zoned *RU4 Primary Production Small Lots* and *SP2 Infrastructure.* The zone RU4 aims to '*encourage and promote diversity and employment opportunities in relation to primary industry enterprises; particularly those that require smaller lots or that are more intensive in nature*' whilst minimising 'conflict between land uses within this zone' (Land Use Table, zone RU4 objectives). The zone SP2 aims to 'provide for infrastructure and related uses' whilst preventing '*development that is not compatible with or that may detract from the provision of infrastructure'* (Land Use Table, zone SP2 objectives).

The Project is consistent with the objectives of the Armidale Dumaresq LEP and the objectives of land zones RU4 and SP2.

2.3.4 Armidale Dumaresq Development Control Plan 2012

The Armidale Dumaresq Development Control Plan 2012 (Armidale Dumaresq DCP) does not apply to the Project as *State Environmental Planning Policy (Planning Systems) 2021*, (Clause 2.10(a)) states:

Development control plans (whether made before or after the commencement of this Chapter) do not apply to—

(a) State significant development

2.3.5 Community Strategic Plan Armidale 2017 – 2027

The *Community Strategic Plan Armidale 2017 – 2027* is the blueprint for the future of the Armidale LGA. It was developed by the community of Armidale and represents the vision, aspirations, goals, priorities and challenges for the Armidale community.

Of relevance to the Project to help contribute to achieving the Armidale community vision are the Strategic Directions as summarised in **Table 2-2**.

Table 2-2 Armidale CSP 2017 - 2027 Goals Relevant to the Project

Armidale Strategic Directions	Project Response
Environment and Infrastructure – Community Outcome 1: The unique climate, landscape and environment of the region is protected, preserved and made accessible	The Project is consistent with the Environment and Infrastructure Strategic Direction as it assists alternative sources of power generation to reduce the Armidale community carbon footprint.
Environment and Infrastructure – Community Outcome 2: The community can participate in initiatives which contribute to a sustainable lifestyle	The Project is consistent with the Environment and Infrastructure Strategic Direction as it contributes to the renewable energy generation industry within the Armidale LGA, and provides cost-effective access to renewable energy for the local community and businesses.
Growth, Prosperity and Economic Development – Community Outcome 4: Economic development is supported through new initiatives, innovation and additional resources to assist growth of business and industry	The Project is consistent with the Growth, Prosperity and Economic Development Strategic Direction as it is anticipated to create up to 100 jobs during construction. Over the long-term, approximately 3 service and maintenance jobs will be created during Project operation. The Project will also include a community benefit sharing program.

2.4 Site Context

2.4.1 Regional Context

The Project is located within the Armidale LGA, approximately 6 km east of the township of Armidale, 141 km west of Coffs Harbour and 375 km north west of Sydney.

Major roads include Waterfall Way (Grafton Road) and the New England Highway. The Waterfall Way is adjacent to Project Area to the north and runs east-west from the Pacific Highway to the New England Highway, which is located approximately 8.4 km west of the Project Area.

There are two nearby nature reserves which are both zoned C1 National Parks and Nature Reserves under the Armidale Dumaresq LEP. This includes:

- Imbota Nature Reserve, located approximately 3 km south of the Project Area; and
- Yina Nature Reserve located approximately 4 km northeast of the Project Area.

Key regional features are shown in **Figure** 1-1.

Nearby Towns and Population Centres

The closest population centre is the township of Armidale, NSW, which has a population of 23,967 (ABS, 2021) and is located at the intersection between the New England Highway and Waterfall Way. Other key towns in the region include (ABS, 2021):

- Uralla – 23 km south (population 2,728);
- Guyra – 36 km north (population 2,003);
- Walcha – 50 km south (population 2,475);
- Glen Innes – 89 km north (population 6,219);
- Tamworth – 96 km southwest (population 33,885); and
- Inverell – 102 km northwest (population 12,057).

Residential Properties

For the purposes of this report, dwellings whose owners are hosting Project infrastructure are referred to as ‘associated’ dwellings, with all other dwellings within the relevant assessment area referred to as ‘non-associated’ dwellings.

There is one (1) associated dwelling located 92 meter (m) south of the Project Area and seven (7) non-associated dwellings within 500 m of the Project Area, as shown in **Figure 2-1**. The nearest non-associated dwelling to the the proposed battery location is located approximately 240 m to the southwest. A rural residential subdivision with various non-associated dwellings is located approximately 700 m west of the Project Area.

Nearby State Significant Projects

There are a number of proposed, approved or operational relevant future projects that are situated in proximity to the Project. Those located within 50 km of the Project are listed in **Table 2-3** and displayed in **Figure 2-2**.

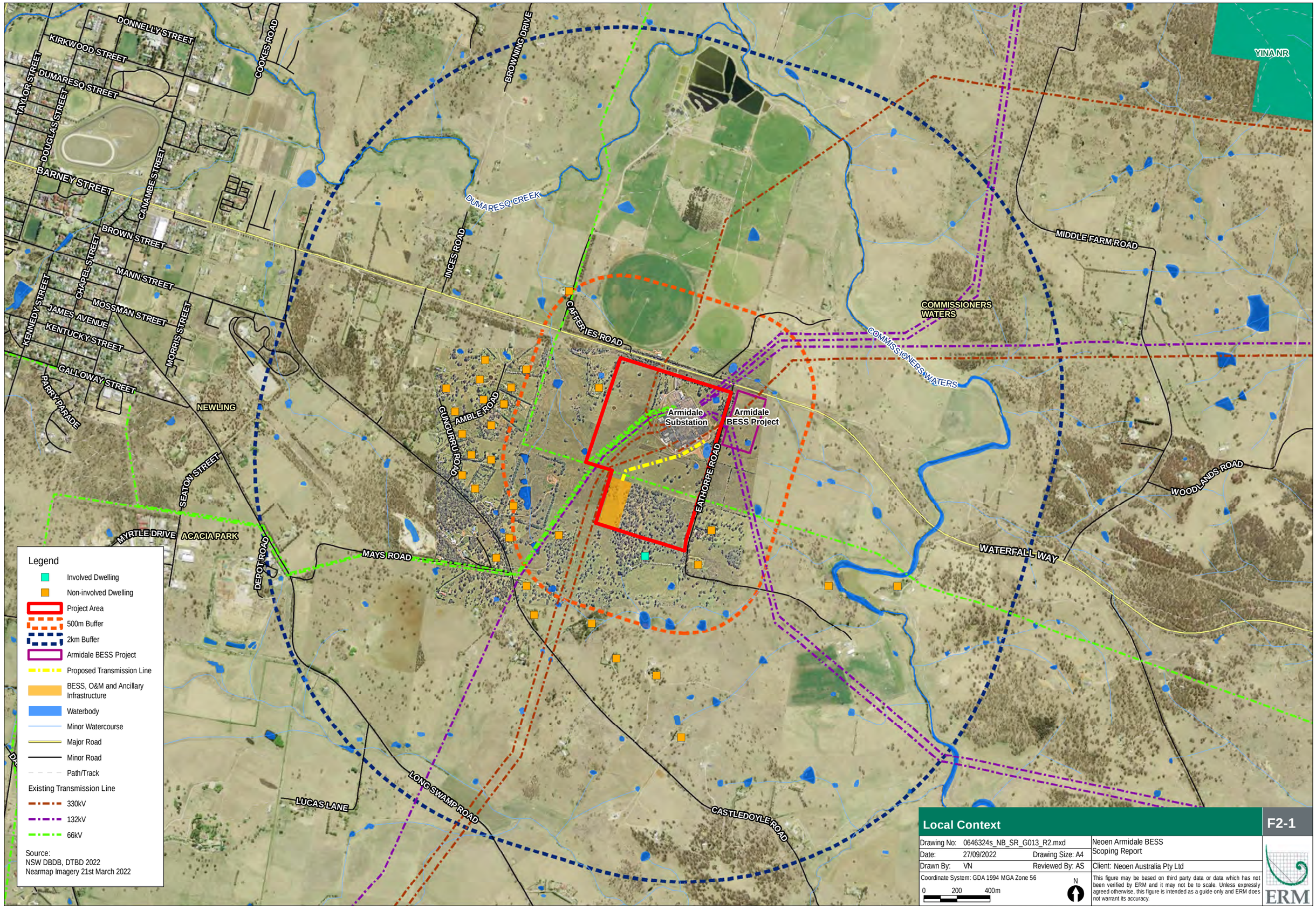
Table 2-3 State significant projects within 50 km of the proposed Project

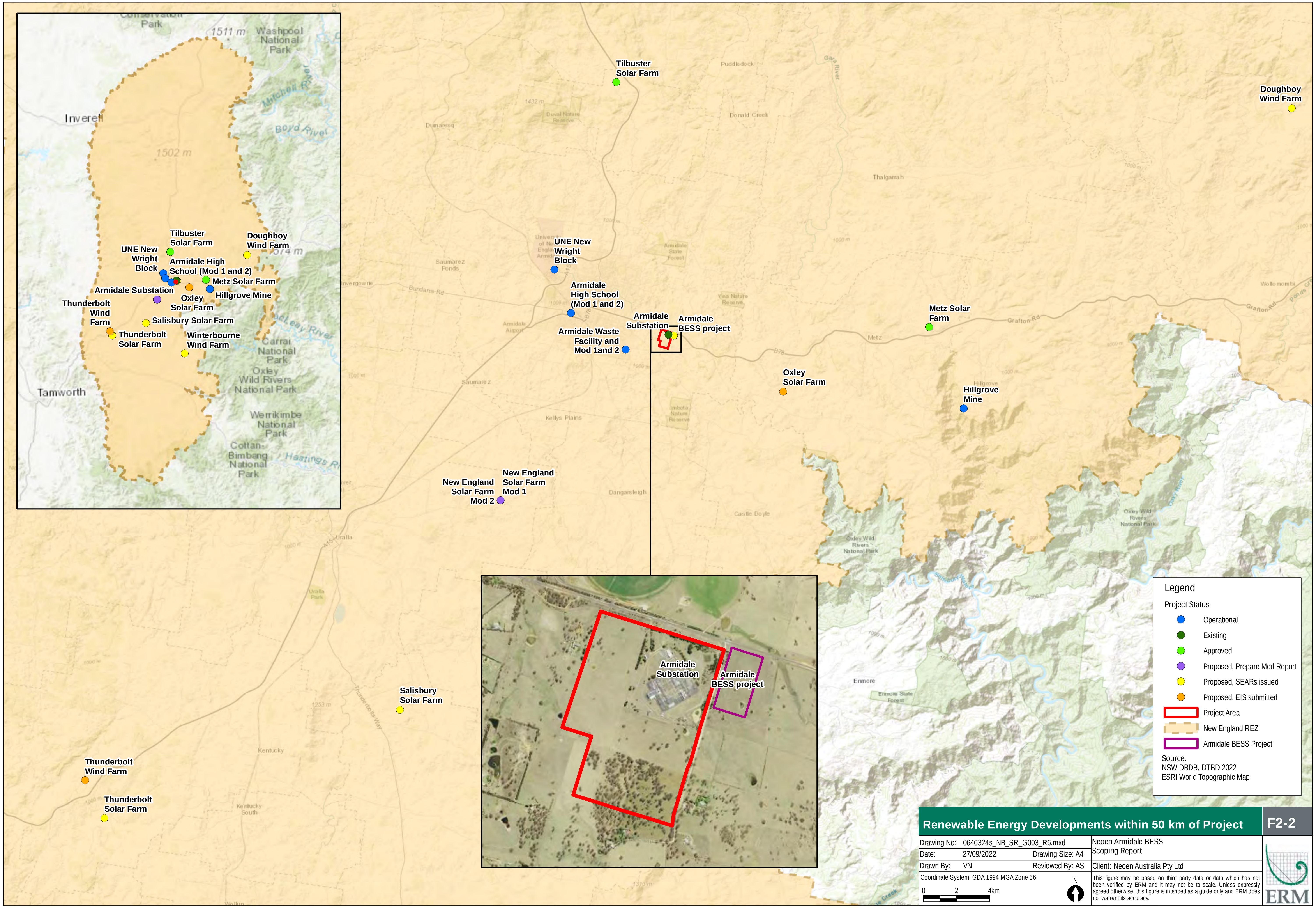
Project	Developer / Operator	Development Type		Distance to Project Area1	Status
Renewable Energy Projects					
Armidale Battery Energy Storage System Project	Maoneng Group	Electricity Generation - BESS	150 MW / 300 MWh	340 m	Proposed, SEARs issued
Oxley Solar Farm	Oxley Solar Development Pty Ltd	Electricity Generation - Solar	225 MW	9 km	Proposed, EIS submitted
New England Solar Farm and Mod 1	UPC Renewables Australia Pty Ltd	Electricity Generation – Solar	720 MW	13 km	Approved
New England Solar Farm (Mod 2)		BESS	200 MW		Proposed, Prepare Mod Report
Metz Solar Farm	Fotowatio Renewable Ventures (FRV)	Electricity Generation - Solar	115 MW	15 km	Approved
Tilbuster Solar Farm	Enerparc Australia Pty Ltd	Electricity Generation - Solar	150 MW	19 km	Approved
Salisbury Solar Farm	Energy Estate Pty Ltd and MirusWind Pty Ltd	Electricity Generation - Solar	700 MW	27 km	Proposed, SEARs issued
Winterbourne Wind Farm	Winterbourne Wind Pty Ltd	Electricity Generation - Wind	700 MW	35 km	Proposed, SEARs issued
		BESS	100 MW/ 200 MWh		
Thunderbolt Solar Farm	Neoen Australia Pty Ltd	Electricity Generation - Solar	120 MW	38 km	Proposed, SEARs issued
		BESS	400 MW		
Thunderbolt Wind Farm	Neoen Australia Pty Ltd	Electricity Generation - Wind	256 MW	41 km	Proposed, EIS submitted
Doughboy Wind Farm	Epuron	Electricity Generation - Wind	300 MW	42 km	Proposed, SEARs issued

[1] Distance measured from the Project Area boundary.

Project	Developer / Operator	Development Type	Distance to Project Area1	Status
Other State significant projects				
Armidale High School (Mod 1 and 2)	New South Wales Department of Education	Educational establishments	5.5 km	Operational
UNE New Wright Block	University of New England	Educational establishments	7.5 km	Operational
Armidale Waste Facility and Mod 1and 2	Armidale Dumaresq Council	Waste collection, treatment and disposal	7.1 km	Operational
Hillgrove Mine and Mod 1, 2, 3 and 4	Hillgrove Mine Pty Limited	Minerals Mining	18 km	Operational

* *Estimated distance*


DONNELLY STREET
KIRKWOOD STREET
DUMARESQ STREET
TAYLOR STREET
DOUGLAS STREET
BARNEY STREET
CANAMBE STREET
BROWN STREET
MANN STREET
MOSSMAN STREET
JAMES AVENUE
KENTUCKY STREET
KENNEDY STREET
CHAPEL STREET
MORRIS STREET
GALLOWAY STREET
PARRY PARADE
NEWLING
SEATON STREET
COOKES ROAD
BROWNING DRIVE
DUMARESQ CREEK
INCES ROAD
CATTERIES ROAD
AMBLE ROAD
GUNGURRU ROAD
Armidale Substation
Armidale BESS Project
EATHORPE ROAD
YINA NR
COMMISSIONERS WATERS
MIDDLE FARM ROAD
WOODLANDS ROAD
WATERFALL WAY
MYRTLE DRIVE
ACACIA PARK
DEPOT ROAD
MAYS ROAD
LONG SWAMP ROAD
LUCAS LANE
CASTLEDOYLE ROAD
Legend
Involved Dwelling
Non-involved Dwelling
Project Area
500m Buffer
2km Buffer
Armidale BESS Project
Proposed Transmission Line
BESS, O&M and Ancillary Infrastructure
Waterbody
Minor Watercourse
Major Road
Minor Road
Path/Track
Existing Transmission Line
330kV
132kV
66kV
Source:
NSW DBDB, DTBD 2022
Nearmap Imagery 21st March 2022
Local Context
F2-1
Drawing No: 0646324s_NB_SR_G013_R2.mxd
Date: 27/09/2022
Drawing Size: A4
Drawn By: VN
Reviewed By: AS
Coordinate System: GDA 1994 MGA Zone 56
0 200 400m
N
Neoen Armidale BESS Scoping Report
Client: Neoen Australia Pty Ltd
This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.
ERM



Tilbuster Solar Farm
Doughboy Wind Farm
UNE New Wright Block
Armidale High School (Mod 1 and 2)
Armidale Substation
Armidale BESS project
Armidale Waste Facility and Mod 1and 2
Metz Solar Farm
Oxley Solar Farm
Hillgrove Mine
New England Solar Farm Mod 2
New England Solar Farm Mod 1
Salisbury Solar Farm
Thunderbolt Wind Farm
Thunderbolt Solar Farm
Winterbourne Wind Farm
Inverell
Tamworth
Legend
Project Status
Operational
Existing
Approved
Proposed, Prepare Mod Report
Proposed, SEARs issued
Proposed, EIS submitted
Project Area
New England REZ
Armidale BESS Project
Source:
NSW DBDB, DTBD 2022
ESRI World Topographic Map
Coordinate System: GDA 1994 MGA Zone 56
0 2 4km
N

Renewable Energy Developments within 50 km of Project F2-2

Drawing No:	0646324s_NB_SR_G003_R6.mxd		Neoen Armidale BESS Scoping Report
Date:	27/09/2022	Drawing Size: A4	
Drawn By:	VN	Reviewed By: AS	Client: Neoen Australia Pty Ltd

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM

2.4.2 The Site

The Project Area covers a total of 8 land parcels, as identified in **Table 2-4**. The Lots 841 and 842 of DP 755808, and a Local Government Authority Road located north of the proposed battery are zoned *RU4 Primary Production Small Lots* under the Armidale Dumaresq LEP. The remaining 6 land parcels are TransGrid Land zoned *SP2 Infrastructure* under the Armidale Dumaresq LEP. The Project Area also includes Crown land Paper Roads zoned SP2 situated within TransGrid Land.

The Project Area cadastre and the areas described above are shown in **Figure 2-3**.

Table 2-4 Project Area Cadastre

Lot	DP
847	653684
841, 842, 858	755808
1, 2	999496
8	112694
1	1013556

Local Government Authority Road (unbuilt) (no Lot and DP) and paper road.

Land uses in the Armidale LGA are predominantly agricultural, including sheep and cattle grazing, as well as several National Parks, State Forests, and nature reserves. The Project Area has historically been used for agricultural purposes and is currently used for cattle grazing. Sharing and Enabling Environmental Data (SEED) mapping of NSW Landuse 2017 v1.2 (DPIE, 2020) identifies the Project Area as containing grazing modified pastures and cropping and grazing native vegetation areas.

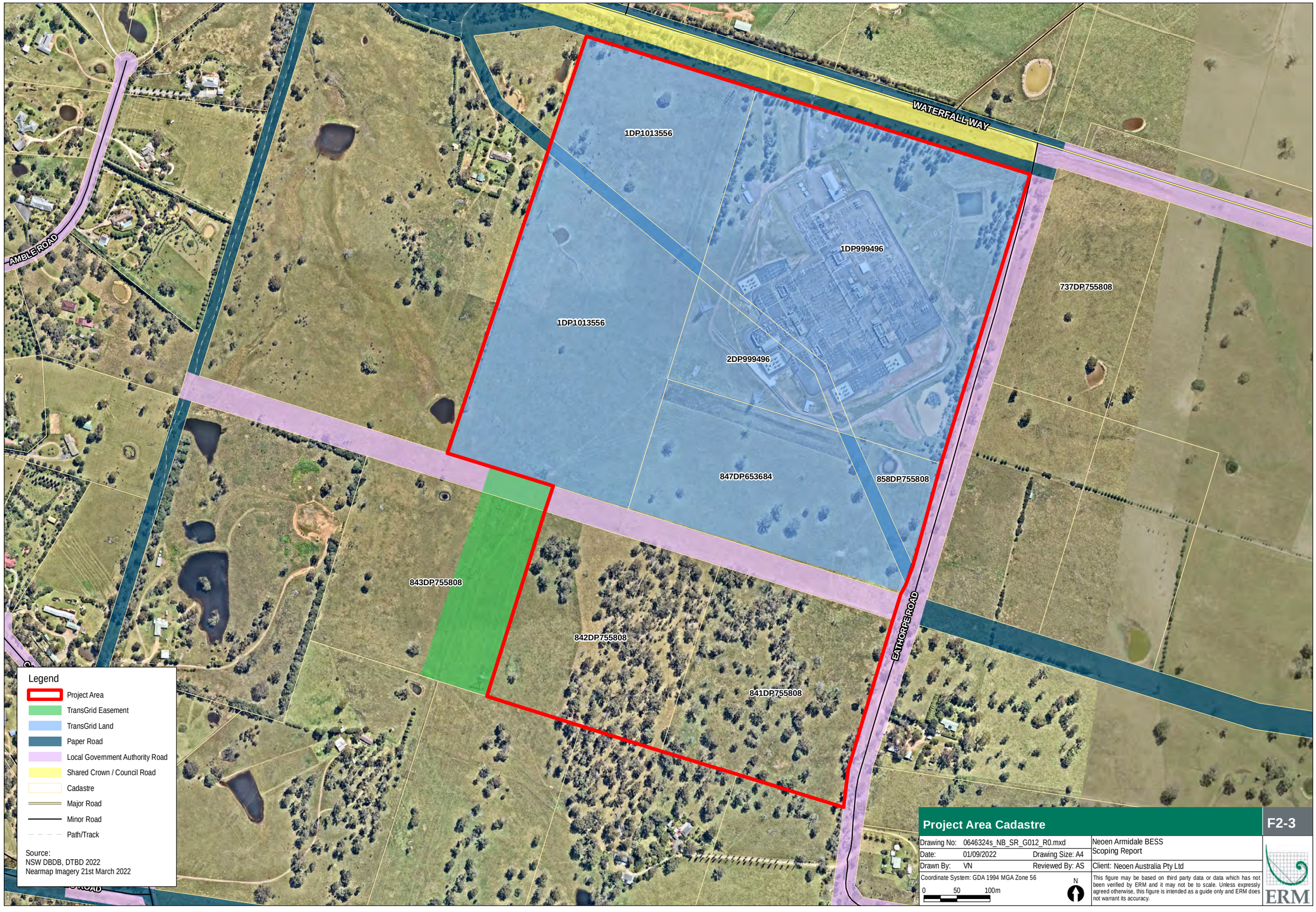
The Project Area is characterised by a predominately flat topography, with elevation ranging from 973.3 m to 1028.9 m above sea level (ASL).

The Project Area is within the Macleay Catchment, where a number of watercourses are in proximity to the Project Area, including the Commissioners Waters located approximately 900 m east of the Project.

The Soil and Land Capability Mapping data for NSW (OEH, 2012) indicates the presence of land and soil capability (LSC) Class 5 and Class 6 within the Project Area, as further discussed in **Section 6.9.1**. A search of the Australian Soil Classification (ASC) Soil Type Map of NSW (OEH, 2017) reveals that the Project Area is largely dominated by Kurosol in northern portion and Kandosol in the southern (refer **Section 6.9.1**).

TransGrid's Armidale Substation is located approximately 350 m north of the proposed battery location, connected by three transmission lines, 330 kV, 132 kV and 66 kV, also owned by TransGrid (Jacobs, 2021). Consultation is underway with TransGrid to determine details around establishing a new connection between the Project to this substation.

A search of MinView (GSNSW, 2022) determined there are no gas, or water utilities that runs directly through the Project Area. However, it was identified several transmission lines running across the Project Area from northeast to southwest, as well as a Paper Road and a Local Government Authority Road (unbuilt) within the northern portion of Project Area, as shown in **Figure 2-3**. Subject to the proposed network connection route, impacts to Crown Lands are not expected to result from the Project. No travelling stock routes are known to occur within the Project Area (Jacobs, 2021).



Project Area Cadastre

F2-3

Drawing No:	0646324s_NB_SR_G012_R0.mxd		Neoen Armidale BESS Scoping Report
Date:	01/09/2022	Drawing Size: A4	
Drawn By:	VN	Reviewed By: AS	Client: Neoen Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

0 50 100m

N

ERM

2.5 Potential Cumulative Impacts

The Cumulative Impact Assessment Guidelines for State Significant Projects (DPIE, 2021c) provides a framework for assessing and managing project-level cumulative impacts. The guideline defines six key steps in cumulative impact assessment, as detailed in **Figure 2-4.**

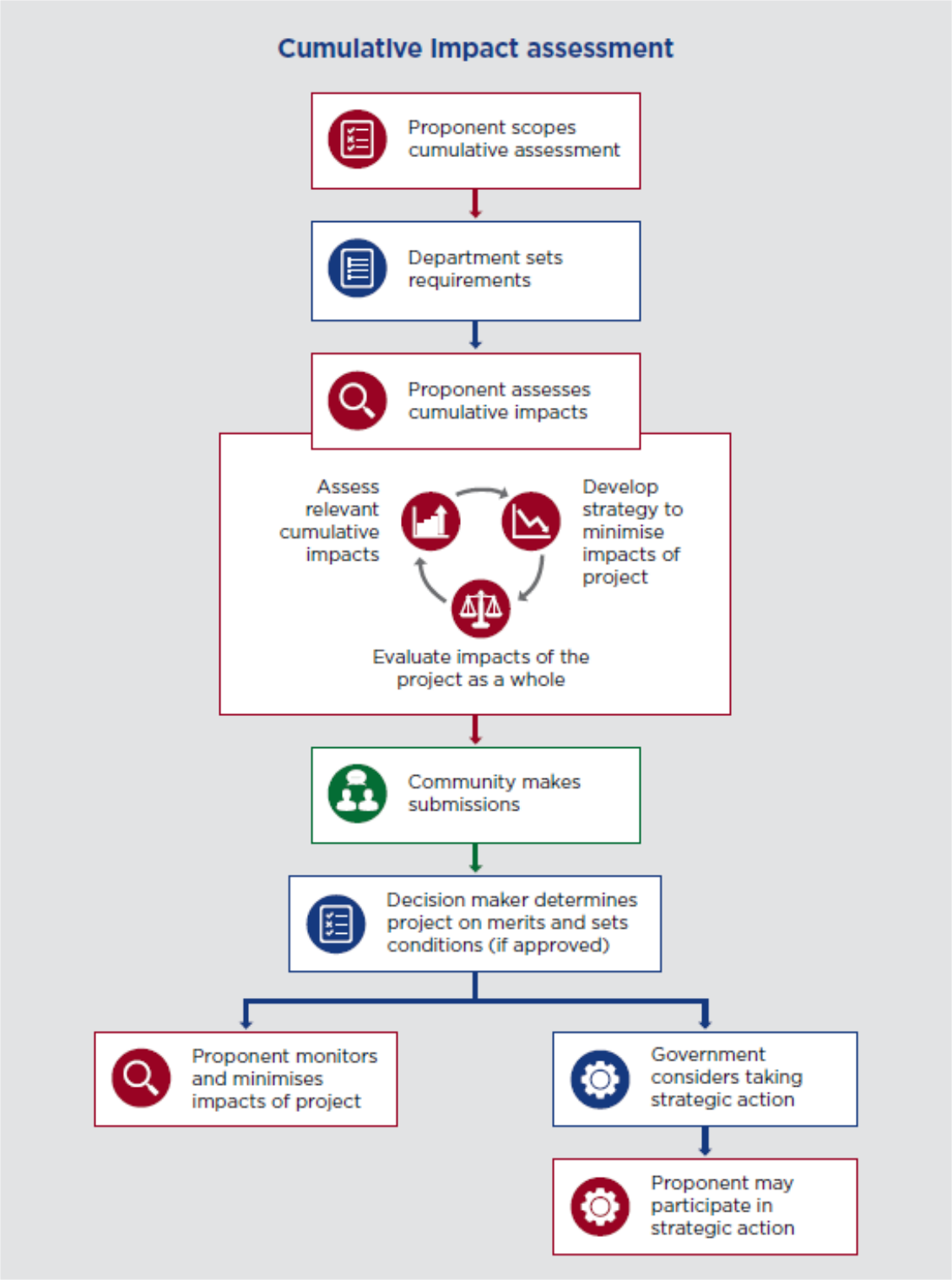


Figure 2-4 Key Steps In Cumulative Impact Assessment

Source: (DPIE, 2021c)

The cumulative impact assessment to be undertaken as part of the EIS is scoped during the Scoping Report phase, and is to include consideration of key questions as detailed in **Table 2-5.** It will also consider cumulative impacts on aspects such as traffic, amenity and social environment for all phases of the Project (refer **Table 2-6**).

Table 2-5 Scoping Cumulative Impacts – Key Questions

Considerations	Commentary
What to assess	
Government strategic planning framework for the area having regard to any relevant legislation, plans, policies or guidelines. The Project and other potentially relevant future projects that may be developed over the same time period or similar timeframes as the Project. Potentially material impacts on features including National Parks and other protected areas, environmentally sensitive areas, threatened species and ecological communities, important natural resources, culturally significant resources, key infrastructure and industries, sensitive land use zones, population centres, settlements and residential areas. The likely scale and nature of the cumulative impact of these projects.	Consideration of key legislation, plans, policies or guidelines is provided in **Section 4**. Site setting and features from a regional and local context are discussed in **Section 2**, which notes: ■ The key land uses and economic activities within the region are centred around agriculture, including sheep and cattle grazing; ■ The closest population centre is Armidale, NSW, which is located approximately 6 km to the west of the Project Area; ■ The Armidale Substation is located approximately 350 m north of the proposed battery; ■ There are a number of proposed, approved or operational renewable energy projects located in proximity to the Project Area and the broader New England Region as detailed in **Section 2**; and ■ There is potential for the impacts of these proposed projects to combine with the potential visual and environmental impacts of the Project, generating cumulative impacts that are greater than the impact of each project individually.
What study area	
Study area selected for the cumulative impact assessment of each matter will vary depending on the specific characteristics of the assessment matter and the scale and nature of the potential impacts on the matter resulting from the project with other relevant future projects.	The study area for matter subject to cumulative assessment will be guided by the relevant technical assessments and locality features. Cumulative visual impacts for example will include a buffer around the proposed utility scale battery energy storage system and is subject to further assessment during the EIS phase, including consideration of topography and vegetation features.
Over what time period	
Like the study area, the time period selected for the cumulative impact assessment on each matter will vary depending on the characteristics of the matter and the scale and nature of the potential impacts on the matter. In most cases, the period selected is likely to match the life of the project (e.g., 20 years). However, in some cases the period selected may be much shorter than this and cover a single phase of the project, or much longer.	The proposed timeframe for the development of the Project is: ■ Planning and Approvals: EIS submission aimed for Q1 2023; ■ Construction: from 2025; and ■ Commissioning and Operation: from 2026 (25 years). Various levels of cumulative impacts may occur during the various Project phases, as detailed in **Table 2-6**.
What projects to include	
Build upon past and current operating project assessments by considering the cumulative impacts of the proposed project on key matters when other future proposed projects are included in the assessment.	There are a number of proposed, approved or operational future projects located in proximity to the Project Area and the broader New England Region as detailed in **Table 2-3:** ■ New England Solar Farm (Including Mod 1), Metz Solar Farm and Tilbuster Solar Farm (all approved); ■ Armidale Battery Energy Storage System, Oxley Solar Farm, New England Solar Farm Mod 2, Salisbury Solar

Considerations	Commentary
	Farm, Winterbourne Wind Farm, Thunderbolt Wind Farm and Doughboy Wind Farm (all proposed); and ■ Armidale High School (including Mod 1 and 2), UNE New Wright Block, Armidale Waste Facility (including Mod 1and 2), and Hillgrove Mine (including Mod 1, 2, 3 and 4) (all approved and operational). Given the location, as well as construction and operational timeline of the projects outlined above, it is expected cumulative impacts will be created. **Appendix C** summarises the likely cumulative impacts of the Project combined with other relevant future projects in the area.

Table 2-6 Cumulative Impacts and Timeframes

Project Phase	Estimated Timeframe	Likely Scale of Impact	Duration of Impact	Potential Cumulative Impacts
Assessment	2023	Minor	Temporary	Social – community health and wellbeing
Approval	2024	Minor	Temporary	Social – community health and wellbeing
Construction	2025 – 2026	Moderate to Major	Temporary	Social – community health and wellbeing Amenity – visual Amenity – noise Transport and traffic Other environmental (biodiversity)
Operation	2026 - 27 – 2046 - 47	Minor	Ongoing during operations	Amenity – visual
Decommissioning	Post 2047	Moderate	Temporary	Social – community health and wellbeing Amenity – visual Amenity – noise Transport and traffic

They may also be cumulative benefits to local communities from the Project, through the creation of new employment opportunities and through contribution to the local and regional economies.

Consideration of cumulative impact is provided in the Scoping Summary Table (**Appendix A**). A cumulative assessment will be undertaken as a component of the EIS in accordance with the Cumulative Impact Assessment Guidelines for State Significant Projects (DPIE, 2021c). **Appendix C** provides a summary of the cumulative impacts to be assessed.

2.6 Agreements with Other Parties

2.6.1 Landowner Agreement

The area where the proposed utility scale battery energy storage system will be located would be leased from the landowner for the length of the development, through a lease of premises, subject to the limits in place at the time of commissioning, or via a long-term lease.

If subdivision of Lot 842 DP 755808 (where the battery infrastructure will be located) is required, this subdivision will be requested under the SSD application to excise the development footprint for the Project from the remainder of the land parcel, which will continue to be utilised for agricultural purposes.

2.6.2 Other Agreement

Neoen has not entered into any agreements at this point in time with other parties to offset or mitigate the impacts of the Project such as voluntary planning agreements or benefit-sharing schemes.

3. THE PROJECT

This section provides a description of the Project and its indicative design, layout and features. The Project Area and surrounding area are also described, expanding on information from **Section 1.1**.

3.1 Project Area

The Project Area extends across an area of approximately 65.6 hectares (ha) at 112 Eathorpe Road, Armidale, NSW. Under the Armidale Dumaresq LEP, the southern portion of the Project Area is zoned as *RU4 Primary Production Small Lots* covering two land parcels and a Local Government Authority Road (unbuilt). The northern portion is zoned *SP2 Infrastructure* covering the remaining six land parcels and Crown Land Paper Roads, as described in **Section 1.1**.

The Project Area is defined as the area of land corresponding to property boundaries on which the Project is located. It includes the proposed battery and ancillary infrastructure location allotment, existing Crown Land Paper Road, unnamed Local Government Authority Road easement and the existing TransGrid Armidale Substation lots (refer **Figure 2-3**). The proposed footprint of the battery, O&M and associated ancillary infrastructure is approximately 3.6 ha.

3.2 Conceptual Project Description and Layout

The Project involves the construction, operation and decommissioning of a utility scale battery energy storage system and associated infrastructure. The proposed operational capacity is up to approximately 100 MW / 200 MWh.

The Project will include the following key components:

- Preparation of site, including benching and earthing, with access to the Project from Eathorpe Road (access point to be determined during the EIS phase following the outcomes of further environmental assessments);
- Battery manufacturer is yet to be determined; however, it may consist of modular lithium-ion type batteries, to be housed in either climate-controlled shipping container style buildings or outdoor cabinets;
- Electrical inverters;
- MV and HV transformers;
- HVAC units and ventilation;
- Extension of a busbar at an existing substation;
- Ancillary infrastructure and activities including:
    - Control room and electrical switch room;
    - Associated control systems;
    - Communications infrastructure;
    - Car parking;
    - Benching and earthing;
    - An O&M facility and storage sheds/spare parts room;

- Underground cabling and above-ground cabling;
- Temporary construction compound and site laydown areas;
- Fire-fighting equipment including water tank/s;
- Security fencing, security lighting, security devices;
- Noise walls, landscaping and screening vegetation.

The conceptual Project layout is detailed in **Figure 3-1**. This includes indicative areas of disturbance associated with the siting of the battery and associated ancillary infrastructure and transmission line.

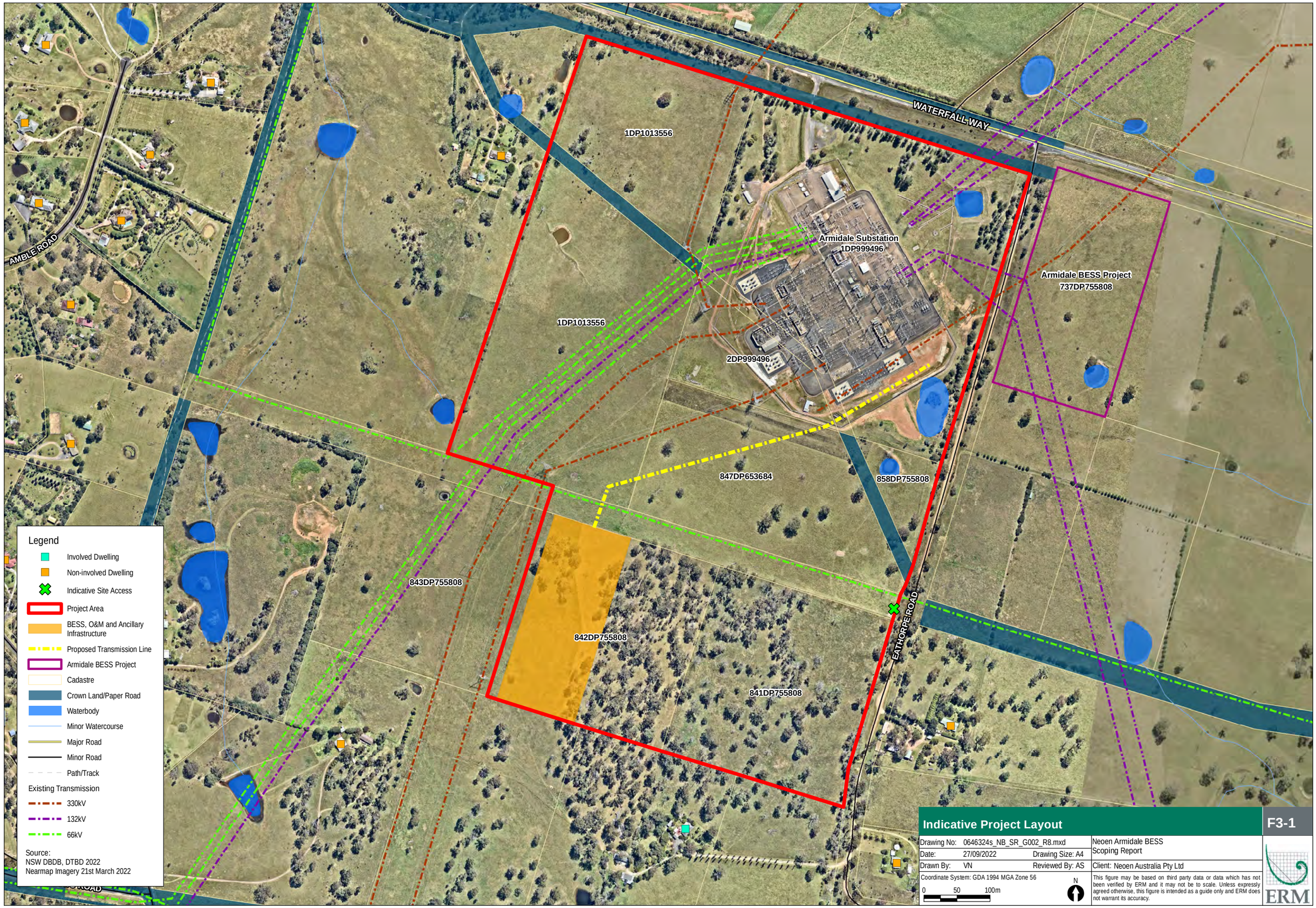
The indicative layout presented in this Scoping Report includes consideration of the outcomes of a Preliminary Constraints Assessment completed in 2021 (Jacobs, 2021) and a Preliminary Biodiversity Assessment and field survey undertaken in June 2022 (ERM, 2022) (refer **Appendix D)**. The constraints identified in the assessments included:

- Biodiversity: the Preliminary Biodiversity Assessment (ERM, 2022) identified two native Plant Community Types (PCT), hollow bearing trees and one Critically Endangered threatened ecological community (TEC) recorded adjacent to Eathorpe Road (refer Table 4-1 of **Appendix D**). The PCT 704 located within the Eathorpe Road reserve meets the requirements of the critically endangered White Box Yellow Box Blakely's Red Gum Woodland TEC. The PCT 567 as well as the scattered eucalypt trees provide potential foraging and breeding habitat for Koala. The current and ongoing design and layout changes will seek to avoid areas of high biodiversity constraint, to reduce impacts to the critically endangered TEC associated with PCT 704. It also seeks to minimise impacts to PCT 567 and reduce impacts to Koala habitat and areas of native vegetation.

The EIS and associated technical assessments will further evaluate identified constraints to facilitate further layout design changes and refinements in response to identified values and constraints, as well as strategies to minimise and mitigate impacts.

The transport route of the battery components and associated ancillary infrastructure are subject to further assessment in the EIS. Proposed access to the Project Area is along Waterfall Way and Eathorpe Road.

Access to the Project Area off Eathorpe Road is to be determined during the EIS phase following the outcomes of further environmental assessments, with proposed access via an existing unnamed Local Government Authority Road easement to be further investigated (refer **Figure 3-1**).


WATERFALL WAY
AMBLE ROAD
EATHORPE ROAD
1DP1013556
1DP1013556
Armidale Substation
1DP999496
Armidale BESS Project
737DP755808
2DP999496
847DP653684
858DP755808
843DP755808
842DP755808
841DP755808
Legend
Involved Dwelling
Non-involved Dwelling
Indicative Site Access
Project Area
BESS, O&M and Ancillary Infrastructure
Proposed Transmission Line
Armidale BESS Project
Cadastre
Crown Land/Paper Road
Waterbody
Minor Watercourse
Major Road
Minor Road
Path/Track
Existing Transmission
330kV
132kV
66kV
Source:
NSW DBDB, DTBD 2022
Nearmap Imagery 21st March 2022
Indicative Project Layout
F3-1
Drawing No: 0646324s_NB_SR_G002_R8.mxd
Date: 27/09/2022
Drawing Size: A4
Drawn By: VN
Reviewed By: AS
Coordinate System: GDA 1994 MGA Zone 56
0 50 100m
N
Neoen Armidale BESS
Scoping Report
Client: Neoen Australia Pty Ltd
This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.
ERM

3.3 Development Footprint

Due to the early stage of design development, the Project footprint is indicative only and will be subject to further refinement during the EIS phase.

Figure 3-1 shows the indicative location of Project infrastructure and disturbance footprints.

The Permanent Development Footprint is the area of land that will be subject to permanent alteration as a result of installation and operation of Project infrastructure until the Project is decommissioned at its end of life. The Permanent Development Footprint may comprise:

- Structures housing battery cells, electrical inverters, transformers, underground and above-ground cablings, control room and electrical switch room, transmission network, associated control systems, communications infrastructure, HVAC units and ventilation, water tanks, extended busbar at existing substation and other ancillary infrastructure;
- Permanent operations buildings, including O&M facility, storage sheds/spare parts and car parking;
- Permanent access road/s and road upgrades;
- Noise walls, landscaping and screening vegetation; and
- Security fencing and lighting.

Temporary Development Footprint (the area of land that will be temporarily disturbed during construction of the Project and rehabilitated following construction) will comprise of:

- Access road for construction; and
- Benching and earthing, temporary construction compound, site laydown and assembly areas.

The impact assessment to be included in the EIS will consider both the Temporary Development Footprint and the Permanent Development Footprint, noting the temporary impacted areas will be rehabilitated at completion of construction.

3.4 Project Staging

The indicative staging of the Project is summarised in **Table 3-1**.

Table 3-1 Project Staging

Stage of Project	Estimated Date of Completion
Site Selection	Completed in 2020
Project Feasibility	Completed in 2021
Planning and Approvals Process	In progress – Commenced in 2022 with the EIS submission aimed for Q1 2023
Construction	Planned to commence in 2025
Commissioning and Operations	Planned to commence in 2026

As is typical for projects of this scale and nature, construction and operation could be undertaken in stages. The Applicant is seeking flexibility to construct the Project in stages, if required.

3.5 Phases

3.5.1 Construction

Construction of the Project is anticipated to commence in 2025 with design and procurement activities leading into early stage construction activities starting in 2025. All on-site construction activities are estimated to take approximately 12-18 months to complete, this includes commissioning of the Project. During the construction phase of the Project, a peak workforce of up to 100 full time equivalent (FTE) employees will be required.

Construction activities will be undertaken during standard hours for construction works (i.e., 7 am to 6 pm Monday to Friday and from 8 am to 1 pm on Saturdays, no construction would occur on Sundays or Public Holidays). Any construction or commissioning activities outside of these standard working hours would require approval from relevant authorities.

3.5.2 Operations

The operational life for the utility scale battery energy storage system is anticipated to be 20 years. Proposed operational hours will be 24 hours, 7 days a week. During the operation of the battery no workforce is permanently required on site, as the battery system is designed to function remotely without intervention.

The vast majority of maintenance to be undertaken will be preventative maintenance. The workforce required periodically for maintenance activities for the Project during operations will be equivalent to 3 FTE.

3.5.3 Decommissioning and Rehabilitation or Repowering

The EIS will discuss the potential options associated with the decommissioning of the Project upon completion of operations.

At the end of the operational life of the Project, the site could be formally decommissioned. A decision will be made at this point whether to upgrade or replace the existing infrastructure, subject to technological improvements, or to remove the utility scale battery energy storage system and rehabilitate the site.

This process of decommissioning will be undertaken in accordance with the relevant legal requirements, regulations and conditions of approval.

3.6 Project Alternatives

Alternatives to the Project have been explored, including site locations, site layout and the ‘do nothing’ approach for the Project.

3.6.1 Do Nothing

The ‘do nothing’ scenario would allow for continued use of the Project Area for agricultural and farming purposes by the landowner. However, it would also lead to a missed opportunity in increasing energy security and contributing to Commonwealth and State level goals and strategies to mitigate the effect of climate change, by supplying reliable energy storage and demand management.

Additionally, the local area and wider region would not benefit from the Project outcomes as described in **Section 2.1.1**, that includes:

- Economic benefits to the local and regional community, provided by direct and indirect employment associated with the construction and operation works. The Project would generate up to 100 FTE construction jobs during peak construction and approximately 3 FTE operational jobs for life of the Project;

- Local community benefits through the implementation of a Community Benefit Sharing Program that will provide direct and targeted local benefits;
- Economic benefit to local manufacturers and suppliers, through opportunities to provide plant and equipment to the Project during construction and operation phases; and
- Stimulus of the service sector of the region during Project construction, supporting local communities.

The Project is at scale potentially adding significant amounts of renewable energy supply over a 20-year period. The proposed utility scale battery energy storage system will support the market to deliver reliable electricity at the lowest price, and reducing energy costs.

Neoen is a long-term owner and operator of renewable assets. This long-term approach means that community partnership is vital in Neoen's approach to the development, construction and operation of its assets.

3.6.2 Alternative Site Layout Options

The indicative site layout proposed in this Scoping Report has been determined on the basis of the existing TransGrid transmission line and substation, and preliminary studies.

As discussed in **Section 3.2**, the preliminary layout, whilst indicative, has considered the preliminary constraints assessments completed in 2021 and 2022. Key constraints included:

- Biodiversity: including areas containing one PCT associated with a critically endangered TEC, one PCT associated with a koala habitat, and identified hollow bearing trees; and
- Noise: receptors were identified in the vicinities of the Project that may be impacted by the construction and operation phases. Mitigation measures adopted on design and layout to minimise noise impacts include buffer distances and land use planning, noise control at the source and along the sound-transmission path, and noise control at the receptor.

The preliminary layout presented in this Scoping Report includes consideration of the outcomes of the preliminary constraints assessment, and has located infrastructure to minimise impacts to these aspects.

3.6.3 Alternative Site Location

The Project Area is identified as a highly suitable site for the proposed utility scale battery energy storage system development as identified in **Section 1.1**.

During the site selection process for the Project, various criteria were considered, including:

- Proximity and access to existing substation;
- Accessibility to the site via a major road;
- An area that would avoid the need to remove native vegetation or impact on other environmental values;
- A flat site that would require minimal earthworks / soil disturbance;
- A site not subject to flooding or bushfire impacts;
- Minimal impact on surrounding privately or publicly owned land; and
- Minimal environmental impacts.

The Applicant considered several alternative sites that did not meet these criteria. The site location for the Project was selected as it ranked highest in each of these criteria.

4. STATUTORY CONTEXT

This section outlines the key statutory requirements for the Project under the *Environmental Planning and Assessment Act 1979* and other relevant NSW and Commonwealth legislation with regard to the *State Significant Development Guidelines – Preparing a Scoping Report* (DPIE, 2021a).

Relevant statutory requirements for the Project will be outlined in further detail within the EIS.

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 State Significant Development (SSD). Clause 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.*

Relevant SEPPs include *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP) and *State Environmental Planning Policy (Transport and Infrastructure) 2007* (Transport and Infrastructure SEPP).

Clause 2.35 of the Transport and Infrastructure SEPP defines electricity generating works as:

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

The Project has the purpose of electricity storage; thus it meets the definition of 'electricity generating works'.

Under the provisions of Clause 2.6 (1) of the Planning Systems SEPP, a development is classified as SSD if:

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

Schedule 1, Clause 20 of the Planning Systems SEPP determines 'electricity generating works' to be SSD if it meets the following criteria:

> *Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that:*
>
> *(a) has a capital investment value of more than $30 million, or*
>
> *(b) has a capital investment value of more than $10 million and is located in an environmentally sensitive area of State significance.*

The Project involves development for the purpose of electricity storage (as defined under Clause 2.35 of the Transport and Infrastructure SEPP) which will have a capital investment value of more than $30 million.

Therefore, the Project is classified as SSD under Part 4 of the EP&A Act.

4.2 Permissibility

The permissibility of the Project is determined by Transport and Infrastructure SEPP**.**

Clause 2.36 (1)(b) of the Transport and Infrastructure SEPP provides for electricity generating works to be carried out on any land in a prescribed rural, industrial or special use zone with development consent.

A prescribed rural, industrial or special use zone is defined in Clause 2.35 of the Transport and Infrastructure SEPP and includes the following land use zones: RU1 Primary Production, RU2 Rural Landscape, RU3 Forestry, RU4 Primary Production Small Lots, IN1 General Industrial, IN2 Light Industrial, IN3 Heavy Industrial, IN4 Working Waterfront, SP1 Special Activities and SP2 Infrastructure.

The Project is proposed on land zoned *RU4 Primary Production Small Lots* and *SP2 Infrastructure* under the Armidale Dumaresq LEP, and as such, the Project is permissible with consent.

4.3 Other Approvals

Other approvals required under relevant NSW and Commonwealth legislation (or which would be required if not for the classification of the Project as SSD) are detailed in **Table 4-1.**

Table 4-1 Other Approvals required under NSW and Commonwealth Legislation

Approval Category	Legislation	Requirement
Consistent Approvals Section 4.42 of the EP&A Act outlines that these approvals cannot be refused if necessary for carrying out an approved SSD and are to be consistent with the terms of the SSD approval.	*Roads Act 1993*	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, including access off Eathorpe Road will be assessed within the EIS.
	Protection of the Environment Operations Act 1997 (POEO Act)	Schedule 1 of the POEO Act lists scheduled activities that require an environment protection licence. Schedule 1 does not list energy storage as a scheduled activity, and as such, an EPL will not be required for the Project.
Native Title	*Native Title Act 1993*	Under Section 13 of the NT Act, an individual can apply to the Federal Court for a determination of native title. A review of the potential for native title will be undertaken for the Project in the EIS; however, the Native Title Vision (NTV) online mapping tool (NNTT, 2022) currently indicates there are no Native Title claims over the Project Area.
EPBC Act Approval	*Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)	Approval from the Minister for the Environment and Water 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). The findings of the Preliminary Biodiversity Assessment confirmed the presence of one critically endangered TEC listed under the EPBC Act adjacent to Eathorpe Road. Within the Project Area was also identified koala habitat areas associated with vegetation, which provides potential foraging and breeding habitat for this species. As such, if impacts to TEC and Koala habitat cannot be avoided and minimised, a referral under the EPBC Act is proposed.

Approval Category	Legislation	Requirement
Other Approvals	*Water Management Act 2000*	The EIS will assess whether the Project will require water access licences under the *Water Management Act 2000* associated with water use during construction
	Biodiversity Conservation Act 2016	The Biodiversity Development Assessment Report (BDAR) will be prepared to accompany the EIS, which will provide a discussion of the management and protection of listed threatened species of native flora and fauna and TECs and assess biodiversity offsets consistent with the Biodiversity Offset Scheme. Given the Project is SSD, entry into the Biodiversity Offset Scheme is automatically triggered.
Approvals not required under SSD Section 4.41 of the EP&A Act states the following approvals, permits etc. are not required for an approved SSD.	*Fisheries Management Act 1994*	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.
	Heritage Act 1977	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.
	National Parks and Wildlife Act 1979	The Project will not require an Aboriginal heritage impact permit under Section 90.
	Rural Fires Act 1997	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.
	Water Management Act 2000	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.

4.4 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** below.

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: *(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,* *(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,* *(c) to promote the orderly and economic use and development of land,* *(d) to promote the delivery and maintenance of affordable housing,* *(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,* *(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),* *(g) to promote good design and amenity of the built environment,* *(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,* *(i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,* *(j) to provide increased opportunity for community participation in environmental planning and assessment.*
Section 4.15 - Evaluation	Pursuant to 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 environmental planning instruments including: – State Environmental Planning Policy (Planning Systems) 2021; – State Environmental Planning Policy (Transport and Infrastructure) 2021; and – Armidale Dumaresq Local Environmental Plan 2012. ■ Relevant development control plans including: – Armidale Dumaresq Development Control Plan 2012. ■ 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 other legislation	
Biodiversity Conservation Act 2016 – Section 7.14	The Minister for Planning and Homes is required to take into account the impact of the development on biodiversity values as assessed in the BDAR. The Minister may (but is not required to) further consider under the Act the likely impact of the proposed development on biodiversity values.
Considerations under relevant EPIs	
State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP)	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 Clause 3.7 of the Resilience and Hazards SEPP, consideration will be given to current circulars or guidelines published by the Department of Planning relating to hazardous or offensive development, including: ■ Hazardous Industry Planning Advisory Paper No 3 – Risk Assessment ■ Hazardous Industry Planning Advisory Paper No 12 – Hazards The EIS will include a Preliminary Hazard Analysis.

Statutory Reference	Mandatory Consideration
	Under Clause 4.6 of the Resilience and Hazards SEPP, a consent authority is required to consider whether a proposed development site is affected by soil or other contaminants before granting consent. An assessment will be prepared as part of the EIS to determine the potential contamination risk associated with the Project. Noting the agricultural land use across the Project Area, the assessment will take into consideration historical land use that may have resulted in contamination within and surrounding the Project Area.
Armidale Dumaresq Local Environmental Plan 2012	The EIS will address relevant components of the LEP, including: ■ Clause 1.2 – Aims of Plan ■ Land Use Table - Objectives and permissible uses of the *RU4 Primary Production Small Lots* zone and *SP2 Infrastructure.*
Considerations under Development Control Plans	
Armidale Dumaresq Development Control Plan 2012	The Armidale Dumaresq DCP is the relevant DCP that supports the controls contained within the Armidale Dumaresq LEP under the provisions of Division 3.6 of the EP&A Act. Under Clause 2.10 of the Planning Systems SEPP, DCPs do not apply to SSD projects: *11 Exclusion of application of development control plans* *Development control plans (whether made before or after the commencement of this Policy) do not apply to—* *(a) State significant development, or* *(b) development for which a relevant council is the consent authority under section 4.37 of the Act.* The Project will be classified as SSD. As such, the Armidale Dumaresq DCP does not apply and is not a mandatory consideration for the Project.

5. COMMUNITY ENGAGEMENT

5.1 Community and Stakeholder Engagement Strategy

Community and stakeholder engagement will be managed in accordance with the Eathorpe Battery Community Engagement Plan (CEP) that has been prepared by Neoen to support the Project (**Appendix B**). The CEP documents the communications and consultation framework and activities that Neoen will undertake throughout the Project approvals phase. This plan is intended to establish proactive communication and engagement by involving, collaborating with, and empowering the stakeholders in the community about the Project. Additionally, this plan will ensure that their concerns or issues are clearly understood and addressed to the extent possible.

The CEP has been prepared to align with:

- The principles of the 'International Association for Public Participation (IAP2) Spectrum Model'; and
- Undertaking Engagement Guidelines for State Significant Projects' (DPIE, 2021d).

5.1.1 Objectives

The objectives of the CEP and consultation throughout the Project are to:

- Provide clear and concise information about the Project and its impacts;
- Implement activities that encourage and facilitate participation; and
- Report back on what was heard, what has or has not changed, and why.

5.2 Scoping Phase Engagement

The CEP(**Appendix B**) has been designed to enable community members to be part of the Project planning and development process and to provide them with the opportunity to engage in a meaningful way.

Stakeholder identification was undertaken in the CEP (Detailed stakeholder map of **Appendix B**) of as part of the scoping phase for the Project, which resulted in the following list of key stakeholders:

- Host Landowners;
- First Nations communities;
- Armidale Regional Council;
- Nearby neighbours up to approximately 1 km distance from the Project Area;
- State Members of Parliament;
- Federal Members of Parliament;
- NSW Rural Fire Service (RFS);
- Armidale Neighbourhood (defined in the CEP as local people living within the Armidale LGA within proximity to the Project);
- Local schools, TAFEs and Universities;
- Business groups / industry stakeholders;
- Advocacy groups; and
- Community organisations.

A variety of methods have been or will be implemented to facilitate community and stakeholder engagement to ensure that the unique requirements of each stakeholder group are being met. Consultation materials distributed to stakeholders to date are provided in the appendices of the CEP.

Consultation methods will continue to be updated by Neoen throughout each phase of the Project, as new stakeholders are identified, or as key contacts for stakeholder groups change.

Key consultation methods may include:

- One on one briefings and meetings;
- Community drop-in sessions;
- Community events;
- Community introductory letter, information booklet and flyer;
- Bulletins and newsletters;
- Media release;
- Fact sheets;
- Feedback surveys: Eathorpe Battery - Community Survey (surveymonkey.com);
- Project website: Eathorpe Battery - Grid Stability for NSW;
- Phone calls and emails; and
- Community information phone line.

5.2.1 Government Agency and Key Stakeholders

Details of consultation undertaken with government agencies and key stakeholders during the scoping phase is outlined in **Table 5-1**.

Table 5-1 Summary of Consultation Events – Government

Stakeholder	Date / Type	Consultation Activity and Key Outcomes
TransGrid	May 2022 Enquiry	On 29 June 2022 TransGrid confirmed that there is capacity to connect the Project to the transmission network. Neoen has since been engaging with TransGrid regarding property access to build a high-voltage power line from the battery to the Armidale substation.
New England Community College	May 2022	Letter to introduce the Project and the company, and to request to hire a room at the college for the upcoming community drop-in session.
State and Federal Members of Parliament (MP)	9 June 2022 Letter (email)	Letter to introduce the Project, the upcoming community drop-in session and the feedback survey.
Armidale Regional Council	9 June 2022 Letter (email)	Letter to introduce the Project and the company, it also informed on the upcoming community drop-in session and the feedback survey.
New England RFS	16 June 2022 Letter (email)	Letter to introduce the Project and the company, it also informed on the upcoming community drop-in session and the feedback survey.
Armidale Local Aboriginal Land Council	21 June 2022 Letter (email)	Letter to introduce the Project and the company, it also informed on the upcoming community drop-in session and the feedback survey.

Stakeholder	Date / Type	Consultation Activity and Key Outcomes
DPE	13 July 2022 Meeting	Scoping meeting outlining: ■ The proposed development footprint with two possible locations; ■ The proposed Project access; ■ The Winter biodiversity survey undertaken in June 2022; ■ Summary of the community consultation undertaken to date.
New England RFS	26 July 2022 In person meeting	In person meeting at the Armidale RFS office about the Project, the company, including the planning process and estimated timeframes. NSW RFS informed Neoen that NSW Fire & Rescue are other possible first responders to a fire event and should be engaged.
Adam Marshall MP	26 July 2022 In person meeting	A Project information booklet was provided to Mr. Marshall, containing an overview of the project location, size and estimated planning timelines was discussed.
Armidale Regional Council	26 July 2022 In-person meeting	In person presentation to Council staff members about the Project, including an overview of the project location, size, overview of the planning process, and information on community consultation undertaken to date. It was also discussed utilising an unnamed Council-owned Road as access road for the project during construction and operation.
Armidale Business Chamber	18 August 2022 Letter (email)	Letter to introduce the Project and the company, it also informed on the upcoming community drop-in session and the feedback survey.

A summary of the key issues identified by government agencies and other key stakeholders during consultation is summarised in **Table 5-2.**

Table 5-2 Government Agency and Key Stakeholder Key Issues Summary

Topic	Feedback Received
Biodiversity	NSW DPE considers biodiversity to be a key issue due to the amount of possible native vegetation clearing.

5.2.2 Community Engagement

Details of consultation undertaken with the community during the scoping phase is outlined in **Table 5-3.**

Table 5-3 Summary of Consultation Events - Community

Stakeholder	Date and Type	Purpose and Outcomes
Surrounding landholders, community members and host landholder	30 June 2022 Community information session	Provided Project updates and inform Social Impact Assessment scoping; Identified preferred locations for the battery and understand initial Project issues and concerns.
Surrounding landholders	In person meeting 1 June 2022	One-on-one meetings were held with two neighbours who live on Eathorpe Rd. The purpose of the meetings was to introduce Neoen, and the Project, including an overview of the project location, size, overview of the planning process, and information on community benefits. The meetings also provided the neighbours with an opportunity to share their feedback, any concerns and ask questions about the Project.

Stakeholder	Date and Type	Purpose and Outcomes
Neighbours within approximately 1 km of the Project	Post Mail June 2022	Introductory letter, information booklet and flyer were mailed to 44 neighbours within approximately 1 km of the Project, prior to the community drop-in session.
First Nations community members	Phone call and Email June 2022	The First Nations stakeholders Neoen engaged with expressed interest in becoming a Registered Aboriginal Party (RAP) for the Project.
Community feedback survey	From June 2022 online and hard copy survey	Hard copies of the survey were provided to the community at the drop-in session and during one-on-one meetings. The survey is also available online.
New England Visions 2030 and National Seniors Australia, Armidale Branch	18 August 2022 Email 30 August 2022 Online meeting	Letters and information booklets to introduce the Project and the company, it also informed on the feedback survey. An online presentation was provided to group members about the Project, including an overview of the project location, size, overview of the planning process, and information on community benefits.

5.2.3 Community Views

A summary of the key issues identified by the community and details of feedback received is summarised in **Table 5-4**. To date five feedback survey responses had been received by Neoen. The average support for the project based on these responses is 92.5%, meaning that the majority of people are supportive of the project.

Table 5-4 Community Key Issues Summary

Topic	Feedback Received
Battery	Concern on the battery life, including low efficiency and no recycling or reuse options.
Visual and Noise	Potential visual and noise impacts from one neighbouring dwelling on Eathorpe Rd.
Native vegetation	Potential clearing of native vegetation depending on where the proposed battery might be located.

5.3 Proposed Engagement

Broader engagement will occur during the EIS phase to inform and gain feedback from the current identified stakeholder list and other stakeholder groups located in the community. The CEP (**Appendix B**) outlines the details of stakeholder consultation to be undertaken during the preparation of the EIS, which may include the following activities:

- Development of a range of ongoing engagement channels for viewing information on the Project and addressing potential issues, including fact sheets, frequently asked questions, maps and visuals;
- Ongoing distribution of specific communication for targeted campaigns such as industry participation;
- Ongoing project 1800-freecall number and email inbox to address community enquires;
- Distribution of Project updates and future consultation activities in line with key project milestones through media and newsletters;
- Provide project updates and seek community feedback through community engagement sessions;

- Ongoing updates to nearby residents through phone calls, emails or letter box drops;
- Ongoing one-on-one meetings held with community groups, interest groups and key stakeholders;
- One-on-one briefing sessions seeking feedback from stakeholders, including (but not limited to) Council, Government agencies and, directly affected landowners;
- Ongoing online feedback survey or direct contact to capture the public opinion on the community benefit sharing program; and
- Ongoing promotion of job interest register and feedback survey through available communication channels and industry and business specific interest group meetings.

There are opportunities to develop positive and collaborative relationships with the community and Project stakeholders. This relationship can be developed meaningfully by continuing to share information on the Project, clarifying key areas, and demonstrating how feedback has been applied to the Project.

Neoen has a history of supporting the communities in which it operates. The Project would benefit from increased support to community groups and community facilities located in Armidale. These opportunities will be investigated following community consultation and submission of the Scoping Report.

5.4 Community Benefit Sharing

To ensure both short and long-term benefits flow through to the community as a result of the establishment and operation of the Eathorpe Battery, we establish a Community Benefit Sharing Program (CBSP).

The CBSP will be designed to deliver benefits to key stakeholders in the community in a way that aims to meet their needs and aspirations. Specifically, our objectives are to:

- Deliver significant and meaningful improvements to the community surrounding Eathorpe Battery;
- Ensure a wide range of different stakeholder groups benefit from Eathorpe Battery;
- Empower the community to shape the design and implementation of the different initiatives; and
- Build support for renewable energy in the Armidale area.

The majority of initiatives will be delivered during the construction and operations phase.

In alignment with Neoen's organisational vision, it is important that the benefit be a true benefit and be tailored to meet each distinct communities' need.

Neoen have a number of mechanisms to enable benefits to be shared in a meaningful and equitable way. Community input was sought into these options (and any other local ideas) at the community information session held on 30 June 2022 and via the community feedback survey.
The final program is likely be a one of the benefit-sharing mechanisms from the following list:

- Community Benefit Fund;
- Lower energy bills – through solar and/or storage subsidies;
- Lower energy bills - through partnership with an energy retailer; and
- Investment to address specific local issue.

Neoen is seeking feedback from the community to share their ideas and feedback about which type of Community Benefit Sharing mechanism they would prefer for the community.

6. PROPOSED ASSESSMENT OF IMPACTS

6.1 Categorisation of Assessment Matters

This section outlines matters that will require further assessment in the EIS, and the level of assessment that should be undertaken for each of these matter.

A preliminary environmental assessment was undertaken to identify the potential matters associated with the proposed construction and operation of the Project. The following were considered in the identification of matters requiring further assessment in accordance with the State significant development guidelines – preparing a scoping report (DPIE, 2021a):

- 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 future projects in the area;
- The ability to avoid, minimise and/or offset the impacts of the Project, to the extent known at the scoping stage; and
- The complexity of the technical assessment of the Project.

Each matter and its proposed level of assessment (detailed or standard) is identified in **Table 6-1.** Detailed assessments include environmental aspects that present a potential high constraint to the development, and other aspects which require detailed assessment, but do not pose a high-risk constraint. In addition, the matters have been categorised to align with those identified in State significant development guidelines – preparing a scoping report (DPIE, 2021a). A Scoping Summary Table has been included in **Appendix A**.

The key matters requiring more detailed assessments have been identified based on a preliminary assessment of the Project Area and by taking into consideration other similar developments in NSW.

Table 6-1 Proposed Assessment

Level of Assessment	Aspect
Detailed	■ Biodiversity ■ Heritage - Aboriginal ■ Amenity – Noise and Vibration ■ Amenity – Landscape and Visual ■ Hazards and Risks – Preliminary Hazard Analysis ■ Access - Traffic and Transport ■ Social Impacts
Standard	■ Heritage – Historic ■ Hazards and Risks – Bushfire ■ Hazards and Risks – Flooding and Hydrology ■ Amenity – Air Quality ■ Land Resources (Agriculture and Soils) ■ Water Resources ■ Waste Management

The EIS will be prepared in accordance with the SEARs to be issued by DPE in response to this Scoping Report, and will incorporate the issues, which have been outlined in **Table 6-1** above. All assessments (including specialist assessments) will be completed by taking into consideration consultation with stakeholders and industry best practice guidelines.

6.2 Amenity

6.2.1 Visual

6.2.1.1 Existing Environment

The Project Area is located within the New England and North West Region of NSW, approximately halfway between Sydney and Brisbane. The regional landscape is generally characterised by highly productive floodplains in the west, and volcanic rainforest tablelands and cliffs in the east. Topography across the Project Area is generally flat with minor isolated rises, ranging from 973.3 m to 1028.9 m ASL.

The nearest non-associated dwelling to the proposed battery location is situated approximately 240 m to the southwest (refer **Figure 2-1**). Due to the presence of existing vegetation, not all residences are expected to have visibility to the Project Area.

The existing TransGrid Armidale Substation and associated transmission lines are part of the visual character of the area. In addition to the relatively flat topography of the Project Area, existing vegetation occurs across the Project Area and along Eathorpe Road.

6.2.1.2 Assessment Approach

A landscape and visual impact assessment will be undertaken as part of the EIS for the Project, which will assess the likely visual impacts resulting from the Project. The assessment will consider the potential impacts of the Project (including security lighting) on nearby receptors, and scenic or significant views, including public viewpoints.

The visual impact assessment will involve a viewpoint analysis, which will utilise results from site inspections and stakeholder engagement activities. The purpose of the viewpoint analysis will be to identify the locations of receptors / sensitive areas with views of Project infrastructure.

The visual impact assessment and EIS will recommend appropriate mitigation measures where relevant, to reduce the Project's potential impacts on visual amenity. Potential mitigation measures will be identified and discussed with the relevant stakeholders during the assessment process.

Cumulative impacts on visual and landscape amenity associated with other state significant projects in the region have been considered as discussed in **Section 2.5**.

6.2.2 Noise

6.2.2.1 Existing Environment

The existing noise environment is of a typical rural area, where land use in the locality is predominantly agricultural. The existing Armidale Substation is a potential source of local noise.

Residential receptors are identified to be scattered in the vicinities of the Project (refer **Figure 2-1**). There are seven dwellings located within 500 m of the Project Area, with the nearest non-associated dwelling to the proposed battery located approximately 240 m to the southwest.

6.2.2.2 Assessment Approach

During the construction phase of the Project, residential receptors may be affected by noise associated with construction and increased traffic on the local road network. During the operational phase of the Project, noise impacts will likely be associated with electrical infrastructure (e.g., transformers, substations) and increased vehicle movements throughout the Project Area.

Noise levels at all receptors will be further assessed during the noise impact assessment as part of the EIS and subsequent detailed design of the Project. The noise impact assessment will provide:

- Noise monitoring to determine background noise levels;

- Noise modelling of the Project's construction and operational phases;
- Consideration of potential:
  - General construction and operational noise impacts to receptors within the potential area of influence of the Project;
  - Road traffic noise impacts (construction and operational phases, with a focus on construction) to receptors within the potential area of influence of the Project;
  - Vibration impacts (construction and operational phases, with a focus on construction) at receptors within the potential area of influence of the Project;
  - Cumulative operational noise impacts associated with surrounding industry (as relevant); and
- Recommendations for noise and vibration reducing mitigation, management measures, safeguards and/or provisions for monitoring.

6.3 Biodiversity

A Preliminary Biodiversity Assessment was conducted by ERM in June 2022 (**Appendix D**). The assessment aimed to refine the biodiversity constraints within the Project Area through desktop analysis and field survey. The Study Area for the assessment was inclusive of the Project Area as well as the southern side of Waterfall Way and the adjacent Eathorpe Road. The information gained from the assessment will support the development of a BDAR as part of the EIS. Results of the assessment are summarised below.

6.3.1 Existing Environment

6.3.1.1 Overview

The Project Area is located within the New England Tablelands Bioregion (IBRA) and the Armidale Plateau sub-region. This bioregion includes parts of the Macintyre, Clarence, Gwydir, Macleay, Namoi and Manning river catchments. The climate is mainly temperate to cool temperate, characterised by warm summers, and with montane climate at higher elevations characterised by mild summers and no dry season. The north-eastern boundary of the region has a warmer, sub-humid climate. The main vegetation found is open forests and woodlands, with a variety of species depending on soil type. Several threatened animal and plant species including the endangered Regent Honeyeater (*Anthochaera phrygia*) population may be present in woodland fragments.

The landscape within the Project Area is typically modified, having a minimal shrub layer and grass cover. The disturbed area is a result of vegetation clearing and livestock grazing and is dominated by pasture grasses.

There are several National Parks within proximity, including:

- Imbota Nature Reserve located 3 km south of the Project. The Imbota Nature Reserve contains habitat for abundant wildlife, and uncommon and rare flora species, for instance the endangered species regent honeyeater is known to be present in the area (refer **Figure 1-1**);
- Yina Nature Reserve located approximately 4 km northeast of the Project. The community vegetation is broadly similar to Imbota Reserve. Although Yina Reserve is approximately half the size of Imbota Reserve, its remnant vegetation is more isolated and has more species recorded (Hunter, 2007) (refer **Figure 1-1**); and
- Oxley Wild Rivers National Park located approximately 81 km southeast of the Project. The Oxley Wild Rivers National Park provides home to a wide variety of fauna and flora community, including the largest confirmed population of brush-tailed rock wallabies, and endangered species such as the majestic wedge-tailed eagle.

6.3.1.2 Plant Community Types and Potential Threatened Ecological Communities

A review of the state vegetation type mapping (version C1.1.M1 published 23 June 2022) was undertaken to assess existing vegetation mapping information within the Study Area. This mapping was further refined based on the Winter 2022 survey observations and BAM plot data, resulting in a total of two Plant Community Types (PCTs) being identified across the Project Area (refer **Figure 6-1)**.

The survey identified the PCT 567 (Broad-leaved Stringybark – Yellow Box shrub/grass open forest of the New England Tableland Bioregion) as the dominant vegetation type across the Project Area, covering 12.57 ha, or 19%. However, the highest constraint identified in the Study Area is the PCT 704 (Blakely's Red Gum - Yellow Box grassy open forest or woodland of the New England Tableland Bioregion) within the Eathorpe Road, which meets the requirements of the critically endangered White Box Yellow Box Blakely's Red Gum Woodland TEC.

A total of thirteen (13) vegetation integrity plots (Biodiversity Assessment Method (BAM) plots) have been completed across the Project Area and the surrounding properties to collect floristic data to identify and map PCTs. This includes eight (8) plots in areas of native vegetation and five (5) plots in areas of non-native/planted vegetation or exotic grassland.

Table 6-2 below lists these PCTs and the area (ha) of each within the Project Area.

Table 6-2 PCTs and extent (ha) within the Project Area

PCT No.	PCT Name	Vegetation Class	BAM Plots Completed	Study Area (ha)	Project Area (ha)
567	Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion	New England Grassy Woodlands	7	13.14	12.57
704	Blakely's Red Gum - Yellow Box grassy open forest or woodland of the New England Tableland Bioregion	New England Grassy Woodlands	1	2.51	1.03

The BAM Plots identified species associated with PCT 704 that are consistent with the EPBC Act and BC Act listed critically endangered TEC *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland*.

Additional field survey and analysis of vegetation plot data will be undertaken as part of the BDAR to refine the extent and presence of these TECs within the Study Area.

6.3.1.3 Threatened Flora and Fauna Species

A review of the NSW BioNet Atlas was undertaken, with records of threatened flora and flora species within 10 km of the Project Area presented in **Figure 6-2**.

Flora

A review of the NSW BioNet database identified no records of threatened flora species within the Project Area. The likelihood of occurrence assessment considered one (1) flora species, the Narrow-leaved Black Peppermint (*Eucalyptus nicholii*), as likely to occur based on records in the locality, and suitable habitat present within the Project Area. The species is considered Vulnerable under the EPBC Act and BC Act.

Targeted threatened flora surveys will be required to inform a BDAR at the EIS phase of the Project to meet the requirements of the BAM.

Fauna

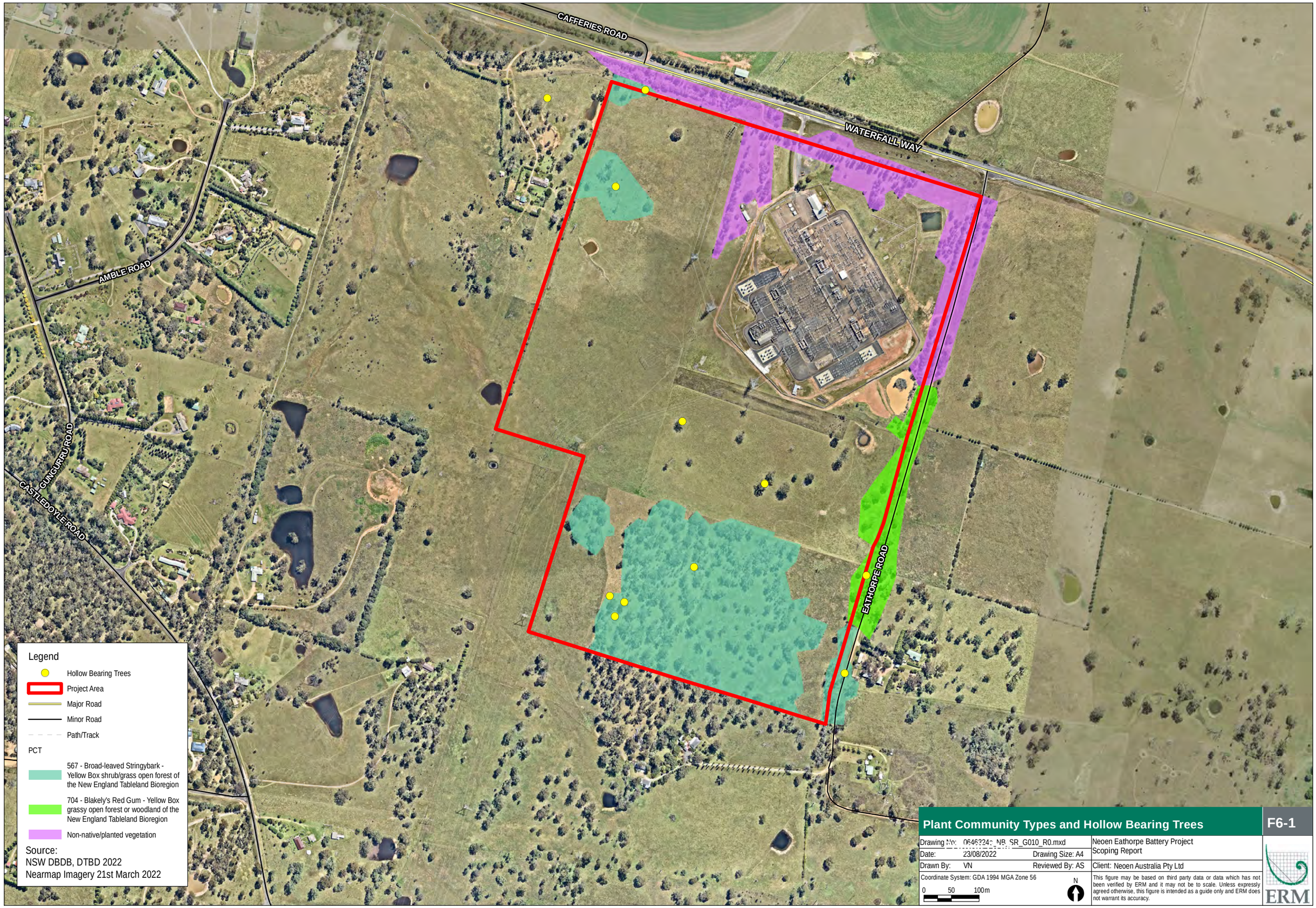
A review of the NSW BioNet database identified no records of threatened fauna species within the Project Area. However, there were multiple records of threatened species within approximately 10 km of the Project Area, these have been considered within the Likelihood of Occurrence (LoO) Assessment. The LoO Assessment identified 10 fauna species that are considered likely to occur within the Project Area based on records in the locality and the presence of preferred habitat. These species are detailed in **Table 6-3**.

A total of 11 hollow bearing trees were opportunistically recorded across the Project Area and are presented in **Figure 6-1**. Details including diameter at breast height (DBH), hollow height, and hollow diameter were recorded (refer **Appendix D**).

Surveys targeting candidate species comprising of call playback and spotlighting were undertaken in three (3) locations across four (4) nights. These surveys targeted Masked Owl and Barking Owl, however no sightings or vocalisations of either species were recorded.

Table 6-3 Fauna species likely to occur within the Project Area

Scientific Name	Common Name	BC Act	EPBC Act
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-
Chthonicola sagittata	Speckled Warbler	V	-
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V	-
Daphoenositta chrysoptera	Varied Sittella	V	-
Hieraaetus morphniodes	Little Eagle	V	-
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	V	-
Petroica boodang	Scarlet Robin	V	-
Stagonopleura guttata	Diamond Firetail	V	-
Tyto novaehollandiae	Masked Owl	V	-
Phascolarctos cinereus	Koala	E	E



Plant Community Types and Hollow Bearing Trees

F6-1

Drawing No:	0646324_NR_SR_G010_R0.mxd		Neoen Eathorpe Battery Project Scoping Report
Date:	23/08/2022	Drawing Size: A4	
Drawn By:	VN	Reviewed By: AS	Client: Neoen Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

0 50 100m

N

ERM

CAFFERIES ROAD

WATERFALL WAY

AMBLE ROAD

GUNGURRU ROAD

CASTLEDOYLE ROAD

EATHORPE ROAD

Legend

- Project Area
- Major Road
- Minor Road
- Path/Track
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

Source:
NSW DBDB, DTBD 2022
Nearmap Imagery 21st March 2022

Threatened Ecological Communities

F6-2

Drawing No:	0646324_NR_SR_G011_R0.mxd		Neoen Eathorpe Battery Project Scoping Report
Date:	23/08/2022	Drawing Size: A4	
Drawn By:	VN	Reviewed By: AS	Client: Neoen Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

0 50 100 m

N

ERM

6.3.2 Assessment Approach

The construction and operation of the Project has the potential to cause impacts to threatened species and a TEC listed under the BC Act and EPBC Act. These biodiversity values will need to be considered as part of an EIS. Additionally, the proposal will need to be referred to the Commonwealth Minister for the Environment and Water for potential impacts to MNES.

As there are recorded biodiversity values within the Project Area, application of the BAM and the preparation of a BDAR will be required to inform the EIS.

Candidate species will be selected for further assessment by considering how they and their habitat might be affected by the Project. A preliminary list has been presented in the Preliminary Biodiversity Assessment (Appendix C of **Appendix D**). In this instance the main potential impacts of the Project (during construction and operation) that would need to be assessed include:

- Disturbing/clearing of TECs;
- Loss of extant native vegetation communities and associated fauna habitat and the subsequent impacts to local population of native species, particularly threatened and migratory species;
- Increased habitat fragmentation; and
- Mortality and injury from vehicle strikes and vegetation clearing.

Mitigation measures relevant to potential impacts to threatened species, TECs, native vegetation communities, hydrology will be included in the BDAR and EIS. There is also a risk that weeds may be transported within and off-site. Mitigation measures to reduce the chance of the spread of weeds will be considered within the EIS.

The desktop assessment and field surveys undertaken to date have highlighted a range of known and potential biodiversity constraints.

The following steps are considered essential in ensuring an adequate assessment of biodiversity values is continued throughout future stages of the Project:

- Project layout and design is to consider avoiding areas of high biodiversity constraint, to reduce impacts to the critically endangered TEC associated with PCT 704;
- Project layout and design to minimise impacts to PCT 567, to reduce impacts to Koala habitat and areas of native vegetation;
- Prepare and submit a BDAR in accordance with the BAM;
- If impacts to MNES cannot be avoided and minimised, prepare and submit an EPBC Act referral to the commonwealth Minister for Environment and Water; and
- Conduct further targeted seasonal fauna and flora surveys for species considered likely or that have the potential to occur within the Project Area in accordance with relevant federal or State survey guidelines.

6.4 Heritage

6.4.1 Aboriginal Cultural Heritage

6.4.1.1 Existing Environment

Armidale is located within the New England Tableland Bioregion of New South Wales. The Bioregion is a stepped plateau of hills and plains with elevations between 600 m and 1,500 m above sea level on Permian sedimentary rocks, intrusive granites and extensive tertiary basalts. Rainfall, temperature and soils change with topography and bedrock, and the vegetation is very diverse with a high degree of endemism (NSW NPWS, 1991).

The Project Area is located within the Armidale Plateau subregion, the landscape of which is characterised by an undulating to hilly plateau at 1,100 m above sea level (NSW NPWS, 1991).

Soils across the Armidale Plateau include contrast soils on sedimentary rocks and granite, soft and friable soils on upper slopes, and harsh and poorly drained soils on lower slopes. The Project Area is mapped within the Argyle soil landscape across a crest and slope landform. Argyle soils are reported to be shallow across crest landforms with A horizon soils comprised of sandy clay loams extending to a depth of 10 cm. In areas of mid slope, the soils within the Argyle soil landscape are reported to extend to a depth of up to 80 cm (eSpade 2022). Archaeologically crest and ridge landforms are generally considered to demonstrate archaeologically sensitivity associated with a number of past land uses including use as part of travel routes, as outlooks and for ceremonial purposes.

Vegetation within the Armidale Plateau varies across different landform features. In areas of basalt, vegetation includes open ribbon gum forest and woodland with snow gum and black sallee. In areas of sedimentary rocks, vegetation is comprised of Yellow box, Blakely's red gum, rough-barked apple, apple box. Silver-top stringybark, New England stringybark is reported in dry aspects of the region with Blakely's red gum, yellow box and apple box found on moist, well-drained slopes (NSW NPWS, 1991). A number of the trees present in the region are noted to be suitable for the creation of Culturally Modified Trees (CMT's). Historic aerials indicate that the Project Area has been subject to limited land clearance suggesting that intact mature trees which may have been subject to cultural modification may be present across the Project Area.

6.4.1.2 Archaeological Background

In the present regional archaeological context, it is difficult to discern the majority of the past daily activities of Aboriginal life, especially within the open site context that is dominant in the region today. Any archaeologically significant material made from organic material such as bark, wood, or animal hide would decay quickly in this environment. However, items or features made of more resilient material, such as stone or earth, would likely survive in the places they were made or left. Sources of raw materials, such as the extraction of wood or bark would also leave scars on the trees that are archaeologically visible, although few of these trees survive. The stone outcrops that were used as quarries for resources would also leave behind archaeologically visible evidence, with the marks on the outcrops from the removal process or flakes produced during the same process likely being in the area; although the pebble beds that were often used to source these same materials does not leave similar traces.

The Aboriginal language groups whose traditional lands lie in the New England Tablelands Bioregion include the Anaiwan (the area around Armidale) and the Kwaimbul in the north, while the Banbai inhabited areas around Ben Lomond and Mt Mitchell at the centre of the region. Bundjalung people also inhabited the north-eastern side and Ngarrabul people were located from Glencoe, north to Bolivia then slightly east to the Bundjalung border and west to take in the Beardy plains and the top of the Seven River area. The area around Kingsplains, Wellingrove and Strathbogie stations have also been home to the Ngarrabul (NSW NPWS, 1991).

First Nations people used the landscape as both a natural and cultural resource and there is a strong oral history indicating seasonal movement of Aboriginal people through the rugged gorge system, between the coastal plains and tablelands. The tablelands were occupied during summer and autumn with communities moving either to the coast or the western river systems for winter (Piper, A, 1989) (Sutton, S. , 1988).

Archaeological evidence suggests the tableland Aboriginal groups traded with groups on the Western slopes and that a range of stone tools such as jagged spears, boomerangs and waddies were developed with local and traded stone and local hardwood (McBryde, I., 1974). Mammals such as kangaroo and possum were used for food, clothing and decoration.

The region is also known for ornately carved trees, ceremonial bora grounds and art sites, indicating an intimate spiritual, as well as a physical, attachment to the sacred landscape the Aboriginal people inhabited (NSW NPWS, 1991).

The region surrounding the Project Area has been subject to a number of previous archaeological studies performed over the past several decades including:

- EMM 2018, New England Solar Farm, Aboriginal Cultural Heritage Assessment Report, report prepared for UPC Renewables Australia Pty Ltd (EMM, 2018).
- Knuckey, G. 2015. An Aboriginal Cultural Heritage Assessment: Lot 2 DP1195562, 140 Stockton Road, Hillgrove, New South Wales. Unpublished report prepared for Eco Logical Australia on behalf of Hillgrove Mines Pty Limited. Remnant Archaeology: Armidale, New South Wales (Knuckey, G. , 2015).
- Knuckey, G. 2016a. An Aboriginal Heritage Impact Assessment: Armidale-Dumaresq Shire Road Recovery Project- Guyra-Ebor Road at Lot 6 DP878309 (800m), Rockvale Road at Lot 4 DP1135773 (1.3km) and, Wollomombi Falls Road at Lots 1-2 DP1074030 (1.3 km). Armidale-Dumaresq LGA, New South Wales. Unpublished report to Armidale-Dumaresq Shire Council. Remnant Archaeology: Armidale, New South Wales (Knuckey, G., 2016a).
- Knuckey, G. 2016b. *A Cultural Heritage Assessment: Metz Solar Farm on "Bayley Park", Waterfall Way via Armidale. Armidale Regional Council Local Government Area, New South Wales*. Unpublished report for Eco-Logical Australia, to Infinergy Pacific. Remnant Archaeology: Armidale, New South Wales (Knuckey, G. , 2016b).
- Knuckey, G. 2019. An Aboriginal Cultural Heritage Assessment - UNE Solar Farm at the University of New England, Armidale. Armidale Regional Council Local Government Area, New South Wales. Unpublished report to Facilities Management Services, University of New England. Remnant Archaeology: Armidale, NSW (Knuckey, G., 2019).
- McBryde, I. 1974. Aboriginal prehistory in New England: an archaeological survey of northeastern New South Wales. Sydney University Press: Sydney (McBryde, I., 1974).
- Piper, A. 1989. An archaeological assessment of a proposed subdivision off Cooks Road and Erskine Street, Armidale, N.S.W. Unpublished report prepared for JS Hawkins and Co. Andrew Piper: Armidale, NSW (Piper, A, 1989).
- Sutton, S. 1988. Results of a survey for Aboriginal sites in the city of Armidale. Unpublished report prepared for the Council of the City of Armidale New South Wales (Sutton, S. , 1988).

The intensity of these studies and archaeological excavations has resulted in the registration of a number of Aboriginal sites in the region. In general, the variety in the site types found throughout the Armidale area suggests that the region was seasonally inhabited as well as used for ceremonial purposes by Aboriginal people.

Artefact sites dominate the record for the surrounding landscape and are often associated with areas of exposure and erosion. The subsurface excavation results, as detailed in the above mentioned reports, have demonstrated that areas of moderate to low ground disturbances have the ability to possess intact archaeological deposits which can contain stratigraphic integrity.

AHIMS Database Search Results

A review of the Aboriginal Heritage Information Management System (AHIMS) database was undertaken on 31 May 2022 to develop an understanding of any Aboriginal sites which may have been registered within or in the vicinity of the Project Area. The search was conducted utilising the parameters provided in **Table 6-4**.

Table 6-4 AHIMS Database Search Details

Parameters	Search 1
Client Service ID	687009
Datum	GDA Zone 56
Lot/DP	841/755808
Buffer	1,000 m
Number Sites	3

A total of three sites were identified within proximity to the Project Area with no sites identified within the Project Area. The three sites within proximity to the Project Area are listed as open sites containing artefacts.

The three sites are AHIMS # 21-4-0058 is located 345 m south of Project Area, AHIMS # 21-4-0181 is located 620 m north-west of Project Area and AHIMS # 21-4-0182 is located 650 m north west of Project Area. Site 21-4-0181 and 21-4-0182 are located in private properties located on Amble Road, while site 21-4-0058 is located in an easement to the south of the neighbouring property. All are in a semi-rural area similar in nature to the landscape of the Project Area.

Table 6-5 identifies the AHIMS registered sites with the location of the registered sites shown in **Figure 6.3**.

Table 6-5 AHIMS Registered Site Types

Site Type	Number of Site	Site name	Site ID
Artefact	1	TH/JA2	21-4-0058
Artefact	1	Dangsleigh Road crown land site Ant nest 2	21-4-0181
Artefact	1	Dangsleigh Road crown land site Ant nest 3	21-4-0182
Total	**3**		

AHIMS sites

F6-3

Drawing No:	0646324c_NR_SR_G005_R1.mxd		Neoen Eathorpe Battery Project Scoping Report
Date:	01/09/2022	Drawing Size: A4	
Drawn By:	VN	Reviewed By: AS	Client: Neoen Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

0 50 100m

N

ERM

6.4.1.3 Assessment Approach

A review of the existing environmental, archaeological and historical land use suggests that the Armidale region would have been utilised by Aboriginal people for a number of land uses prior to European occupation. Archaeological sites associated with these land uses are most likely to include areas of PAD, artefact scatters and isolated finds due to the durable nature of these site features.

The low level of historic disturbance across the Project Area is considered likely to have resulted in low impact to any tangible Aboriginal heritage values which may have previously existed across the Project Area. The Project Area may also include intangible or cultural values of significance to the Aboriginal community.

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 to support the project EIS;
- Heritage 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, Code of Practice for archaeological investigation of Aboriginal Objects in New South Wales, 2010b), and Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW, 2010c);
- Results of the investigations are to be detailed in an Aboriginal Cultural Heritage Assessment Report (ACHAR), in accordance with the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH, 2011); and
- If required, 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.

6.4.2 Historic Heritage

6.4.2.1 Existing Environment

Historical Background

John Oxley first visited the New England Tablelands Bioregion in 1818 during his early explorations of northern NSW. Following John Oxley's recommendation for grazing, squatters soon established large leaseholds in the locality in the 1830s (NSW NPWS, 1991).

European exploration and subsequent settlement of Armidale was founded in 1839 by G.J. MacDonald, commissioner of crown lands, who named it for his father's Scottish baronial estate on the Isle of Skye. Armidale developed a pastoral-agricultural economy and became a town in 1845. In 1846 it had a population of only 76, but even so it was already serviced by a post office, court house, flour mill, church and several inns. Five years later the population had reached more than 500 and became the central administrative town of the bioregion (HO and DUAP, 1996).

Gold was discovered at Rocky River just southwest of Armidale in 1851 and soon 3,400 miners were there searching for the precious ore and by 1855 this number had grown to 5,000 people. Another goldfield northeast of Glen Innes, with a population of 400 miners including many Chinese settlers, was active throughout the 1850s (HO and DUAP, 1996). Further gold and other metals were discovered in the bioregion in the 1870s, 80s and 90s. Tin deposits found at Elsmore in 1871 and Emmaville in 1872 prompted commercial developments and stimulated townships based on eager miners in their hundreds (NSW NPWS, 1991).

Tin was discovered throughout the bioregion, advancing towns like Glen Innes and swelling the populations of smaller towns such as Tingha (meaning “the flat place” in the local Anaiwan Aboriginal language) which was largely abandoned after 1900 (HO and DUAP, 1996).

Towns like Walcha, Armidale and the nearby Hillgrove gained economic boosts from finds of gold and antimony. Gold and tin mining also occurred in the far north of the bioregion on the upper reaches of the Clarence River (HO and DUAP, 1996).

Cattle grazing was the dominant land use of the bioregion in the early days of European settlement but by 1846 Armidale’s rapid expansion begun to show the first signs of a modern, ‘progressive’ community (Campbell 1922). In March 1846, the first Anglican clergyman, Reverend Henry Tingcombe, arrived. There followed a Presbyterian minister in 1851 and a Catholic priest in 1853. All three denominations, as well as Methodism, grew rapidly, and by the end of the 1860s Armidale was the headquarters of both a Church of England bishop and a Catholic bishop (Barker 1980). A Catholic cathedral, St Mary’s, was built in 1872; three years later, its Anglican counterpart, St Peter’s, was opened. The churches were largely responsible for education and as early as 1852 a Church of England school had sixty-three children on the roll. By the following year, a Catholic master was also teaching to a class of sixty students (Barker 1980).

The 1850’s saw the establishment of several essential services including a hospital which opened in 1853. The Armidale Express, a print newspaper, was established in 1856 after local residents raised £89 to bring its founders, William Hipgrave and Walter Craigie, from Maitland. They transported their printing press by bullock dray, an arduous journey which took twenty-seven days to complete (Gilbert 1982). The town’s first bank, the Australian Joint Stock Bank, began operating in 1856, and in the same year an insurance company made Armidale its headquarters. Ten others followed in about as many years. A new courthouse opened in 1860 (its distinctive clock tower came later, in 1899). By this time Armidale also had its own gaol, located on the town’s southern hill and upon which the Armidale Teachers’ College was later built (Gilbert 1982).

Perhaps the city’s greatest achievement was its establishment as a regional educational centre, which occurred in the late-nineteenth century. The role of the churches in this process was paramount; shortly after arriving both of the major denominations established schools to rival the emerging national system (Barker 1980). At a time when environment played an important role in shaping Anglo-Australian attitudes, moreover, Armidale with its ‘healthy English climate’ was frequently cited as an ideal educational city. The place was forever being referred to by locals as ‘a city of schools’ and ‘the great scholastic centre of the north’. And there was some truth in these descriptions. By the 1920s, Armidale was home to two Catholic and two Anglican boarding schools, a prosperous private school (later the Presbyterian Ladies’ College), a growing co-educational high school and four state primary schools. There was also a small Anglican theological college, St John’s, which trained clergy from throughout rural New South Wales. These circumstances, along with the fortuitous election of David Henry Drummond to the state seat of Armidale in 1920, led the establishment of the Armidale Teachers’ College (later the Armidale College of Advanced Education) in 1928 and, a decade later, the New England University College. The University College, originally a subsidiary branch of Sydney University, was granted autonomy in 1954 and became the University of New England (Barker 1980).

Historic land use has the ability to significantly impact the landscape and leave marks of its use. A review of historic aerials suggests that the Project Area has been subject to relatively low levels of historic development over the past decades with land use primarily associated with low levels of land clearance and grazing activities. It is noted that significant tree growth exists across the Project Area suggesting relatively low intensity historic land use across the Project Area.

The potential for historical archaeological remains to be present within the Project Area associated with the former agricultural or grazing activities is considered to be low.

Statutory Heritage Register Searches

A search of all relevant historic heritage databases was undertaken with the following results:

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 10 August 2022. No historic heritage listings have been identified within 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. In order 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 31 May 2022.

No Section 170 heritage places are located within or in close proximity to the Project Area.

Armidale Dumaresq Local Environmental Plan (LEP) 2012

The EP&A Act is the main act regulating land use planning and development in NSW. The EP&A Act also controls the making of environmental planning instruments (EPIs). Two types of EPIs can be made: LEPs covering local government areas; and State Environment Planning Policies (SEPPs), covering areas of State or regional environmental planning significance. LEPs commonly identify, and have provisions for, the protection of local heritage items and heritage conservation areas.

The study area is located within the Armidale Regional LGA and is subject to the Armidale Dumaresq LEP 2012. A search of the Armidale Dumaresq LEP 2012 was undertaken on 10 August 2022. There are no listed heritage items within the Project Area. However, three locally listed heritage items are listed and mapped to the north and east of the Project Area (refer **Figure 6-4**). Details of these items are provided below in **Table 6-6**.

Table 6-6 Locally listed historical archaeological sites

Site Name	Item ID	Summary	Approximate Distance to Project Area
Site of Commissioners Waters Inn, Grafton Road (west of Commissioners Waters	A037	The Site of Commissioners Waters Inn is significant as records of country wine shanties are limited, as many of the addresses were not recorded. The site is important for the potential information it contains on this kind of facility.	1.4 km
Site of Abattoir, “Wongalea” 475 Grafton Road	A038	The Site of Abattoir, “Wongalea” located at 475 Grafton Road, just over 700 m from the Project Area is recognised for its significance as the building is of unusual construction and impressively crafted. It represents a local small scale industry of meat processing that no longer functions in this way	730 m
Site of Brookstead fellmongery and woolwashing works, “Eathorpe”, 650 Grafton Road	A039	The Site of Brookstead fellmongery and woolwashing works, “Eathorpe” located at 650 Grafton Road is recognised for its significance as evidence for such a facility is poorly recorded in the area, although it formed a vital part of a major industry which characterises the New England region, that of wool production. The main repository of information is archaeological, as no visible infrastructure survives.	1.8 km

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, the register is now maintained by the Australian Heritage Council.

Following amendments to the Australian Heritage Council Act 2003, 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.

A search of the Australian Heritage Database was undertaken on 31 May and 10 August 2022. This search identified no RNE listed places within or in close proximity to the Project Area.

I005
BARNEY STREET
C2
I068
CAMAMBE STREET
I100
I244
LARA AVENUE
DALA LANE
TOMBS ROAD
INCES ROAD
MIDDLE FARM ROAD
CHAPEL STREET
BROWN STREET
A044
MANN STREET
MOSSMAN STREET
MORRIS STREET
KENTUCKY STREET
CAFFERIES ROAD
COMMISSIONERS WATERS
A038
GALLOWAY STREET
NEWLING
AMBLE ROAD
CASTLEDOYLE ROAD
GUNGURRU ROAD
EATHORPE ROAD
A037
SEATON STREET
MYRTLE DRIVE
ACACIA PARK
DEPOT ROAD
MAYS ROAD
WATERFALL WAY
A039
LONG SWAMP ROAD
LUCAS LANE

Legend

- Project Area
- Major Road
- Minor Road
- Path/Track
- Cadastre

EPI Heritage

- Item - General
- Item - Archaeological
- Conservation Area - General

Source:
Armidale Dumaresq LEP 2012 Heritage Map 002A
NSW DBDB, DTBD 2022
Nearmap Imagery 21st March 2022

The location of the Project Area to locally listed historical archaeological sites

F6-4

Drawing No:	0646324_NB_SR_G006_R1.mxd		Neoen Eathorpe Battery Project Scoping Report
Date:	01/09/2022	Drawing Size: A4	
Drawn By:	VN	Reviewed By: AS	Client: Neoen Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

0 200 400m

N

ERM

6.4.2.2 Assessment Approach

Preliminary assessment has identified that the Project Area is located within a semi-rural landscape which has been subject to minor historic land uses associated with pastoral land uses. The potential for significant historic heritage values to be present within the Project Area is considered to be low. However, a review of existing historic heritage databases has identified that that while no historic heritage items are located within the Project Area there are three historic archaeological sites listed on the Armidale Dumaresq LEP 2012 in the vicinity of the Project Area.

Review of these sites indicate that both the Commissioners Waters Inn and Site of Brookstead fellmongery and woolwashing works “Eathorpe” are currently limited to archaeological remains only and subsequently would not be subject to visual impact as part of the proposal. The site of Abattoir, “Wongalea” by comparison is reported to include built remains however it is considered highly likely that any view lines between the Project Area and built elements of the item would be obscured the existing electricity substation.

It is proposed to undertake a preliminary historic heritage assessment to support the EIS. The preliminary historic heritage assessment would confirm the potential for unlisted heritage items to be present within the Project Area.

6.5 Access – Traffic and Transport

6.5.1 Existing Environment

The Project Area is located approximately 480 km (by road) from Sydney, 469 km (by road) from Brisbane, and 340 km (by road) from Newcastle. It is anticipated that major battery components will be delivered to a port and transported by road to the Project Area.

Access to the Project Area during construction and operations is proposed via the existing road network from Waterfall Way and Eathorpe Road. Site access is currently proposed via the unnamed Council road easement off Eathorpe Road; however, this is subject to further assessment during the EIS phase.

The construction of access tracks will also be required throughout the Project Area to allow for maintenance to occur throughout the operational phase of the Project.

6.5.2 Assessment Approach

A Transport and Traffic Impact Assessment (TTIA) will be included in the EIS which will consider potential transportation routes for construction traffic and potential impacts of the size, loads, and volumes of vehicles on the road network. The TTIA will generally be prepared in accordance with the *Guide to Traffic Generating Developments* (RTA, 2002), *Austroads Guide to Road Design* (Austroads, Austroads Guide to Road Design, 2022), and *Austroads Guide to Traffic Management* (Austroads, Guide to Traffic Management, 2020).

The scope of the TTIA will likely involve:

- Assessment of haulage routes, access points, and swept paths through intersections (if required) to determine potential risks and impacts from the largest vehicles;
- Assessment of likely Project-alone and cumulative traffic impacts during the construction and operational phases of the project (including intersection performance, capacity, safety and site access);
- Review of any previous traffic impact assessments undertaken for the surrounding area and traffic counts in selected areas;
- Identification of mitigation and management measures if required, including in relation to traffic volumes and sight lines;

- Identification of any road upgrades if required and associated land clearing and disturbance works; and
- Assessment of the potential impacts of the proposed works on residences and access ways.

6.6 Social

This section provides the first phase Social Impact Assessment (SIA) for the Project, undertaken by WSP (refer **Appendix E**) in accordance with the Department of Planning , Industry and Environment's (DPIE) Social Impact Assessment Guideline: For State Significant Projects (SIA Guideline) (DPIE, 2021b).

The first phase SIA involves scoping and a preliminary assessment, identification of the level of assessment to be applied and sets further parameters for the second phase SIA (DPIE, 2021b, p. 12). Accordingly, the first phase SIA objectives are:

- Determine the preliminary local and regional Social Locality;
- Identify key communities and potentially affected stakeholders; and
- Identify potential social impacts requiring further investigation in the second phase of the 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 to define the social area of influence, or Social Locality. Determining the Social Locality for a 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.

In determining the Social Locality, the following were taken into consideration:

- The Project Description, including the layout of the battery utility, associated infrastructures, access tracks, and transmission line;
- The location of these components within the overall Project Area relative to sensitive land uses. This includes proximity to environmental values and topographical features;
- Construction and operation phase activities, such as:
  - Land clearing and ongoing access for maintenance;
  - Workforce requirements, including skills required, accommodation arrangements and daily transportation to and from the site;
  - Goods and services required by the Project; and
  - Haulage routes to and from the WSSC.

When considering these aspects, it was determined that the Project's Social Locality should include the Project Area, the area surrounding the Project Area where stakeholders are more likely to experience direct and indirect socio-economic impacts, in line with the SIA Guideline (DPIE, 2021b).

The Project is located wholly within the Armidale Regional LGA and is approximately 6 km from the Armidale town centre. The local Social Locality of the Project includes the Armidale SSC (State Suburb), which includes the town of Armidale and the residential population surrounding the Project Area that might encounter primary and secondary socio-economic impacts associated with the Project. Furthermore, the regional Social Locality includes urban area within the Armidale LGA hubs that may service the Project, such as Guyra and Armidale urban area. The regional Social Locality may experience secondary socio-economic impacts associated with the Project.

The Project's Social Locality, as defined for the purposes of the SIA, is comprised of the following three components:

- The Project Area and immediate surrounding areas, located within the Australian Bureau of Statistics (ABS) Statistical Area Level 2 (SA2) containing the Project and nearby residencies. SA1 and SA2 data has been used to identify key baseline indicators for the Social Locality, where applicable. Additionally, NSW demographic overview was used to provide an understanding of the broader and comparative social context within which the Project is located;
- The transportation and haulage routes, comprising vehicular routes to and from the site which will be used during construction and operations, including Waterfall Way and Eathorpe Road; and
- The surrounding towns and regional centres, including Armidale SSC and the town of Armidale, wherein goods and services to support the construction and operation phases of the Project are likely to be sourced.

The Project's Social Locality, as defined for the purposes of the SIA, is depicted in **Figure 6-5**

The indicative travel distances from the Project Area to nearby town centres are provided in **Table 6-7**.

Table 6-7 Approximate Distances to the Project Area

Town/Regional Centre	Travel Distance (by road)
Armidale	6 km
Hillgrove	28 km
Uralla	29.3 km
South Guyra	41.8 km
Guyra	44.5 km
Llangothlin	55.3 km
Walcha	70.3 km
Tingha	108 km
Glen Innes	104 km
Tamworth	117 km
Inverell	132 km

Stannifer
Paradise
Maybole
Pinkett
Glencoe
Howell
Tingha
Chaelundi
Nymboida
The Gulf
Towallum
Tenterden
Bundarra
Aberfoyle
Falconer
Moonpar
Guyra
Marengo
Tyringham
Cascade
Brockley
Abington
Boorolong
Hernani
Dorrigo
Deer Vale
Armidale Regional Council
Ebor
Dumaresq
Thora
Yarrowyck
Armidale SSC
Armidale
Kingstown
Kalang
Argyle
Girralong
Jeogla
Retreat
Balala
Uralla
Gostwyck
Mihi
Enmore
Burrapine
Comara
Kentucky
Millbank
Bellbrook
Carrai
Wollun
Woolbrook
Walcha

Legend
- Project Area
- Local Regional Locality
- Local Social Locality

Source:
NSW DBDB, DTBD 2022
ESRI World Imagery 2019 - 2021

Project Social Locality

F6-5

Drawing No:	0646324s_NB_SR_G014_R0.mxd		Neoen Armidale BESS Scoping Report
Date:	01/09/2022	Drawing Size: A4	
Drawn By:	VN	Reviewed By: AS	Client: Neoen Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

0 5 10km

N

ERM

6.6.1.2 Community Profile

The Armidale LGA and Armidale SSC profile presented in this section will inform the social baseline in the second phase SIA (as part of the EIS).

Table 6-8 outlines the key demographic data across the Project's Social Locality.

Table 6-8 Summary of Relevant ABS Datasets

Statistic	Armidale LGA	Armidale SSC	NSW
Population	29,124	23,967	8,072,163
Median age	37	36	39
Families	6,896	5,594	2,135,964
Private dwellings	12,888	10,409	3,357,785
Average people per household	2.3	2.3	2.6
Median weekly household income	$1,404	$1,432	$1,829
Aboriginal and/or Torres Strait Islander population	7.6%	7.9%	3.4%
Unemployed persons	7.7%	8.3%	6.3%
SEIFA IRSAD score quintile	4	3	

The town of Armidale, Guyra and Tingha, and the villages of Ben Lomond, Black Mountain, Ebor, Hillgrove, and Wollombi are part of the Armidale SSC. The major and most populated towns within the Armidale LGA are Armidale and Guyra.

6.6.1.3 Social Infrastructure Overview

Social infrastructure comprises schools and other education institutions, medical services, emergency services, recreational facilities and community organisations. Some commercial services are also listed under social infrastructure, such as childcare facilities.

The nearest town of Armidale features several childcare centres, primary schools, high schools and one TAFE. It also includes local sporting and recreational facilities and several neighbourhood parks and outdoor greenspaces. Local community organisations include the Armidale Neighbourhood Centre Inc., the Community Support Hub and the Each Community Centre. The Armidale Private Hospital and the Armidale Rural Referral Hospital service the wider area and several local medical and dental services are also located in Armidale. The closest police and fire emergency services are with the Armidale Police Station, the Dumaresq Fire Station and Armidale Fire and Rescue NSW, located approximately 12 km west of the Project Area. There are a number of churches located at Armidale, including Catholic, Presbyterian, Adventist and Anglican. Armidale also features one retail precinct and provide a range of social infrastructures, such as grocery stores, banks, post office, library, hardware stores, service stations and the Armidale Regional Airport.

Guyra is a town located in the New England High District, approximately 32 km north of Armidale and 35 km north of the Project Area. Guyra has the Guyra Multi-Purpose Service, which is a major medical facility offering a wide variety of medical services to the locality, which includes dentist, a doctor's surgery, maternal and child health. There are six churches located at Guyra, which include Anglican, Adventist, Catholic and Presbyterian. Guyra also has a variety of social infrastructure, such as petrol stations, post office, banks, supermarkets, and library. Guyra has one primary school, one high school and one college, the Guyra Adult Learning Association.

The Project Area is located approximately 3 km north of the Imbota Nature Reserve, 4 km southwest of the Yina Nature Reserve, and 4.5 km south of the Armidale State Forest (refer **Figure 1-1**).

6.6.2 Potential Social Impacts

The first phase SIA provides a preliminary desktop assessment of the potential impacts while the second phase SIA to be incorporated into the EIS will develop 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 updated SIA Scoping Tool that complements the SIA Guideline (DPIE, 2021b). The scoping tool identifies the social impacts that are considered likely to occur, and the corresponding level of assessment for each social impact. Use of the updated SIA Scoping Tool allows for the level of assessment for the potential social impacts to be identified, which in this case was determined to be 'detailed assessment'.

An outline of the methodology the second phase SIA will follow is provided below. The second phase SIA will elaborate potential cumulative impacts in view of proposed wind farm and other large-scale projects in the Project's Social Locality.

As this is a first phase SIA, this impact assessment is preliminary in nature and makes assumptions based on the desktop assessment. The identified potential impacts listed in **Table 6-9** will be ground-truthed, supplemented by key stakeholder feedback, and reviewed against any changes associated with further design development subsequent to issuing the SEARs. Further development of this assessment in the second phase SIA will include application of DPIE's social impact significance matrix, as per the SIA Guideline, and an assessment of both pre and post mitigation scenarios.

Table 6-9 Preliminary Social Impact Assessment

Description of Impact	Impact Categories	Nature of Impact	Project Phase	Level of Assessment
Delays and traffic disruptions due to construction related traffic movements (including potential heavy/oversized vehicle movements)	Way of life	Negative	Construction	Minor assessment of the impact
Improved infrastructure to facilitate access to renewable energy sources in NSW and enhance reliable energy supply	Way of life	Positive	Operations	Detailed assessment of the impact
Loss of Aboriginal and non-Aboriginal cultural/heritage values due to construction activities and land clearing (pending heritage assessment)	Culture	Negative	Construction and operations	Detailed assessment of the impact
Amenity impacts associated with construction activities, including visual, noise and vibration and air quality disruptions	Health and wellbeing	Negative	Construction	Standard assessment of the impact
Impacts on local amenity due to operational noise impacts associated with the project	Health and wellbeing	Negative	Operations	Detailed assessment of the impact
Loss of environmental/biodiversity values due to land clearing (pending biodiversity assessment)	Surroundings	Negative	Construction and operations	Detailed assessment of the impact
Perceived changes to community character due to the reduction of high-quality agricultural land in the local area	Surroundings	Negative	Construction and operations	Minor assessment of the impact
Permanent changes to community character and surrounding landscape (including diminished 'rural outlooks')	Surroundings	Negative	Construction and operations	Detailed assessment of the impact

Description of Impact	Impact Categories	Nature of Impact	Project Phase	Level of Assessment
Permanent impacts on visual amenity, including potential light pollution	Surroundings	Negative	Operations	Detailed assessment of the impact
Saturation of temporary accommodation providers in Armidale, limiting accommodation options for tourists, students and seasonal workers	Livelihoods	Negative	Construction	Standard assessment of the impact
Local employment and procurement opportunities during project construction	Livelihoods	Positive	Construction	Standard assessment of the impact
Economic opportunities for local business during construction, including temporary accommodation providers, food and drink establishments, and general retail outlets	Livelihoods	Positive	Construction	Minor assessment of the impact
Economic opportunities for host landholders receiving lease payments/compensation	Livelihoods	Positive	Operations	Minor assessment of the impact
Contributions to local community facilities and infrastructure through the Community Benefit Sharing Program	Livelihoods	Positive	Construction and operations	Minor assessment of the impact

6.6.3 Assessment Approach

This section outlines the plan for developing the second phase SIA, in accordance with the requirements of the SIA Guideline (DPIE, 2021b). Accordingly, the second phase SIA will outline the key objectives as follows:

- Predict and analyse the extent and nature of likely social impacts against baseline conditions using accepted social science methods;
- Evaluate, draw attention to and prioritise the social impacts that are important to people;
- Develop appropriate and justified responses (e.g., avoidance, mitigation and enhancement measures) to social impacts, and identify and explain residual social impacts; and
- Propose arrangements to monitor and manage residual social impacts, including unanticipated impacts, over the life of the project" (DPIE, 2021b).

6.7 Hazards and Risks

This section provides a preliminary assessment of environmental hazards and risks that could arise during the operation of the Project. Specifically, it considers hazards and risks associated with hazardous materials, contamination, and bushfire.

6.7.1 Preliminary Hazard Analysis

A Preliminary Hazard Assessment (PHA) is required to assess potentially hazardous or offensive development under *State Environmental Planning Policy Resilience and Hazards 2021*. Clause 3.2 of the Resilience and Hazards SEPP defines a potentially hazardous industry as:

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

(b) to the biophysical environment,

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 battery proposed for the Project may 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 Preliminary Hazards Assessment 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 battery energy storage system at the Project Area, 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.

6.7.2 Bushfire

6.7.2.1 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 NSW RFS Bushfire Prone Land mapping confirms that the Project Area is not currently recognised as being bushfire prone (refer to **Figure 6-6**). The nearest areas of mapped bushfire prone land are located approximately 500 m to the west of the Project Area. Although the grassy woodland vegetation within and to south of the Project Area is not mapped as bushfire prone land it is likely to contribute to bushfire hazard and should be further considered.

It is also recognised that category 3 vegetation (including but not limited to grasslands and freshwater wetlands) will also likely be added to the bushfire prone land mapping at some stage to align with the requirements of the NSW RFS Guide for Bush Fire Prone Land Mapping (RFS, 2015).

6.7.2.2 Assessment Approach

The EIS will include a Bushfire Risk Assessment, which will aim to identify potential hazards and risks associated with bushfires / use of bushfire prone land, identified in Figure 6-6. The assessment will aim to demonstrate that the Project 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* (RFS, 2019).

The Bushfire Risk Assessment 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 Project Area and the community. These will include the identification of fire management zones and will be defined as:

- An Asset Protection Zone (APZ) is typically designed to separate a vulnerable asset from the bushfire hazard (vegetation/fuel). APZs do not eliminate the fire risk, but may lower it to an extent where fire control is more feasible or damage to the asset is reduced or eliminated. It also provides a defendable space for firefighting operations; and
- Strategic Fire Advantage Zones (SFAZ) provide a strategic fire advantage for the management of bushfires. They aim to complement the APZ and limit the spread of bushfires across the landscape.

Bushfire Prone Land Mapping

F6-6

Drawing No:	0646324s_NB_SR_G004_R2.mxd		Neoen Armidale BESS Scoping Report
Date:	01/09/2022	Drawing Size: A4	
Drawn By:	VN	Reviewed By: AS	Client: Neoen Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

0 50 100m

N

ERM

6.8 Water Resources

6.8.1 Existing Environment

The Project Area is located within the Macleay Catchment and the Murray-Darling basin. The Macleay Catchment covers an area of 11,450 km^2 (square kilometres) on the NSW mid-north coast. There are a number of watercourses within the Macleay Catchment located in proximity to the Project Area. There are small waterbodies located in the northern portion of the Project Area; however, there are no wetland areas, waterways, or lakes within the Project Area. A map of the local hydrology is provided in **Figure 6-7.**

The Project Area topography is characterised by gentle slope topography, at an elevation of approximately 1028.9 m. At the closest points, the Project Area is located approximately 900 m west of Commissioners Waters, 990 m south of Dumaresq Creek, 7.9 km west of Gara River, 8 km west of Gara Dam, 4.9 km north of Powers Creek, and 12 km east of Saumarez Creek. The confluence of Dumaresq Creek and Tilbuster Ponds forms the Commissioners Waters, that flows to the southeast of Armidale, later joined by a minor tributary, before reaching its confluence with the Gara River. All creeks and watercourses within the broader area are non-perennial.

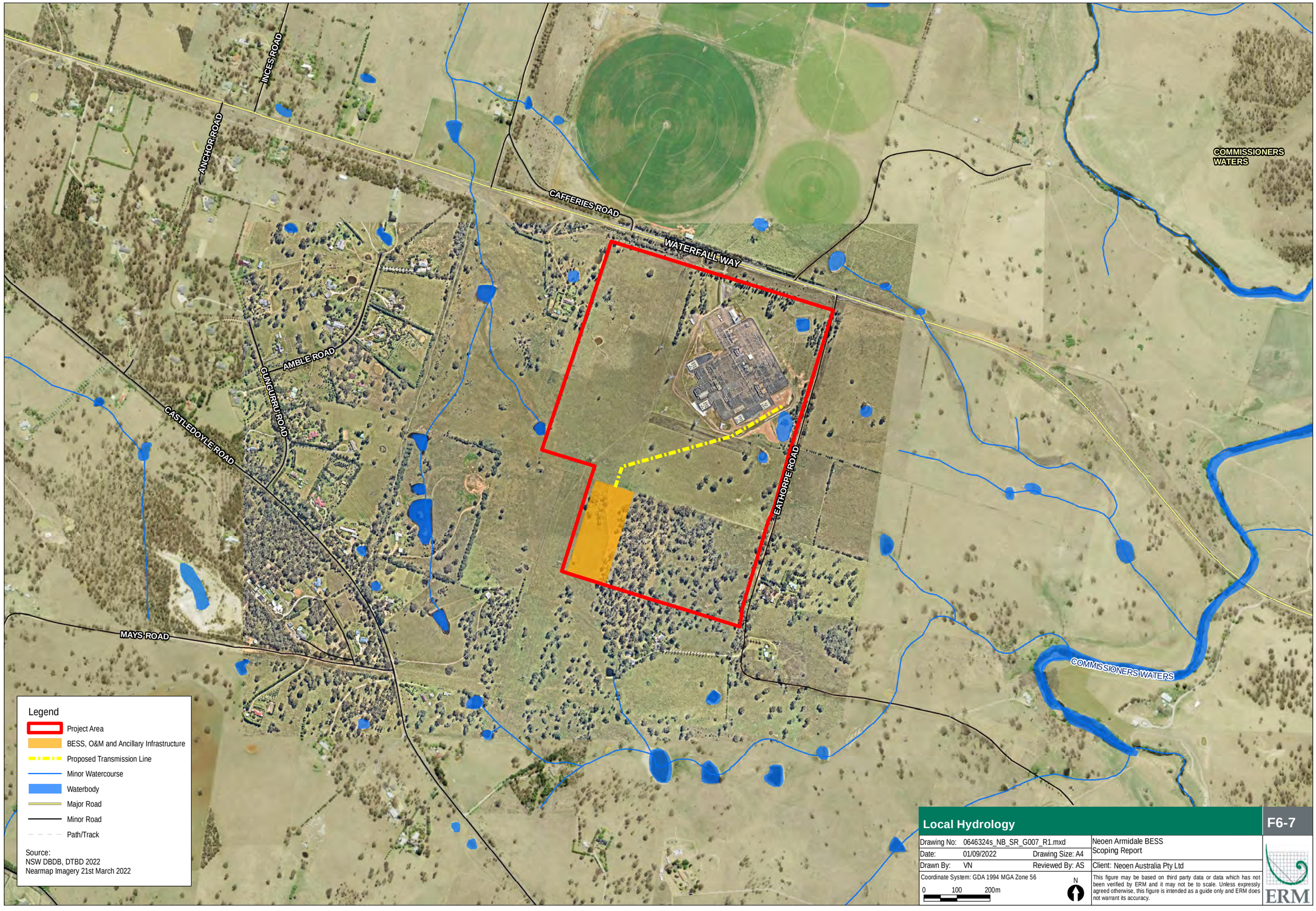
Under the *Water Management Act 2000*, water access licences and controlled activity approvals are required for certain activities. The Project may require water access licences; however, approval for controlled activities is not required for SSD projects.

6.8.2 Assessment Approach

The following approach to water resources will be undertaken as part of the EIS:

- Flooding and Hydrology Assessment:
  - A flooding assessment will be undertaken which will assess the existing flood behaviour through review of existing available data, developing computer models and defining flood levels, depths, velocities, and flood hazard category for the Project Area for existing topographic conditions;
  - Post development flood behaviour, including quantifying flood levels, depths, velocities and flood hazard category with the Project in place;
- Water Assessment:
  - A water impact assessment will be undertaken for the Project (forming a ‘Soils and Water Assessment), which will include a review of standard construction environmental management plans to ensure that impacts during excavation, road works, transport of machinery, etc. are adequately mitigated through avoidance, minimisation, and management.

Flooding and Hydrology, and Water assessments will consider the potential impacts of the Project on hydrology and will determine the need for further hydrological investigations. The assessment will also identify and quantify sources of water required during construction and operation of the Project and determine whether any water access licences under the Water Management Act 2000 will be required. All required licences and approvals will be obtained prior to the commencement of construction activities.



Local Hydrology

F6-7

Drawing No:	0646324s_NB_SR_G007_R1.mxd		Neoen Armidale BESS Scoping Report
Date:	01/09/2022	Drawing Size: A4	
Drawn By:	VN	Reviewed By: AS	Client: Neoen Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

0 100 200m

N

ERM

6.9 Land Resources

6.9.1 Existing Environment

The 1:100,000 Soil Landscape Map for Armidale (King, 2009) indicates that the site and surrounding area fall within a large area of the Middle Earth Soil Group. The Middle Earth Soil Group, specifically within the Project Area, comprises of erosional soils, with geological unit including the Permian to Late Carboniferous Coffs Harbour Association and some Devono-Carboniferous Sandon Association metasediments. These soils are typically moderately deep to deep, displaying very low natural soil fertility combined with hard setting topsoil.

The land and soil capability (LSC) assessment scheme gives an indication of the land management practices that can be applied to a parcel of land without causing degradation to the land and soil at the site and to the off-site environment (OEH, 2012). A preliminary review of the Soil and Land Capability Mapping data for NSW identified the following LSC within the Project Area (refer to **Figure 6-8)**:

- LSC Class 6 appears within the southern portion of the Project Area, where the battery and ancillary infrastructure are proposed. Class 6 has very severe limitations for a wide range of land uses and few management practices are available to overcome these limitations. Soil erosion can be very severe without adequate erosion control measures; and
- LSC Class 5 appears within the northern portion of the Project Area, where the TransGrid Armidale substation is located. Class 5 has severe limitations for high impact land management uses such as cropping.

A search of the Australian Soil Classification (ASC) Soil Type Map of NSW (OEH, 2017), reveals that the northern of the Project Area is mapped as Kurosol (Ku) and the southern is mapped as Kandosol (Ka). A soils map is provided in **Figure 6-9**, and briefly described below:

- Kandosols are non-texture contrast soils, having a sandy to loamy surface soil, grading to porous sandy-clay subsoils with low fertility and poor water holding capacity. Kandosols are found in poorly drained sites, with a low to moderate agricultural potential with moderate chemical fertility and water-holding capacity; and
- Kurosols are strongly acid (pH below 5.5), displaying a strong texture contrast between loamy surface horizons and the clayey subsurface horizon. Kurosols have low water holding capacity, very low agricultural potential and low chemical fertility.

Biophysical Strategic Agricultural Land (BSAL) is land with high quality soil and water resources capable of sustaining high levels of productivity. A review of the BSAL data showed that there are no areas of BSAL mapped within the Project Area. The closest area identified with BSAL is approximately 1.5 km west of the site, along a minor tributary of Dumaresq Creek.

6.9.2 Assessment Approach

An assessment of the soil and landform (forming a ‘Soils and Water Assessment’) of the Project Area will be undertaken for the EIS. The assessment will consider the impacts of soil disturbance from vegetation clearing and erosion from excavation works and the potential impacts to surrounding agricultural operations. The assessment will also propose appropriate mitigation measures during construction and operation of the Project.

CAFFERIES ROAD

WATERFALL WAY

AMBLE ROAD

GUNGURRU ROAD

CASTLEDOYLE ROAD

EATHORPE ROAD

Legend

- Project Area
- Major Road
- Minor Road
- Path/Track

Most Limiting LSC

- 4 - Moderate to severe limitations
- 5 - Severe limitations
- 6 - Very severe limitations
- Disturbed Terrain

Source:
NSW DBDB, DTBD 2022
Nearmap Imagery 21st March 2022

Land and Soil Capability Classes

F6-8

Drawing No:	0646324c_NR_SR_G008_R0.mxd		Neoen Eathorpe Battery Project Scoping Report
Date:	23/08/2022	Drawing Size: A4	
Drawn By:	VN	Reviewed By: AS	Client: Neoen Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

0 50 100m

N

ERM

CAFFERIES ROAD

WATERFALL WAY

AMBLE ROAD

GUNGURRU ROAD

CASTLEDOYLE ROAD

EATHORPE ROAD

KA

FE

KU

DE

Legend

- Project Area
- Major Road
- Minor Road
- Path/Track

Dominant ASC - Order

- Dermosols (DE)
- Ferrosols (FE)
- Kandosols (KA)
- Kurosols (KU)
- Not assessed

Source:
NSW DBDB, DTBD 2022
Nearmap Imagery 21st March 2022

Soils Map

F6-9

Drawing No:	0646324c_NR_SR_G009_R0.mxd		Neoen Eathorpe Battery Project Scoping Report
Date:	23/08/2022	Drawing Size: A4	
Drawn By:	VN	Reviewed By: AS	Client: Neoen Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

0 50 100m

N

ERM

6.10 Air Quality

6.10.1 Existing Environment

Land uses in the areas surrounding the Project Area are predominantly agricultural. Existing sources of air pollution are likely sourced from dust, vehicle emission, and machinery from agricultural production, and vehicle exhaust emissions from traffic along Waterfall Way. There may be a small increase in air contaminants during the colder months, due to smoke emissions sourced from solid fuel heating operations and during summer periods from dust storms or bushfires likely to occur in the region.

An air quality monitoring station (DPIE, 2021a) is located approximately 4.9 km northwest of the Project Area in Harris Park Football Park, on Kirkwood Street, Armidale and has recorded a 'good' index in the Air Quality Categories (AQC).

The nearest weather station to the Project Area is at the Armidale Airport (Station No. 056238), which lies at an elevation of 1079 m above sea level. A review of the Australian Bureau of Meteorology (BOM) climatic records from 1994-2022 indicate a mean summer maximum temperature of 26.2°C in January, and a mean winter minimum temperature of 1.3°C in July. Additionally, rainfall records from this same station indicate a mean annual rainfall of 772.2 mm, with the highest monthly maximum occurring in December (102.9 mm) and the lowest monthly maximum occurring in April (35.1 mm).

6.10.2 Assessment Approach

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.

The Project is not expected to have significant impacts on air quality in the region. Impacts during construction may relate to dust generation from construction works and traffic. Operational impacts are expected to the minimal.

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 (Office of Environment and Heritage, 2016).

6.11 Waste Management

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

7. CONCLUSION

A preliminary environmental assessment was undertaken to identify the potential matters associated with the proposed construction and operation of the Project. This considered:

- 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 future projects in the area;
- The ability to avoid, minimise and/or offset the impacts of the Project, to the extent known at the scoping stage; and
- The complexity of the technical assessment of the Project.

Detailed assessments will be undertaken for environmental aspects that present a potential high constraint to the development, and other aspects which require detailed assessment, but do not pose a high risk constraint. The assessments are outlined in **Table 7-1**.

Table 7-1 Summation of Assessment Approach

Level of Assessment	Aspect
Detailed	■ Biodiversity ■ Heritage - Aboriginal ■ Amenity – Noise and Vibration ■ Amenity – Landscape and Visual ■ Hazards and Risks – Preliminary Hazard Analysis ■ Hazards and Risks – Bushfire ■ Hazards and Risks – Flooding and Hydrology ■ Access - Traffic and Transport ■ Social Impacts
Standard	■ Heritage – Historic ■ Amenity – Air Quality ■ Land Resources (agriculture and soils) ■ Water Resources ■ Waste Management

The EIS will be prepared in accordance with the SEARs to be issued by DPE in response to this Scoping Report. All assessments (including specialist assessments) will be completed by taking into consideration consultation with stakeholders and industry best practice guidelines.

8. REFERENCES

ABS. (2021). *2016 Census Community Profiles*. Retrieved from Australian Bureau of Statistics: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/communityprofile/036?opendocument

AEMO. (2021). *Draft 2022 Integrated System Plan: For the National Electricity Market.* Australian Energy Market Operator.

AEMO. (2021). *Electricity Statement of Opportunities.* Australian Energy Market Operator.

AEMO. (2022). *2022 Integrated System Plan - For the National Electricity Market.*

AEMO. (2022). *2022 Integrated Systems Plan For the National Electricity Market.* Australian Energy Market Operator.

ARC. (2017). *Community Strategic Plan 2017-2027.* Armidale: Armidale Regional Council.

ARC. (2020). *Local Strategic Planning Statement: A Plan for 2040.* Armidale: Armidale Regional Council.

Australian Energy Regulator. (2021). *State of the Energy Market 2021.* Australian Competition and Consumer Commission.

Australian Government & NSW Government. (2018). *Western Sydney City Deal.* Commonwealth of Australia, Department of Infrastructure, Regional Development and Cities, and NSW Department of Premier & Cabinet. Retrieved from https://www.infrastructure.gov.au/sites/default/files/migrated/cities/city-deals/western-sydney/files/western-sydney-city-deal.pdf

Australian Government. (2021). *National Greenhouse Accounts Factors - Australian National Greenhouse Accounts.*

Australian Government. (2022). *Australia submits new emissions target to UNFCCC.* Department of Industry, Science and Resources.

Austroads. (2020). *Guide to Traffic Management.*

Austroads. (2022). *Austroads Guide to Road Design.*

CEC. (2017). *Battery Install Guidelines for Accredited Installers.* Clean Energy Council . Retrieved from https://www.acsolarwarehouse.com/wp-content/uploads/2016/04/battery-installation-guidelines.pdf

CEC. (2018). *Best Practice Guidelines for Implementation of Wind Energy Projects in Australia.* Clean Energy Council. Retrieved from https://assets.cleanenergycouncil.org.au/documents/advocacy-initiatives/community-engagement/wind-best-practice-implementation-guidelines.pdf

CER. (2018). *Large-scale Renewable Energy Target*. Retrieved from Clean Energy Regulator: http://www.cleanenergyregulator.gov.au/RET/About-the-Renewable-Energy-Target/How-the-scheme-works/Large-scale-Renewable-Energy-Target

Clean Energy Regulator. (2020, September 15). *Large-scale Renewable Energy Target market data*. Retrieved from Clean Energy Regulator: http://www.cleanenergyregulator.gov.au/RET/About-the-Renewable-Energy-Target/Large-scale-Renewable-Energy-Target-market-data#progress

CM. (2020). *Armidale Plan 2040.* Armidale: Armidale Regional Council.

DECCW, D. o. (2010b). *Code of Practice for archaeological investigation of Aboriginal Objects in New South Wales.*

DECCW, D. o. (2010c). *Aboriginal cultural heritage consultation requirements for proponents 2010.*

Department of Environment, Land, Water and Planning. (2017). *ν Community Engagement and Benefit Sharing in Renewable Energy Development: A Guide for Applicants to the Victorian Renewable Energy Target Auction.* Melbourne: Victorian Government.

Department of Industry, Science, Energy and Resources. (2021). *Australian Energy Statistics, Table O Electricity generation by fuel type 2019-20 and 2020*. Retrieved from energy.gov.au: https://www.energy.gov.au/publications/australian-energy-statistics-table-o-electricity-generation-fuel-type-2019-20-and-2020

DEWHA, D. o. (2017). ■ *Survey guidelines for Australia's threatened birds: Guidelines for detecting birds listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999.*

DoE. (2013). *Significant Impact Guidelines 1.1 - Matters of National Environmental Significance.*

DoP. (2011). *Hazardous and Offensie Development Application Guidelines: Applying SEPP 33.* Department of Planning. Retrieved from https://www.planning.nsw.gov.au/-/media/Files/DPE/Guidelines/hazardous-and-offensive-development-application-guidelines-applying-sepp-33-2011-01.pdf?la=en

DPE. (2018). *NSW Transmission Infrastructure Strategy.* Department of Planning and Environment.

DPE. (2018). *NSW Transmission Infrastructure Strategy - Supporting a modern energy system.*

DPIE. (2010). *Soil Landscapes of the Penrith 1:100,000 sheet*. Retrieved from SEED: https://datasets.seed.nsw.gov.au/dataset/soil-landscapes-of-the-penrith-1-100000-sheet0cca7

DPIE. (2016a). *Wind Energy Guideline for State Significant Wind Energy Development.* Department of Planning, Industry and Environment.

DPIE. (2016b). *Wind Energy: Visual Assessment Bulletin for State Significant Wind Energy Development.* Department of Planning, Industry and Environment.

DPIE. (2016c). *Wind Energy: Noise Assessment Bulletin for State Significant Wind Energy Development .* Department of Planning, Industry and Environment.

DPIE. (2019). *NSW Electricity Strategy.* Department of Planning, Industry and Environment. Retrieved from https://www.energy.nsw.gov.au/media/1926/download

DPIE. (2019a). *NSW Electricity Strategy.* NSW Department of Planning, Industry and Environment.

DPIE. (2020). *NSW Landuse 2017 v1.2*. Retrieved from SEED: Sharing and Enabling Environmental Data in NSW: https://datasets.seed.nsw.gov.au/dataset/nsw-landuse-2017-v1p2-f0ed#:~:text=The%202017%20Landuse%20captures%20how,biodiversity%20values%20and%20individual%20ecosystems.

DPIE. (2020a). *Net Zero Plan Stage 1: 2020-2030.* Department of Planning, Industry and Environment. Retrieved from https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/net-zero-plan-2020-2030-200057.pdf?la=en&hash=D65AA226F83B8113382956470EF649A31C74AAA7

DPIE. (2020a). *Net Zero Plan Stage 1: 2020-2030.* Parramatta: Environment, Energy and Science.

DPIE. (2020b). *NSW Electricity Infrastructure Roadmap.* Department of Planning, Industry and Environment. Retrieved from https://www.energy.nsw.gov.au/sites/default/files/2020-12/NSW%20Electricity%20Infrastructure%20Roadmap%20-%20Detailed%20Report.pdf

DPIE. (2020d). *NSW Electricity Infrastructure Roadmap.* NSW Department of Planning, Industry and Environment.

DPIE. (2021). *Draft New England North West Regional Plan 2041.* Department of Planning, Industry and Environment.

DPIE. (2021a). *Armidale air quality monitoring station.*

DPIE. (2021a). *State Significant Development Guidelines - Preparing a Scoping Report: Appendix A to the State Significant Development Guidelines.* Department of Planning, Industry and Environment.

DPIE. (2021b). *Social Impact Assessment Guideline for State Significant Projects.* Department of Planning, Industry and Environment.

DPIE. (2021c). *Cumulative Impact Assessment Guidelines for State Significant Projects.* Department of Planning, Industry and Environment.

DPIE. (2021d). *Undertaking Engagement Guidelines for State Significant Projects.* Department of Planning, Industry and Environment.

DPIE. (2021e). *Technical Supplement: Social Impact Assessment Guideline for State Significant Projects.* Department of Planning, Industry and Environment.

EMM. (2018). *New England Solar Farm, Aboriginal Cultural Heritage Assessment Report, report prepared for UPC Renewables Australia Pty Ltd.*

Energy NSW. (2021). *Renewable Energy Zones*. Retrieved from NSW Government: https://www.energy.nsw.gov.au/renewables/renewable-energy-zones

ERM. (2022). *Eathorpe Battery - Preliminary Biodiversity Assessment.*

GSC. (2018). *Greater Sydney Regional Plan: A Metropolis of Three Cities.* Sydney: Greater Sydney Commission. Retrieved from https://www.greater.sydney/metropolis-of-three-cities/introduction

GSC. (2018). *Western City District Plan.* Sydney: Greater Sydney Commission. Retrieved from https://www.greater.sydney/western-city-district-plan/introduction

GSNSW. (2022). *MinView*. Retrieved from Geological Survey of NSW: https://minview.geoscience.nsw.gov.au/#/?lon=148.5&lat=-32.5&z=7&l=

HillPDA. (2020). *Penrith Employment Lands Use Study.* Penrith City Council.

HLA. (2004b). *Phase 1 Environmental Site Assessment - Erskine Park Estate, Lots 92 & 93 DP 838541, 562-568 Mamre Road, Erskine Park.* HLA Enviroservices Pty Ltd.

HO and DUAP, H. O. (1996). *Regional Histories: Regional Histories of New South Wales. Sydney.*

Hunter, J. (2007). *Vegetation of Imbota and Yina Nature Reserves, Armidale, New South Wales.*

Infrastructure NSW. (2019). *Building Momentum: State Infrastructure Strategy 2018-2038.* Sydney: NSW Government.

Jacobs. (2021). *Armidale Terminal Station BESS - Preliminary Environmental Investigations.*

Jacobs. (2021). *Armidale Terminal Station BESS: Preliminary Environmental Investigations.* Neoen.

King, D. P. (2009). *Soil Landscapes of the Armidale 1:100,000 Sheet map and report, NSW Department of Environment and Climate Change, Sydney.*

Knuckey, G. . (2015). *An Aboriginal Cultural Heritage Assessment: Lot 2 DP1195562, 140 Stockton Road, Hillgrove, New South Wales. Unpublished report prepared for Eco Logical Australia on behalf of Hillgrove Mines Pty Limited. Remnant Archaeology: Armidale.*

Knuckey, G. (2016a). *An Aboriginal Heritage Impact Assessment: Armidale-Dumaresq Shire Road Recovery Project- Guyra-Ebor Road at Lot 6 DP878309 (800m), Rockvale Road at Lot 4 DP1135773 (1.3km) and, Wollomombi Falls Road at Lots 1-2 DP1074030 (1.3 km). Armid.*

Knuckey, G. . (2016b). *A Cultural Heritage Assessment: Metz Solar Farm on "Bayley Park", Waterfall Way via Armidale. Armidale Regional Council Local Government Area, New South Wales. .* Unpublished report for Eco-Logical Australia, to Infinergy Pacific. Remnant .

Knuckey, G. (2019). *An Aboriginal Cultural Heritage Assessment - UNE Solar Farm at the University of New England, Armidale. Armidale Regional Council Local Government Area, New South Wales. .* Unpublished report to Facilities Management Services, University of.

McBryde, I. (1974). *Aboriginal prehistory in New England: an archaeological survey of northeastern New South Wales. .* Sydney University Press: Sydney.

NGH. (2020). *Preliminary Constraints Assessment: Keri Keri Renewable Energy Project.* NGH.

NNTT. (2022). *Native Title Vision*. Retrieved from National Native Title Tribunal: http://www.nntt.gov.au/assistance/Geospatial/Pages/NTV.aspx

NSW EPA. (2014). *Waste Classification Guidleines .*

NSW Government. (2020). *COVID-19 Recovery Plan.* Sydney: NSW Government . Retrieved from https://www.nsw.gov.au/sites/default/files/2020-07/covid-19-recovery-plan-nsw-government.pdf

NSW NPWS, N. N. (1991). *The Bioregions of New South Wales: Chapter 13 The New England Tableland Bioregions.*

NSW Treasury. (2019). *NSW 2040 Economic Blueprint: Investing in the State's Future.* Sydney: NSW Government. Retrieved from https://www.treasury.nsw.gov.au/sites/default/files/2019-11/0909-02_EconomicBlueprint_Web.pdf

OEH. (2011). *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW Office of Environment and Heritage.* Retrieved from https://www.environment.nsw.gov.au/research-and-publications/publications-search/guide-to-investigating-a

OEH. (2012). *The land and soil capability assessment scheme.*

OEH. (2012). *The land and soil capability assessment scheme.*

OEH. (2016). *NSW Climate Change Policy Framework.* Sydney, NSW 2000: State of NSW and Office of Environment and Heritage. Retrieved from https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/nsw-climate-change-policy-framework-160618.pdf

OEH. (2017). *Digital soil mapping of key soil properties over NSW.*

Office of Environment and Heritage. (2016). *NSW Climate Change Policy Framework.*

Penrith City Council. (2017). *Community Plan .* Penrith: Penrith City Council. Retrieved from https://www.penrithcity.nsw.gov.au/images/documents/council/our-organisation/Community_Plan.pdf

Penrith City Council. (2020). *Local Strategic Planning Statement.* Sydney: Penrith City Council. Retrieved from https://hdp-au-prod-app-penr-yoursay-files.s3.ap-southeast-2.amazonaws.com/6216/4328/2191/LSPS_FINAL_V1_230320.pdf

Penrith City Council. (2021). *Employment Lands Strategy.* Penrith: Penrith City Council. Retrieved from https://www.penrithcity.nsw.gov.au/images/documents/employment_lands_strategy_final_2021_v3_accessible.pdf

Piper, A. (1989). *An archaeological assessment of a proposed subdivision off Cooks Road and Erskine Street, Armidale, N.S.W.* Unpublished report prepared for JS Hawkins and Co. Andrew Piper: Armidale, NSW.

PoA. (2017). *Paris climate agreement: a quick guide*. Retrieved from Parliament of Australia: https://www.pmc.gov.au/domestic-policy/taskforces-past-domestic-policy-initiatives/united-nations-framework-convention-climate-change-unfccc

RFS. (2015). *Guide for Bush Fire Prone Land Mapping.* NSW Rural Fire Service. Retrieved from https://www.rfs.nsw.gov.au/__data/assets/pdf_file/0011/4412/Guideline-for-Councils-to-Bushfire-Prone-Area-Land-Mapping.pdf

RFS. (2019). *Planning for Bush Fire Protection.* NSW Rural Fire Service. Retrieved from https://www.rfs.nsw.gov.au/__data/assets/pdf_file/0005/130667/Planning-for-Bush-Fire-Protection-2019.pdf

RTA. (2002). *Guide to Traffic Generating Developments .*

Sutton, S. . (1988). *Results of a survey for Aboriginal sites in the city of Armidale. .* Unpublished report prepared for the Council of the City of Armidale New South Wales.

UNFCCC. (2021). *Glasgow Climate Pact.* United Nations Framework Convention on Climate Change. Retrieved from https://unfccc.int/sites/default/files/resource/cma3_auv_2_cover%20decision.pdf

WSP. (2021). *Armidale Battery Energy Storage System (Armidale BESS) -Preliminary Operational Noise Impact Assessment .*

WSP. (2022). *Eathorpe Battery: Phase 1 Social Impact Assessment Scoping Report.*

APPENDIX A SCOPING SUMMARY TABLE

Scoping Summary Table

Level of Assessment	Matter	Scale of Impact [2]	Nature of Impact [3]	Sensitivity of receiving environment[4]	Mitigation Measures Required	Cumulative Impact Assessment	Engagement	Relevant government plans, policies and guidelines	Scoping Report Reference
Detailed	Biodiversity	High	Direct Cumulative Perceived	Sensitive (high ecological values of species / biodiversity present)	Likely	Yes	General	■ Biodiversity Conservation Act 2016 (NSW) ■ Fisheries Management Act 1994 ■ Biodiversity Assessment Method (BAM) (DPIE, 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 Nationally Threatened Species (various)	Section **6.3**
Detailed	Heritage - Aboriginal	Moderate	Direct Indirect Cumulative Perceived	Sensitive (cultural values, archaeological resources)	Likely	Yes	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, 2010) ■ NSW Heritage Manual – Assessing Heritage Significance (NSW Heritage Office, 2001)	Section **6.4.1**
Detailed	Amenity – Noise and Vibration	Moderate	Direct Cumulative Perceived	Sensitive (receptors)	Likely	Yes	General	■ Wind Energy: Noise Assessment Bulletin 2016 (NSW Government) ■ 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 **6.2.2**
Detailed	Amenity – Landscape and Visual	High	Direct Cumulative Perceived	Sensitive (receptors, townships, communities)	Likely	Yes	Specific	■ Landscape Institute and Institute of Environmental Management and Assessment, Guidelines for Landscape and Visual Impact Assessment Third Edition (2013)	Section **6.2.1**
Detailed	Hazards and Risks – Preliminary Hazard Analysis	Moderate	Direct Indirect Perceived	Sensitive (safety)	Likely	Yes	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) ■ Hazardous Industry Planning Advisory Paper No 7: Construction Safety (Department of Planning, 2011) ■ International Commission on Non-Ionizing Radiation Protection (ICNIRP) Guidelines (ICNIRP, 2020)	Section **6.7.1**
Detailed	Hazards and Risks – Bushfire	Low	Direct Indirect	Sensitive (safety)	Likely	No	General	■ Planning for Bushfire Protection 2019 – NSW Rural Fire Service (RFS, 2019)	Section **6.7.2**
Detailed	Access - Traffic and Transport	Moderate	Direct Indirect Cumulative	Sensitive (disturbance to other road users)	Likely	Yes	Specific	■ Guide to Traffic Generating Developments (RTA, 2002) ■ Austroads Guide to Road Design ■ Austroads Guide to Traffic Management	Section **6.5**

[2] Scale of Impacts – based on the severity of the impact, the geographical location and the duration of the impact as detailed in Appendix C of State Significant Development Guidelines – Preparing a Scoping Report (DPIE, 2021).
[2] Nature of Impact - type of impact, ie direct, indirect, cumulative, perceived, as detailed in Appendix C of State Significant Development Guidelines – Preparing a Scoping Report (DPIE, 2021).
[2] Sensitivity of the receiving environment – expressed in legislation, societal values, or vulnerability to change, as detailed in Appendix C of State Significant Development Guidelines – Preparing a Scoping Report (DPIE, 2021).

Level of Assessment	Matter	Scale of Impact [2]	Nature of Impact [3]	Sensitivity of receiving environment[4]	Mitigation Measures Required	Cumulative Impact Assessment	Engagement	Relevant government plans, policies and guidelines	Scoping Report Reference
Detailed	Social Impacts	Moderate	Direct Indirect Cumulative Perceived	Sensitive (social, environmental and economic values)	Likely	Yes	Specific	■ Social Impact Assessment Guideline for State Significant Projects (DPIE, 2021b) ■ Technical Supplement: Social Impact Assessment Guideline for State Significant Projects (Technical Supplement) (DPIE, 2021e)	Section **6.6**
Standard	Heritage – Historic	Low	Direct Indirect	Sensitive (heritage values)	Likely	No	Specific	■ Historical Archaeology Code of Practice (Heritage Council, 2006)	Section **6.4.2**
Standard	Amenity – Air Quality	Low	Direct Indirect	Sensitive (local air quality)	Likely	No	General	■ National Greenhouse Accounts Factors (Australian Government, 2021); and ■ NSW Climate Change Policy Framework (Office of Environment and Heritage, 2016).	Section **6.10**
Standard	Land Resources (Agriculture and Soils)	Low	Direct Indirect	Sensitive (agricultural land use)	Likely	No	General	■ Soil and Landscape Issues in Environmental Impact Assessment (OEH, 2000); ■ Landslide Risk Management Guidelines (AGS, No Date); and ■ Site Investigations for Urban Salinity (OEH, 2002). ■ Revised Large Scale Solar Guidelines (DPE, 2022)	Section **6.9**
Standard	Water Resources (Flooding and Hydrology)	Low	Direct Indirect	Sensitive (local hydrology and water quality)	Likely	No	General	■ Guidelines for Controlled Activities on Waterfront Land (DPI Water, 2018) ■ Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (DPI, 2003) ■ Policy & Guidelines for Fish Habitat Conservation & Management (DPI, 2013) ■ Managing Urban Stormwater: Soils and Construction (Landcom, 2004) ■ Approved Methods and Guidelines for the Modelling and Assessment of Air Pollutants in New South Wales (DECC, 2005) ■ Relevant Water Sharing Plans (DPI Water) ■ Floodplain Risk Management Guidelines (Department of Environment and Climate Change, 2016) ■ Floodplain Development Manual: The management of flood liable land (NSW Government, 2005)	Section **6.8**
Standard	Waste Management	Low	Direct Indirect	Sensitive (environmental values, safety)	Likely	No	General	■ Waste Classification Guidelines (DECCW, 2009)	Section **6.11**

APPENDIX B NEOEN – EATHORPE BATTERY COMMUNITY AND ENGAGMENT PLAN

NEOEN

EATHORPE BATTERY COMMUNICATIONS AND ENGANGEMENT PLAN

Version	V1 – Public
Released	August 2022
Document Owner	Joanna Murphy, Senior Project Manager

NEOEN

Document Control

Author	
Position:	Senior Project Manager
Incumbent:	Joanna Murphy
Reviewed by	
Position:	Head of Engagement
Incumbent:	Lisa Stiebel
Review Date:	26/08/2022
Approved by	
Position:	Head of Development
Incumbent:	Garth Heron
Approval Date:	26/08/2022
History	
Version:	V1.0 – Public
Nature of change:	-
Author:	Joanna Murphy
Date:	25/08/2022

NEOEN

CONTENTS

1. Project Background

1.1 Overview

Eathorpe Battery is battery energy storage project (the Project) that is proposed in the New England Renewable Energy Zone (REZ), approximately 6km east of Armidale.

The Project is proposed to connect into the adjacent existing Armidale substation at 132kV. Eathorpe Battery is proposed to be 100MW/200MWh and located centrally within the New England REZ in a key part of the NSW electricity network, linked to multiple high voltage lines. The proposed location of the Project is outlined in section 1.2. It is anticipated that a battery in this location can assist in supporting the NSW Government to achieve a smooth transition towards its goal of 8,000MW of renewable energy capacity.

Preliminary site investigations have been completed to understand any constraints and provide base line data. Investigations undertaken to date include a Winter biodiversity survey, social impact assessment, hydrology study and a preliminary desktop geotechnical assessment.

Neoen will seek feedback from Armidale residents and key stakeholders throughout 2022 and beyond to develop and refine the proposed design and plans for implementing the project.

1.2 Project Location

Eathorpe Battery is located approximately 6 km east of Armidale in NSW. The Project is proposed on one privately-owned freehold property, adjacent to the existing Armidale substation as shown in Figure 1. The Project is located within the New England REZ as shown in Figure 2.

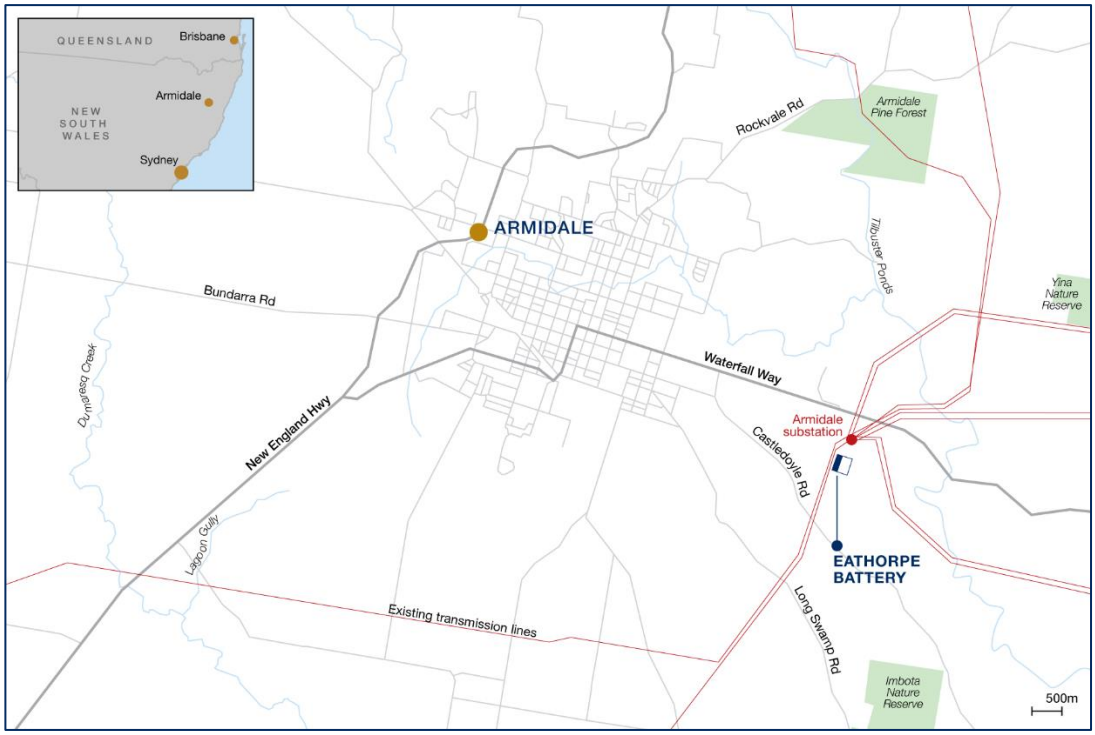


Figure 1 Project location in relation to Armidale, NSW.

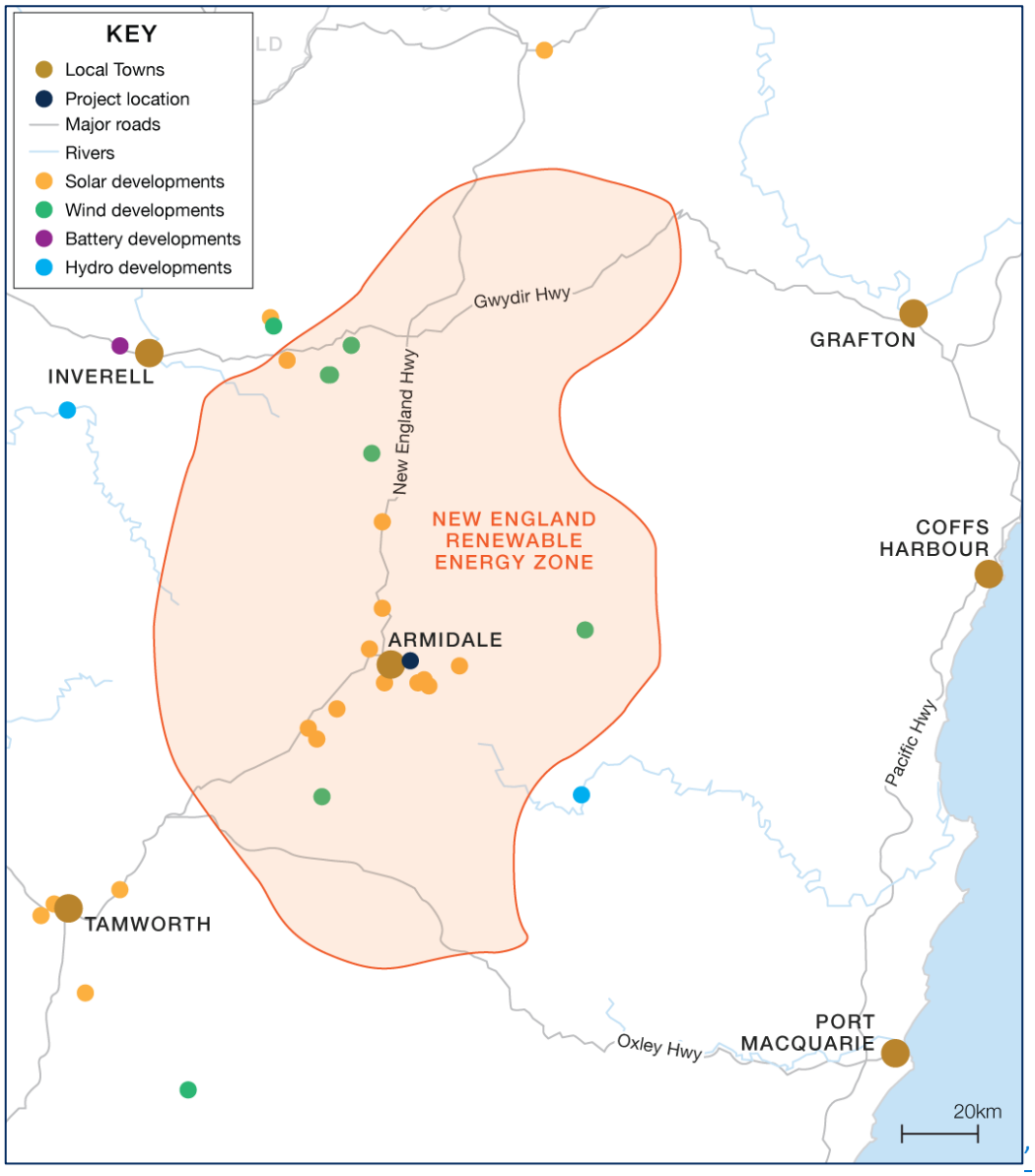


Figure 2 Project location within the New England Renewable Energy Zone

1.3 Neoen's Values and Vision

Neoen have a vertically integrated business model, meaning that we 'develop to own' our projects. This model is unusual in the industry, affording a clear advantage over competitors in respect to community engagement and relations. The projects undertaken are long term neighbours and participants in the local community for the lifetime of the project. As such, we establish and nurture relationships, embrace partnerships and innovation, confident that we will be there to see projects and mutual benefits to fruition.

1.3.1 Values

As a company, Neoen has a clear set of values that underpin and guide our work. These values are outlined in Table 1.

Table 1 Neoen organisational values

			
Integrity We operate with integrity, whatever we do, whenever and wherever we do it. We work with partners who abide by the same rules.	**Commitment** We uphold all our commitments, internal and external. We believe in hard work and take pleasure in seeing a good job well done.	**Audacity** We believe we can become a world leader in renewable energy. We have the audacity to operate globally, imagining, designing and implementing competitive, effective energy solutions.	**Esprit de corps** We are loyal to each other and form a close-knit team. We are proud of our company, our goals and our accomplishments.

How these organisational values translate into our external approach to building relationships with communities is described in Table 2.

Table 2 Neoen values in practice

Value & Principle	In Practice
Integrity **Mutual Respect**	• We provide a space for genuine dialogue where people can participate in respectful discussions.
Integrity **Transparency**	• We demystify the development process for local stakeholders and clearly communicate which points, when and to what extent they are able to influence decisions. • We are transparent about how and why decisions are made.
Integrity **Inclusiveness**	• We reach out to involve key stakeholders and the local community so they can play a part in decisions that affect them. • We provide a range of opportunities and avenues for ongoing and meaningful dialogue, allowing for detailed and timely discussions.
Commitment **Responsiveness**	• We communicate well and are responsive to emerging issues, concerns and ideas. • We provide timely information and ensure people have time to digest information, understand the Project and make informed decisions.
Commitment **Mutual Benefit**	• We seek shared outcomes of mutual benefit for the local host community over the long term.
Audacity **Innovation**	• We deliver engagement beyond regulatory conditions and compliance • We are open to and pursue bold and creative ideas and solutions tailored to and driven by the local context of the Project.

Esprit de corps Relationship building	• We build and nurture long term local relationships and make meaningful links with local leaders and organisations. • We provide many avenues for interaction across the Project lifecycle.
Esprit de corps Celebration	• We value and celebrate community; our own and those of the communities we work with. • We enjoy celebrating our successes together.

1.3.2 Safety First

Neoen have a policy of safety first across all Projects and activities. Staff and community safety is a baseline essential to ensure engagement can proceed. Wherever there is a conflict between the approach and guidelines outlined in this CEP and the safety of our staff or the general public then appropriate safe practices will take priority.

1.4 Project Opportunities

Stakeholder and community engagement activities are led by Neoen's Project Managers with support from local community relations specialists. We consider it important that trusting relationships are developed between the people on the ground who know the Project in detail and the stakeholders that are part of, and connected to, their region and local community.

1.4.1 Local Participation

One key area of focus is facilitating the involvement of local jobseekers and businesses in both the construction and operation of the Eathorpe Battery, to ensure strong regional economic benefits.

Neoen will deliver a Local Participation Plan for the Eathorpe Battery Project. This includes engaging with local contractors and businesses and consultation with industry groups such as JobLink Plus, TAFE Armidale, Armidale Business Chamber and Regional Development Australia. The purpose of this engagement is to discuss the Project and share preliminary information on the types of contractors and suppliers that are required for the construction and operations phases of a battery Project.

1.4.2 Indigenous Participation

During the development stage engagement with First Nation People will produce a co-developed Cultural Heritage Management Plan or a Cultural Heritage Arrangement.

Neoen has commenced engagement with representatives of the Anēwan /Anaiwan peoples, who will participate in the Aboriginal Heritage survey for the Project.

1.4.3 Education

Opportunities will been identified to work with local schools and colleges, both at primary and secondary, to support education in renewable energy generation, the electricity grid and electricity market.

In 2022 Neoen launched a Learning Hub with curriculum-linked materials for Years 5-6 and Years 7-8 to learn about electricity and renewable energy: neoenlearning.com

During operations, there will be opportunities for site visits from local schools in combination with and as an extension of the Learning Hub resources.

1.5 Project Development Summary to date

The Project site was first identified in late 2019 with landholders engagement commencing soon thereafter. Early feasibility works did not commence until late 2021 due to the Covid-19 pandemic. This CEP is being submitted, together with the Scoping Report for Eathorpe Battery to the NSW Department of Planning and Environment (DPE). Early feasibility studies undertaken include:

- November 2021: Desktop Environmental Investigation Report;
- January 2022: Preliminary noise study;
- April 2022: Detailed contour survey and boundary mapping; and
- June/July 2022: Desktop hydrology and geotechnical studies.

2. Communications and Engagement Plan

2.1 Purpose

The purpose of this Communications and Engagement Plan (CEP) is to ensure Project engagement activities meet the expectations of the Department of Planning and Environment NSW (DPE) as set out in the Undertaking Engagement Guidelines for State Significant Projects (November 2021). Table 3 shows how this plan responds to these expectations.

Table 3 How this plan responds to DPE expectations

DPE Expectation	
Provide clear and concise information about the project and its impacts	Section 5 details key messages, including specific messages for areas of particular interest, that will continue to be updated as the Project progresses, and new information becomes available.
Implement activities that encourage and facilitate participation	Section 3 provides a stakeholder analysis and Section 4.1 shows an implementation plan that aligns meaningful engagement opportunities with Project milestones.
Report back on what was heard, what has or hasn't changed, and why.	Section 2.2 outlines Neoen's commitment to seek ideas, feedback and sentiment for the Project and Section 4.1 details the activities that will support these commitments.

2.2 Principals of Engagement

Neoen will use the following principals to guide the development and implementation of this plan:

- **Inclusive** – Neoen will provide multiple opportunities for the community to provide feedback on the proposal. IAP2's Spectrum of Public Participation was used in the selection of the level of participation to define the public's role in the public participation process. Stakeholders have been mapped and the engagement approach informed by the Spectrum (see below).
- **Accessible** - Engagement opportunities will be offered across a range of easy to access platforms, including an online survey, multiple community events at different locations, collateral and project updates.
- **Transparent** –Neoen will be clear on negotiables and non-negotiables throughout the engagement delivery and will report on outcomes and share project milestones with stakeholders and community.
- **Consistent** – Agreed key messages will ensure both internal (project team) and external (stakeholders, media, community, stakeholders) are kept well informed and messages are clear and concise.

2.3 Communications and Engagement Objectives

The objectives of this plan are to:

- Foster a transparent and open approach to the development of Eathorpe Battery and ensure 'no surprises' for the local community. This in turn will assist Neoen to develop long-term relationships and partnerships with the community and key stakeholders.
- Provide opportunities for the community and key stakeholders to provide feedback on the Project that can be incorporated into the Project's design, build and ongoing operations.
- Keep the community and stakeholders informed about Eathorpe Battery through the provision of accurate, timely and factual communications.
- Raise awareness of the Project benefits, including environmental, economic, cultural and social for the region. As opportunities arise, these will be incorporated into this CEP.

2.4 Strategy and it's alignment to the NSW State Significant Development Assessment process

The purpose of community and stakeholder engagement is to gather meaningful feedback as provide opportunities to ensure this feedback is considered as part of the planning approvals process.

It is important that the opportunities to engage with the community and key stakeholders align with the NSW State Significant Development Assessment (SSD) process, and the intent of each stage is clear to manage the community and key stakeholder's expectations:

SSD Phase	**Engagement approach and key deliverables**
Request SEARs/project initiation	Ensure this plan provides a roadmap for how the community can meaningfully provide feedback through the approvals process. Targeted engagement with key stakeholders on high-level project info, with the outcomes of this to be included in the request for SEAR's. Begin developing relationships with key stakeholders and nearby landowners that will continue throughout the project
Prepare EIS	In preparing the EIS, the community surrounding the project site will be engaged one-on-one as investigations proceed and information is gathered to inform the EIS. It will also be important to undertake targeted engagement with key stakeholders such as the local Council and Traditional landowners to keep them informed of the project. Throughout this time, the broader community can continue liaising with the project team through the project inbox and hotline. Once more information is known about the project and the contents of the EIS, materials will be developed to support the

	exhibition period and key channels such as the website will be updated in preparing for exhibition
Exhibit Development Application (DA)	The exhibition of the DA provides an opportunity for the community and key stakeholders to provide feedback. The channels for how this is undertaken should be commensurate with the stakeholders level of influence and relationship to-date. For example, stakeholders such as the Local Council should be offered one-on-one briefings, whereas the broader community will be targeted through events such as community drop-in sessions.
Respond to Submissions	Following the exhibition of the DA, a Consultation Outcomes Report will be prepared that summarises what was heard during the exhibition and how Neoen will incorporate the feedback. A short, public-facing version of this report will also be published on Neoen's project website to reassure the community that their feedback has been listened to.
Assess DA	During these two phases, Neoen will liaise with the community and key stakeholders through the established channels, only in response to the community asking questions. No further broader consultation activities will be undertaken during this stage as there are no further opportunities for influence and feedback will not be incorporated into the decision-making process. Once a decision is known on the project, information and activities to communicate this will be prepared
Determine DA	
Proceed to construction	This plan will be revised to plan and prepare for engagement during the construction phase.

2.5 Engagement Influence

Engagement has been identified as a crucial component of the Project Plan to inform the future design and ensure longevity within the local community. Neoen is committed to open and transparent engagement throughout the process to inform the project. Importantly, engagement activities will coincide with key project milestones to ensure feedback is considered in the design process.

2.6 Negotiables and Non-Negotiables

Communication and engagement activities will be clear on the purpose and elements of the project that are able to be influenced. Table 4outlines the negotiable and non-negotiable elements of the project.

Table 4 Negotiables and Non-Negotiables

Negotiables	Non-negotiables
Engagement approach Neoen has agreed on a proposed engagement approach, based on the IAP2 Spectrum of Public Participation and designed an inclusive, transparent and accessible engagement plan to deliver an engagement led design outcome. The engagement approach is flexible and able to be tailored and scaled as required.	**Safety and compliance** The Project must meet relevant standards and risk assessment
Timing Neoen is committed to ensuring the engagement is meaningful and enough time is allowed for the community to be consulted.	**Name of the project** The name of the project (Eathorpe Battery) has been decided.
Community Benefit Sharing Program Engagement will be undertaken to inform the CBSP	**Site constraints** Identified and inherent site characteristics cannot be altered (e.g., geomorphology, hydrology, soil composition, topography)
Site Visual Amenity Some cosmetic elements of the design are able to be informed by community	**Legislative requirements** Obligations imposed through State or Federal legislation and policies.

3. Stakeholder Analysis

3.1 IAP2

The stakeholder analysis has utilised the internationally recognised IAP2's Spectrum of Public Participation to inform the level of participation for stakeholders throughout the project. The model is outlined in Figure 3 and Table 5 below.

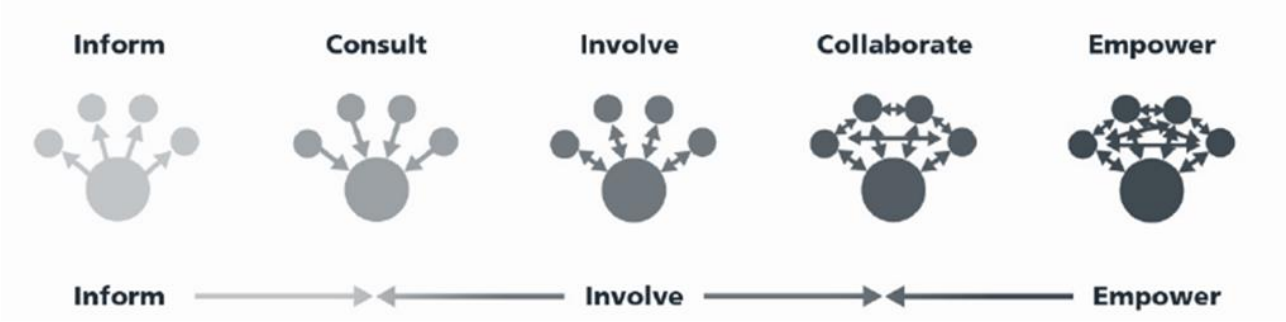


Figure 3 International Association of Public Participation – Spectrum of Public Participation

Table 5 International Association of Public Participation – Spectrum of Public Participation descriptions

INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and / or solutions.	To obtain feedback on analysis, alternatives and / or decisions.	To work directly with stakeholders throughout the process to ensure concerns and aspirations are consistently understood and considered.	To partner with the public / stakeholders in each aspect of the decisions making process including the development of alternatives and the identification of the preferred solution.	To place the final decision making in the hands of stakeholders/the public.

3.2 Stakeholders

Stakeholder classifications have been informed by the IAP2 Spectrum of Public Participation model. Table 6 provides an overview of stakeholder groupings and the approach to engagement at different tiers.

Table 6 Stakeholder Matrix

Stakeholder classifications	Stakeholders	Level of interest	Level of influence	Project Interests	Approach/ Activities
Tier one – Collaborate Stakeholders that have a high level of influence on the project and are likely to have a high level of interest in, or concern regarding the project.	• Armidale Regional Council • Elected Local Councillors • Host Landowners	High	High	• Coordination with initiatives and projects in the geographical area • Project benefits, including integration with other projects • Time constraints, costs and operational requirements associated with delivery of the final design • Community and social benefits of the project • Educational, social and environmental impacts • Implications for future Renewable Energy Projects • Community ownership and input into the design	• Proactive and consistent messaging • Early updates and regular briefings from all relevant subject matter experts • Engagement to ensure key issues are identified and addressed • Establish honest, transparent, and proactive communication • Briefings and information packs • Meetings and workshops • Site visits if required
Tier two - Involve Stakeholders who have a moderate level of influence on the project and are likely to have a high level of interest in,	• Elected representatives (State and Federal) • First Nations Representatives • Rural Fire Service (RFS)	High	Moderate	• Interfaces with current and future projects in the area • Impacts on surrounding community • Implications for future REZ and council projects	• Early engagement and input into issues and constraints mapping and the identification of key issues • Proactive and transparent engagement

Stakeholder classifications	Stakeholders	Level of interest	Level of influence	Project Interests	Approach/ Activities
or concern regarding the project.				• Design timeframe and cost • Ensuring consultation is transparent and feedback is incorporated • Increased traffic, cars and people in the area during construction • Meeting the needs and expectations of key groups and the broader community • Awareness of previous engagement outcomes and acknowledgement of input • Inclusive, engaging consultation opportunities	• Facilitate opportunities to generate involvement and collaborative thinking. • Set expectations for level of involvement • Briefings and information packs • Meetings and workshops
Tier three –Consult External stakeholders that have a legitimate level of interest in, or concern regarding the project. The project will most likely affect these stakeholders directly, literally or their values.	• Near Neighbours • Industry and business groups • Residents within close radius • TAFE's and Universities • Advocacy Groups • Community Organisations	Legitimate	Low to moderate	• Delivery timeframe • Relationship with other projects and key REZ sites • Meeting the needs and expectations of key groups and the broader community • Ensuring feedback is incorporated • Future consultation opportunities • The ability to use existing stakeholder networks to gather broader feedback • Impacts on neighbouring land	• Set expectations for level of involvement and clearly define aspects which are open for consultation • Provide clear communication materials and mapping that conveys key constraints and opportunities • Report back on how and where feedback was used • Project website • Community information stands • Static displays • Information leaflets

Stakeholder classifications	Stakeholders	Level of interest	Level of influence	Project Interests	Approach/ Activities
					• Presentations • Survey & Questionnaire
Tier four – Inform External stakeholders that include individuals or groups not directly affected by the project but have or should have an interest in it.	• Broder community who may not provide feedback now, but may show interest in the project later	Moderate	Low	• Broader awareness of the Project and its benefits • Construction impacts • Ability to comment and provide feedback • Balance of consultation inputs • Understanding of the design and opportunities for feedback, including future engagement opportunities	• Proactive and consistent messaging • Set expectations for level of involvement and clearly define aspects which are open for consultation • Diverse collateral to reach wider stakeholder group • Report back on how and where feedback was used • Project website • Community information stands • Information leaflets • Presentations • Survey • Media release and social media content

3.3 Issues and Risks

A number of communication and engagement risks have been identified and outlined in Table 7 below.

Table 7 Issues and risks

Issue/Risk	Mitigation measures
Public criticism of the engagement approach	• Inclusive, accessible and transparent engagement design and delivery is proposed to help address perceived or real community concern about the level of engagement. • IAP2 mapping to guide public participation. • Establish a project email to provide a level of access to the project team at 'all' times. • A record of comments will be maintained to ensure transparency. • Engagement summary to be prepared and published following each stage of engagement.
Creating false expectations about what project elements stakeholders can influence	• Be clear on the negotiable and non-negotiable elements of the project • Key messaging to be consistent • Timely responses to critical comments using key messages.
Limited feedback / involvement Community uptake is low and engagement is not meaningful	• Engagement periods may need to be extended or supported through paid advertising campaigns and alternate methods considered. • Using a diverse set of engagement tools will assist in capturing a diverse audience.
Timing - failing to meet community expectations	• Ensuring that people have ample time to participate in either the community pop-up, information session or online questionnaire or survey. • Engagement stages to be clearly communicated
Misleading or inaccurate information provided by external stakeholders or Project Team	• This issue can be mitigated by inviting key stakeholders to personal briefings early in the process and emphasising that continued briefings will be offered. • Ensure the website is included in all communications to create a single-source-of-truth about the project that anyone can reference. It can be easily updated between engagement activities to respond to any emerging issues.
Covid 19	• All activities to be planned in accordance with Government guidelines.

Issue/Risk	Mitigation measures
Government guidelines and mandates may impact project delivery.	
Minority groups trying to influence the outcome which may not represent the greater community	• Broad engagement with the Armidale region to ensure that feedback is captured from a diverse group of stakeholders.

4. Communication and Engagement

A considered approach to communication and engagement tools and channels will help to meaningfully engage local community, industry, and stakeholders.

4.1 Implementation Plan

Table 8 is the implementation plan outlining the activity, information, responsibility, and timing.

Table 8 Implementation Plan

Channel/tool	Information	Responsibility and timing
Project initiation tasks – Scoping Stage		
Project email and 1800 phone line	• Dedicated inbox (contact@eathorpebattery.com.au) for project and phone line 1800 966 020 has been established. Calls to this number are forwarded to the mobile of the person responsible for the Communications and Engagement Plan • Inbox to capture feedback from community members and answer questions • Website and project email to be included on all collateral	Complete
Undertake host landowner engagement (one-on-one)	• Establish relationships and open and transparent communication	Complete
Questionnaire/survey	• Community feedback survey developed. It is available online and as hard copies. Hard copies are distributed at community events and during one-on-one meetings and this has already happened at the project's first community drop-in session	Complete

Channel/tool	Information	Responsibility and timing
Project website	• Outlines project details and opportunities to provide feedback. Content to change as project progresses • Include link to questionnaire and surveys (as open) • Include a form for interested suppliers and contractors to submit an Expression of Interest for working on the project during the construction and/or operations phases • Links to project website included on all collateral	Complete
Initial stakeholder mapping	• Key stakeholder groups identified and relationships established. • Stakeholder register developed • Industry/business register developed • Email and mailing list created.	Complete
Develop Community and Engagement Plan (CEP)	• Develop a clear, timely plan that outlines the various channels and tools that will be used to connect and created meaningful conversation with stakeholders and community. This will be updated as the project progresses.	Complete
Establish Complaints Register	• Complaints form and process are on the project website	Complete
Community Information Session	• Community information session to announce the project and seek initial feedback via the survey.	Complete
One-on-one briefings with Council	• One-on-one briefings with Council	Complete
Activities to support the EIS development		

Channel/tool	Information	Responsibility and timing
Develop project collateral	• Create clear and specific communication such as factsheets, frequently asked questions, maps and visuals that caters for a broad audience and specific communication for targeted campaigns such as industry participation. • Communications materials can be refined or more materials created to proactively address potential issues.	Ongoing
Targeted engagement	Engage with: • Traditional Owners • Council & MPs briefings • Industry and business • Local area neighbours as investigations undertaken to inform the EIS • Schools and universities	Ongoing
Project hotline and inbox	• During the development of the EIS, the project email inbox and hotline will be used by the team and the community to address ad hoc enquiries. • As interaction happen, these will be logged in the stakeholder register	Ongoing
Media & newsletters	• Announcement of Project • Outlines the project and consultation activities to be undertaken. • Highlights community information session locations and times.	To be released in line with key project milestones
Community engagement session	• Community engagement session to provide project updates and seek initial feedback from the community.	To be completed ahead of submitting the EIS.
Hold host landowner functions and updates	• Residents in the local areas surrounding the Project are contacted throughout this period to ensure they are aware of the Project, receive up-to-date information at key milestones and are on the Stakeholder Register. • Contact made through phone calls, emails or letter box drops.	Ongoing

Channel/tool	Information	Responsibility and timing
Face to face near neighbour meetings	• One-on-one meetings held in the one km neighbourhood zone as well as with community groups, interest groups and key stakeholders.	Ongoing
One-on-one briefings Council and Government agency briefings	• One-on-one briefings with key stakeholders such as Council, Government agencies, directly affected landowners to seek feedback	To be completed during EIS phase
Identify options for Community Benefit-Sharing Program	• Community is invited to share their ideas for the community benefit sharing program by speaking with Neoen directly or via the community feedback survey. • Suggestions will be recorded in the Stakeholder Communications Register to establish common themes and ideas which will inform the outcome of the BSP	Ongoing
Job interest register & feedback survey	• Promote through available communication channels and through industry and business specific interest group meetings	Ongoing
Stage 3 – DA exhibition		
Project Website	• Project website updated with key documents such as factsheets planning permit application, project booklet, newsletters, bulletins, etc.	TBC by Neoen
One-on-one briefings Council and Government agency briefings	• One-on-one briefings with key stakeholders such as Council, Government agencies, directly affected landowners to seek feedback	TBC by Neoen
Job interest register & feedback survey	• Promote through available communication channels and through industry and business specific interest group meetings	TBC by Neoen
Identify options for Community Benefit-Sharing Program	• Community is invited to share their ideas for the community benefit sharing program by speaking with Neoen directly or via the community feedback survey. • Suggestions will be recorded in the Stakeholder Communications Register to establish common themes and ideas which will inform the outcome of the BSP	TBC by Neoen

Channel/tool	Information	Responsibility and timing
Promote feedback period and associated events	• Promote via outbound email to stakeholders on the register • Letterbox drop to landowners within 1 km of the project area • Advertisements in the local newspaper	TBC by Neoen
Face to face near neighbour meetings	• One-on-one meetings held in the one km neighbourhood zone as well as with community groups, interest groups and key stakeholders.	TBC by Neoen
Maintain feedback channels	• Establish channels for feedback during the exhibition process. This will include publishing information that will be used at community drop-in session on the project's website and including a survey for feedback on the website in case people can not make it to the community drop-in session.	TBC by Neoen
Reporting back to the community and key stakeholders		
Project Newsletters & Bulletins	• Summary of data gathered throughout consultation and the outcomes of the various consultation activities. Include how the consultation has informed design or plans to move forward. Share progress and project update with regular email notifications to database of subscribed contacts.	TBC by Neoen
Ongoing and regular tasks		
Update website with progress & news	• Include display boards, visuals, maps, factsheets planning permit application, project booklets, newsletters, bulletins, etc. that have been used in communication activities	TBC by Neoen
Project hotline and inbox	• During the development of the EIS, the project email inbox and hotline will be used by the team and the community to address ad hoc enquiries. • As interaction happen, these will be logged in the stakeholder register	Ongoing
Presentation to local business & community groups	• Provide update on project progress and proposed plan. Communicate 'what we heard' and what are the next steps	TBC by Neoen

Channel/tool	Information	Responsibility and timing
Develop Local Participation Plan	• Information to be supplied by Neoen	TBC by Neoen
Hold host landowner functions & updates	• A smaller group environment to create closer relationships and share project information throughout the project	TBC by Neoen
Media releases and local print media ads	• Notification for community information sessions as well as community survey results and 'what we heard'. Highlight what we heard.	TBC by Neoen

5. Key Messages

5.1 Overarching

- Neoen is proposing to design, deliver and operate the Eathorpe battery, which will store energy and discharge it into the grid whenever it's needed.
- Eathorpe Battery can reduce costs for consumers in three ways:
  - supporting more wind and solar, which are now the cheapest forms of power
  - increasing competition in ancillary markets which lowers (or reduces) electricity prices
  - helping to avoid blackouts and the associated costs.
- The Eathorpe Battery is expected to bring significant community benefits, jobs and investment to the local and regional economy.

5.2 The Project

- The Eathorpe Battery is a 100MW / 200 MWh battery, capable of storing energy and reinjecting it into the grid.
- The battery will provide a variety of services including frequency control and load shifting, which are both necessary for the development of more renewable energy.
- The power of the battery is likely to be contracted for an optimal use of the technology.
- The project will be privately financed by Neoen.
- As with most projects of this size, there will be some impacts during construction. We will work with the community, neighbours and council to minimize these impacts as much as possible.
- Neoen has commenced background investigations into the feasibility of the design and will seek feedback from local residents, industry and key stakeholders to inform the design.

5.3 Engagement

- Neoen will be working with the community throughout the project to understand local concerns and aspirations, and ensure we minimise any impacts. We encourage the community to provide feedback by completing the online survey: https://www.surveymonkey.com/r/eathorpebattery
- Engagement with, and feedback from, the Armidale community will help to inform the design of the project.
- Engagement activities have been carefully planned to coincide with project milestones and allow enough time for an engagement led design process to take place.
- Engagement activities include various pop-up events, questionnaires and surveys, and information on website.
- The community can speak to a member of the project team at any time in the project by emailing contact@eathorpebattery.com.au or calling 1800 966 020

5.4 Hot Topics

5.4.1 Local impacts and employment opportunities

- During construction, we expect some localised traffic, noise, and dust impacts. However, we will be managing these to minimise impacts as much as possible. Following installation, the battery will be visible at the site and will look like an enclosure of white containers.
- It is expected the Eathorpe Battery will create 90-100 construction jobs and approximately three full-time ongoing positions. It will also provide opportunities for local suppliers, businesses, schools, and community groups.
- A Community Benefit-Sharing Scheme will be established for the lifetime of the project. We're keen to hear from the community about what form this could take.

5.4.2 Safety and Environment

- The project is considered to be a State Significant Development (SSD). This means that a Development Application (DA) will be submitted to the NSW Department of Planning and Environment (DPE) for approval.
- The Eathorpe Battery will meet all relevant standards for fire safety, and we are working with the local fire authority to ensure the project also meets their requirements.
- We make a commitment that all above-ground infrastructure will be removed, and the site rehabilitated when the project ceases to operate. After removal, a large percentage of the material in the batteries will be reclaimed or recycled; over 60% of materials especially critical minerals will be recovered for re-use.
- The Eathorpe Battery is using similar technology to the batteries that are being increasingly installed in homes, just on a larger scale. There are no known health risks associated with properly maintained large-scale battery installations.
- Monitoring of dust levels during construction is a basic requirement of each project. Dust generating activities are assessed during windy conditions and are stopped and rescheduled where adequate control of dust generation cannot be achieved.
- Visual observation of machinery is undertaken during site inspections in addition to daily pre-start checks which ensure all machinery has appropriate emission control devices, is in good working order and is maintained correctly.

6. Frequently Asked Questions

How long will it take to build the battery?

Once approved and financed, construction of the Eathorpe Battery will take around 12-18 months.

How big will it be?

Once completed, the battery and associated infrastructure will cover up to approximately 3 hectares of land. The battery cubicles are normally around 2.5 meters tall.

Where will it be located and why?

The Eathorpe Battery will be located near the existing Armidale substation, approximately 6 km east of Armidale CBD.

The land is ideal because it is very close to the existing Armidale Substation.

The Eathorpe Battery will support in stabilising the grid and the increasing number of renewable projects in NSW.

What technology is being used for the project?

The Eathorpe Battery will utilise lithium-ion batteries and associated equipment from leading manufacturers. These manufacturers are selected through a separate competitive tender process.

In principle, the facility will be an orderly arrangement of battery cabinets, inverters and control systems including electrical and data cabling. The battery packs are enclosed in custom designed, dust and waterproof 'cabinets' made of steel. The cabinet colour will be white, or light coloured to assist with heat management and each cabinet has its own internal thermal management system.

What is the lifecycle of the battery?

Current battery technology comes with an industry-leading 20-year warranty. The batteries will still retain the majority of their capacity during this period and will be capable of operating beyond it depending on market conditions and other factors.

How does it work?

The Eathorpe Battery will store energy in times of high production and release energy in times of high demand, similar to how a battery on a home solar system works. It will also help to stabilise the grid in a few different ways. It has an emergency response mode to prevent blackouts and it can maintain voltage and frequency levels.

What are the benefits of battery energy storage?

In making the transition from fossil fuels to renewables, the ability to store and dispatch energy will play a key role. Pumped hydro is an example of longer-term storage that is suitable for storing energy and releasing it over days or weeks. However, pumped hydro has a relatively slow 'ramping' time and is less suitable for providing rapid-response services to grid contingency events such as outages or heat waves (with high demand created by air-conditioning). Battery storage, such as lithium-ion technology, fills this key short-term response role.

These are some of the functions a grid-scale lithium-ion battery may be expected to perform:

- Network security services including Frequency Control Ancillary Services, and Network Loading Control Ancillary Services
- System Restart Ancillary Services

- Arbitrage (spot market trading)
- Peak shaving
- Block/load shifting
- Renewable firming and smoothing
- Virtual inertia.

Many of these services have been provided by coal and gas generators in the past, but as their business models become unviable and they close down, battery energy storage can, and is, being used to deliver these critical services.

7. Evaluation

Table 9 outlines the evaluation measures to be applied to the CEP. Importantly, the plan is scalable and flexible throughout the stages of engagement and the evaluation measures will help inform if additional engagement is required.

Neoen is committed to continually improving the approach to and identifying opportunities for the community to shape future plans and initiatives. Where possible, monitoring and evaluation activities will be designed to complement other engagement activities. A detailed monitoring and evaluation plan would be developed if the Project is successful in obtaining its planning permit.

Evaluation is not a stand-alone or isolated process rather; evaluation is an integral and on-going component of every communication and engagement activity or process. Consequently, evaluation at the beginning of the consultation planning process is as important as it is during and following implementation. Evaluation is a vital element for forward planning and can provide a strategic basis for decisions about issues, including the allocation of resources.

The evaluation process consists of two components (as seen in Table 13):

- Outcomes – increased satisfaction, awareness or attitudinal change
- Outputs – measuring and monitoring what is actually produced, released or implemented

Table 9 Evaluation methods

Evaluation	What will be achieved?
Outcomes	• General community awareness and understanding of the Project. • Long term broad local social acceptance of the battery • Widespread understanding among Project team, employees, residents, stakeholders and broader community of Neoen's commitment to engaging with the community • General satisfaction among stakeholders that they have been given the opportunity to express their views and that they have been heard • Expectations and issues managed effectively through communications and meaningful engagement • Strong local relationships and trust
Outputs	• Data collected from Feedback Survey throughout the Project • Issue timely and relevant media releases, Project bulletins, email broadcasts, direct mail letters and FAQs • Update website with timely and relevant information • Organise Community Information Days, Information Sessions, and other face-to-face engagement events and briefings • Schedule regular briefings with key stakeholders i.e. Council. • Ensure Stakeholder Database is regularly updated, so that relevant stakeholders receive Project updates • Complaints register • Benefits sharing model tailored to the local context

Objectives	Evaluation measure
Inform communities and stakeholders about the project, its vision and progress at key milestones Create excitement, pride and ownership in the establishment of the park	• Analytics on website, social media interaction, number of surveys completed • Number and sentiment of community members spoken to at pop ups • Number of email enquiries through project inbox • Consistent growing interactions and interest between all stages • Media reports/articles on the project
Ensure community expectations, desires and needs are considered Improve Council's knowledge of community expectations, desires and needs with regards to environment, social and economic Raise awareness of the benefits, including ensuring the environmental, economic, cultural and social sustainability values for the region Address community and key industry group concerns and raise awareness about opportunities	• Feedback received is within the negotiables of the project • Potential options and the draft Master Plan receive positive community feedback • Potential options and draft Master Plan align with feedback received in previous stages • Diverse Community Reference Group and Excellence Advisory Panel are selected to help guide the project • Positive community and stakeholder sentiment towards the project • Endorsements from community, business, environmental and cultural groups • Engagement approach is positively received and whole of Sunshine Coast is provided opportunities to give feedback

NEOEN

Appendix A

Newsletters, Letters & Information Booklets

NEOEN

Eathorpe Battery - Community Survey

*** 1. Your Contact information - if you'd like us to keep in touch (we won't share your details with anyone)**

Full name

Email

Telephone

Address

Postcode

2. How did you hear about the project?

- ○ In the news
- ○ Social media
- ○ Word of mouth
- ○ Flyer in letterbox
- ○ Other (please specify)

3. What is your level of interest in the project?

0 5 10 (sliding scale)

4. What is the reason for your interest in the project?

- ○ I live nearby in Armidale
- ○ I have a cultural connection to Anaiwan country
- ○ I'm interested in renewable energy
- ○ I'm looking for employment
- ○ Other (please specify)

5. How would you rate your attitude towards the proposed Eathorpe Battery?

Oppose Neutral Support (sliding scale)

6. What do you consider the benefits of battery storage? Tick as many as apply.

- They support renewable energy
- They stabilise the grid and help prevent black-outs
- They bring investment into the region
- They help to reduce energy costs for consumers
- They can provide educational opportunities
- Other / comments

7. What, if any, concerns do you have about the Eathorpe Battery?

(Open text box)

8. How do you think these concerns could be addressed?

(Open text box)

9. What opportunities do you think Eathorpe Battery presents?

(Open text box)

10. We will set up a community benefit-sharing scheme - what kind of community benefits would you like us to explore?

- Environmental or biodiversity project
- Education about renewable energy for local schools
- Support for local community building initiatives
- My idea is....
- (Open text box)

11. Is there any specific information that would help you to better understand the project?

(Open text box)

12. Would you like us to keep you informed about the project?

- yes
- no

13. If yes, how would you like to be kept informed?

- Email

- Phonecalls
- Personal meeting
- Newsletters
- Local media
- Other (please specify)

Website

The Project website (https://www.eathorpebattery.com.au/) was set up in May 2022 to provide clear and accessible information about the Project.

These include but are not limited to:

- Complete a feedback survey: https://www.surveymonkey.com/r/eathorpebattery
- 'Work with us' - register job or supplier interest: https://www.eathorpebattery.com.au/work-with-us/
- Community events and updates published on the news page: https://www.eathorpebattery.com.au/news/
- View Project documents: https://www.eathorpebattery.com.au/documents/
- View information about the planning process: https://www.eathorpebattery.com.au/our-process/
- FAQ's to provide quick access to key Project information. https: //www.eathorpebattery.com.au/faqs/

EATHORPE BATTERY NEOEN

NEWSLETTER

September 2022

June Community Drop-In Session

On Thursday 30 June, Neoen hosted the project's first information session in the Armidale Traffic Education Centre which had posters, maps, info booklets as well as feedback surveys to complete. Thanks to all who attended and shared feedback. If you couldn't make it, please feel free to get in touch with any questions.

Another session will be held in 2023 ahead of the Development Application submission. Date and time will be sent in the next newsletter and available on the website.

Planning Process

The project is classified as a State Significant Development (SSD). A Scoping Report will be submitted to the NSW Department of Planning and Environment (DPE) shortly who will issue a list of requirements that Neoen and our specialist teams must address. This will inform the next stage, called Environmental Impact Assessment (EIS), which is submitted along with the DA.

You will be able to view the Scoping Report on NSW DPE's Planning Portal in the near future.

Neoen Learning Hub

As part of our community engagement, our Learning Hub is an educational resource for local schools that has curriculum-linked materials for Years 5-8 to learn about electricity and renewables.

Developed by an experienced science curriculum writer, each module contains three topics– each with a video, interactive activities and lesson plans.

You can view everything at **neoenlearning.com**.

NEOEN

Learning Hub

Take your students on a journey of discovery into the wonders of electricity and renewable energy

Share your feedback with us

Please fill in a feedback survey so we can best understand your view and any concerns you may have about the Eathorpe Battery project.

To share your feedback, scan the below QR code with your phone's camera or visit **surveymonkey.com/r/eathorpebattery**.

Registering Your Interest

If you are interested in learning what types of jobs and suppliers are typically required throughout construction and operations, or you wish to register your interest, please visit our website at **eathorpebattery.com.au/work-with-us** or scan the below QR code with your phone's camera.

contact@eathorpebattery.com.au 1800 966 020 eathorpebattery.com.au

EATHORPE
BATTERY

Community Information Booklet

June 2022

NEOEN

eathorpebattery.com.au

Joanna Murphy, Project Manager

contact@eathorpebattery.com.au

1800 966 020

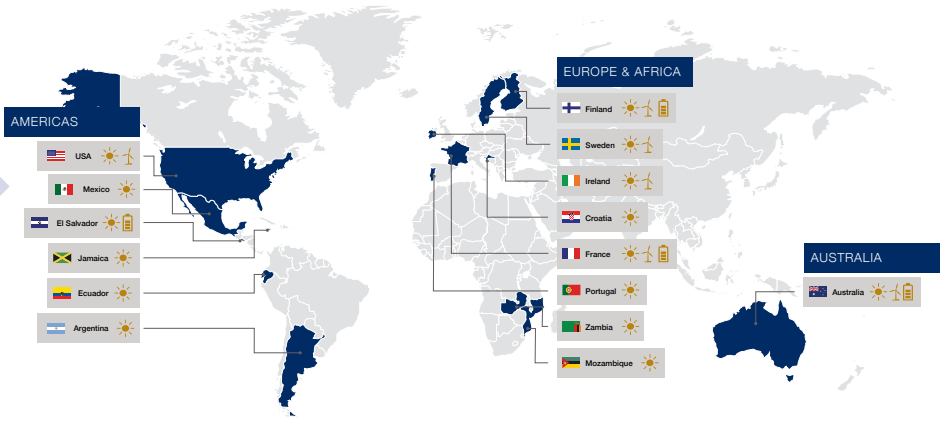
NEOEN

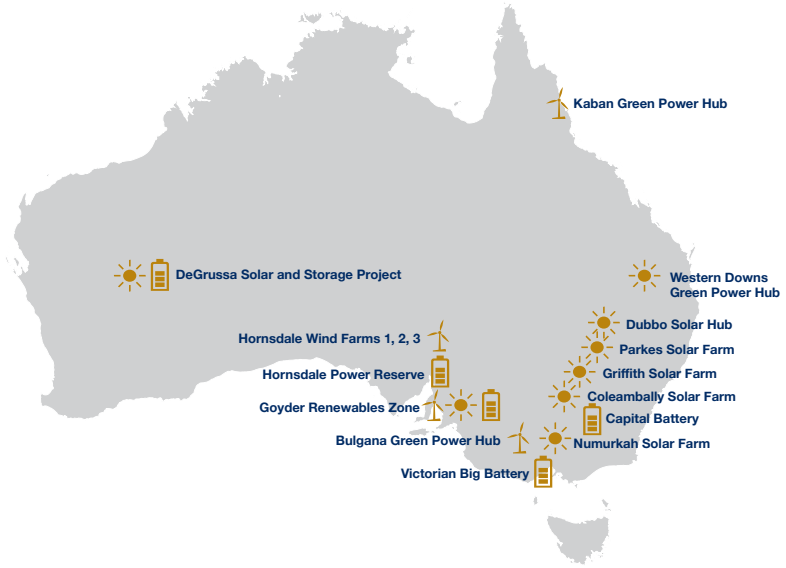
GLOBALLY

The company is headquartered in Paris, France, and has five Australian offices – in Brisbane, Sydney, Canberra, Adelaide and Perth.

We operate across renewable energy technologies including solar, wind and storage in Europe, the Americas, Africa, and Australia.

Neoen's total capacity in operation and under construction is currently 5.4 GW and we are aiming for 10 GW by the end of 2025.





LOCALLY

Neoen Australia began operations in 2012. Over the last ten years, the company has initiated the development of more than 2.5GW of solar and wind projects through organic growth, local partnerships and strategic acquisitions.

Neoen produce green electricity from renewable sources such as sunlight and wind using mature, tried and tested technologies. We are also leaders in energy storage.

NEOEN

DELIVERING CHEAPER ENERGY

ENERGY AUSTRALIA
COLEAMBALLY SOLAR FARM

Providing energy output of 100 MW of the 150 MW solar farm for 12 years.

EnergyAustralia
LIGHT THE WAY

DEGRUSSA MINING
WESTERN AUSTRALIA

DeGrussa is the largest off-grid solar battery storage project in Australia. It powers a gold and copper mine in remote WA. Commissioned in June 2016, it provides a solar and storage solution to the majority of the mine's daytime electricity requirements, offsetting up to 20% of total diesel consumption annually.

COLES
AUSTRALIA-WIDE

Coles has signed an agreement that will source large-scale generation certificates (LGCs) from Neoen's portfolio of renewables located across New South Wales, Queensland, Victoria, South Australia and Western Australia. The deal will help Coles towards its target of 100% renewable energy by 2025.

coles

WORLD'S FIRST BIG BATTERY
HORNSDALE POWER RESERVE

FIRST STAGE TOOK LESS THAN SIX MONTHS TO BUILD

- 150MW Lithium-ion battery located next to Hornsdale Wind Farm
- Owned and operated by Neoen
- Installed and maintained by Tesla

- Provides grid stability services
- Saved SA energy consumers over $150 million in its first two years
- Now testing grid scale inertia services in a world-first

REDUCES RISK OF BLACKOUT IN SOUTH AUSTRALIA

AUSTRALIA'S LARGEST BIG BATTERY
VICTORIAN BIG BATTERY

- Up to 300MW Lithium-ion battery located next to Moorabool substation in Geelong
- Owned and operated by Neoen
- Installed and maintained by Tesla

TOOK LESS THAN TWELVE MONTHS TO BUILD

CONTRIBUTING TO VICTORIA'S **40% RENEWABLES TARGET BY 2025**

- Enabling more wind and solar, now the cheapest forms of power
- Allowing more power to flow into the state, increasing competition and pushing electricity prices down
- Helping to avoid blackouts and the associated costs

WE OWN & OPERATE OUR PROJECTS

Eathorpe Battery

The Eathorpe Battery will be managed from Neoen's 24/7 Operational Control Centre in Canberra, which currently operates our 14 existing projects across Australia. This office coordinates with local maintenance contractors for safe, effective and compliant operations.

Neoen's Portfolio

Neoen develops renewable energy projects to own and operate them – not to on-sell them. With over 2.5GW of operating projects connected to Australia's National Electricity Market (NEM), our asset and operations team play an important role in managing our power plants.

Our Operational Control Centre oversees our interactions with the National Electricity Market: a wholesale electricity market which spans the eastern and south-eastern coast of Australia.

The market works as a pool or spot market, where power supply and demand are instantly matched via a centrally coordinated dispatch process overseen by the Australian Energy Market Operator.

EATHORPE
BATTERY

EATHORPE BATTERY FACTS & FIGURES

100MW
power capacity

200MWh
energy storage

Stores an industrial amount of energy, discharges quickly on demand

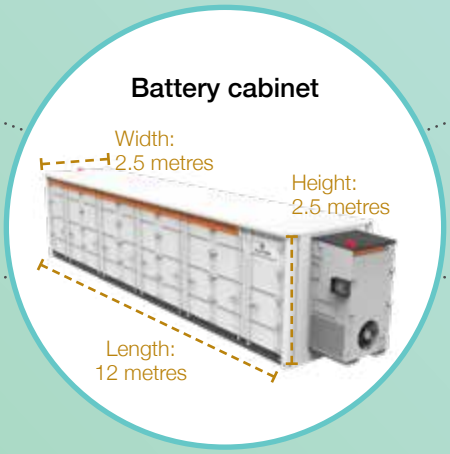
14,000x
more capacity than a household battery

BATTERY TECHNOLOGY

Battery packs are enclosed in custom designed, dust and waterproof 'cabinets' made of galvanised steel. Cabinet colour is white or light coloured to assist with heat management and each cabinet has its own internal thermal management system.

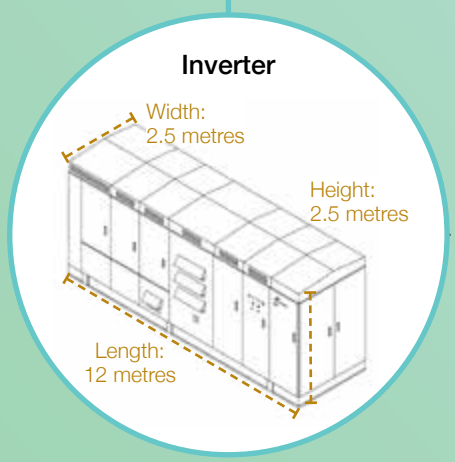
Will conform to electricity industry standards

Likely to be lithium-ion battery packs enclosed in steel cabinets, similar to shipping containers



Will use an industrial inverter to convert DC power to AC when discharging (vice versa when charging)

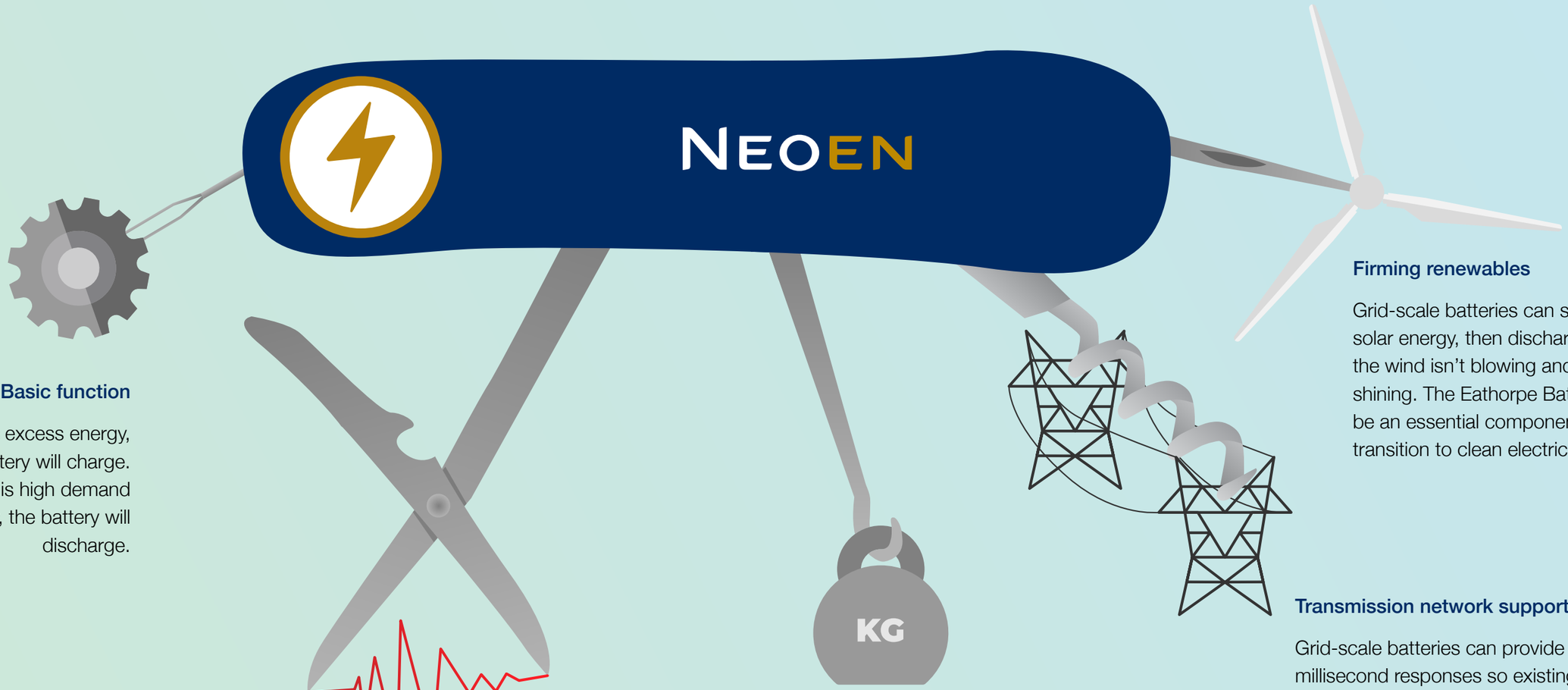
Will meet all safety and bushfire risk requirements



Battery brand to be determined

Inverters are made from galvanised steel, and may exist as one single 20ft container or a few outdoor cabinets on concrete slabs.

WHAT CAN A BIG BATTERY DO?



Basic function

When there is excess energy, the battery will charge. When there is high demand for energy, the battery will discharge.

Frequency support

To maintain the stability of the system, the grid requires frequency control services. The battery discharges electrical power into the network in response to frequency changes. The battery can lower the cost of these service markets which results in lower electricity prices for everyday consumers.

Inertia

As with vehicle suspension on an uneven road, inertia services are essential for stabilising the grid. The advanced power inverters associated with a big battery can emulate the inertia services that are currently provided by an ageing fleet of fossil fuel power plants. This service is currently being trialled at our Hornsdale Power Reserve.

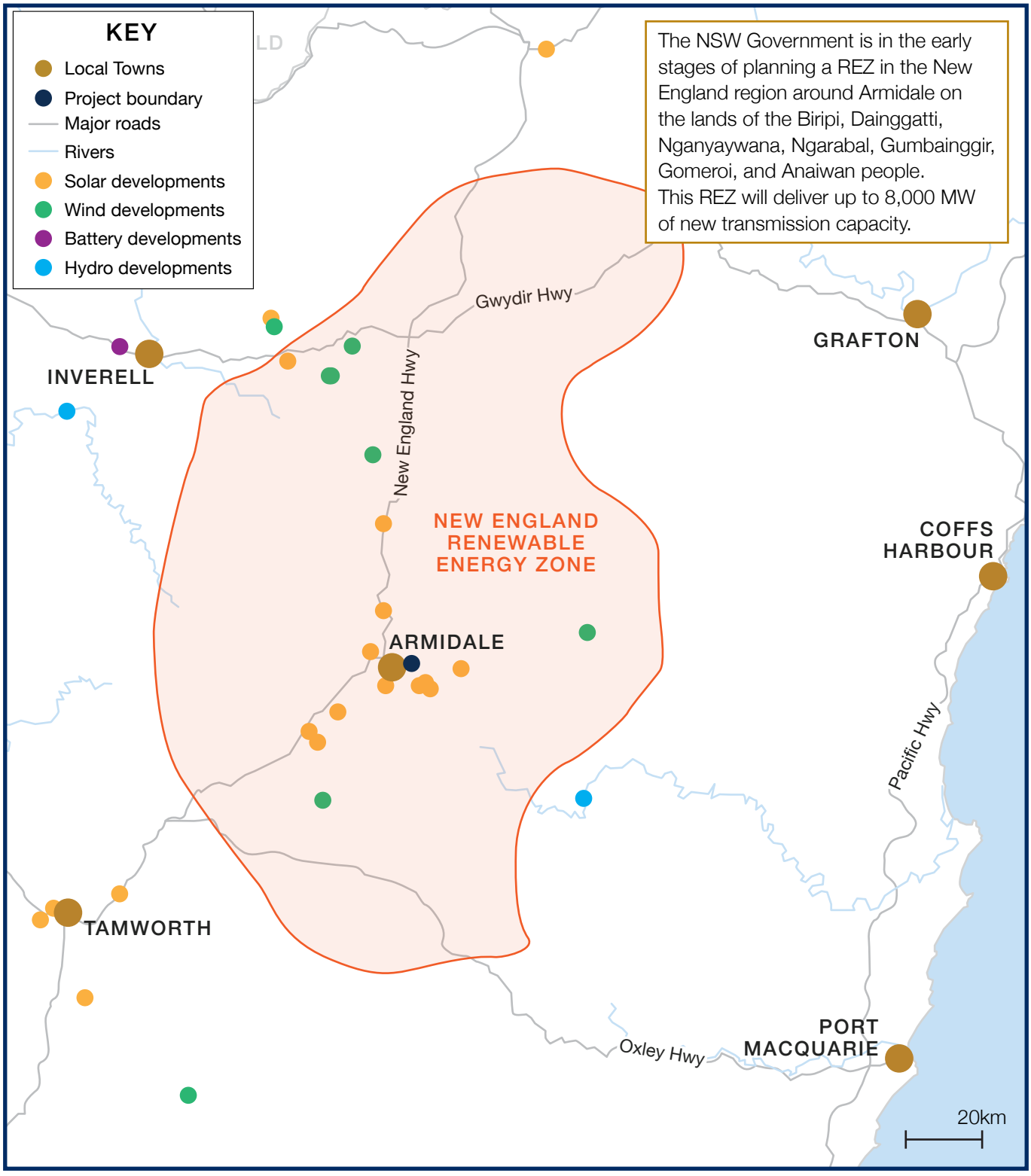
Firming renewables

Grid-scale batteries can store wind and solar energy, then discharge it when the wind isn't blowing and the sun isn't shining. The Eathorpe Battery aims to be an essential component in the stable transition to clean electricity.

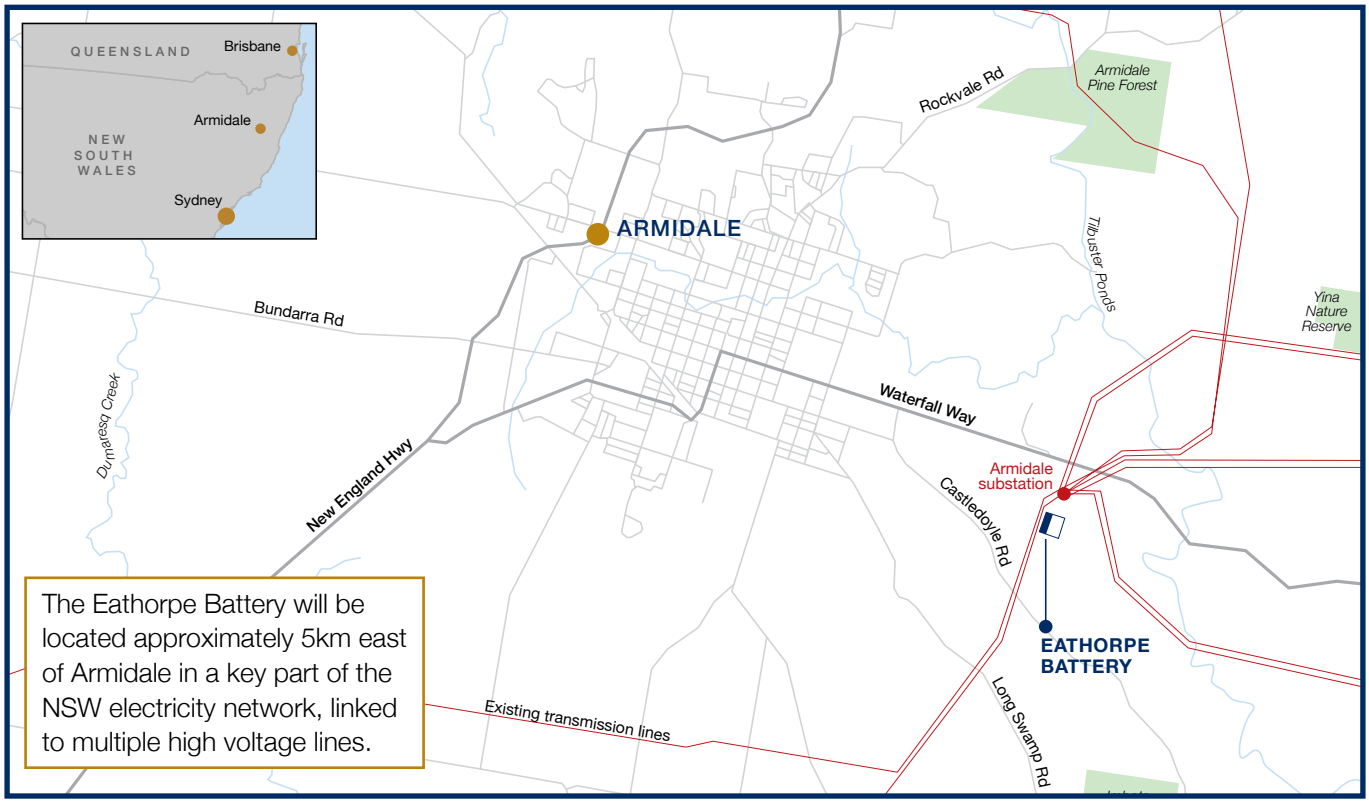
Transmission network support

Grid-scale batteries can provide dynamic millisecond responses so existing transmission lines can operate at full capacity. Like adding another lane to a freeway, the battery can unlock additional capacity on existing transmission networks – saving customers millions of dollars in expensive transmission line upgrades.

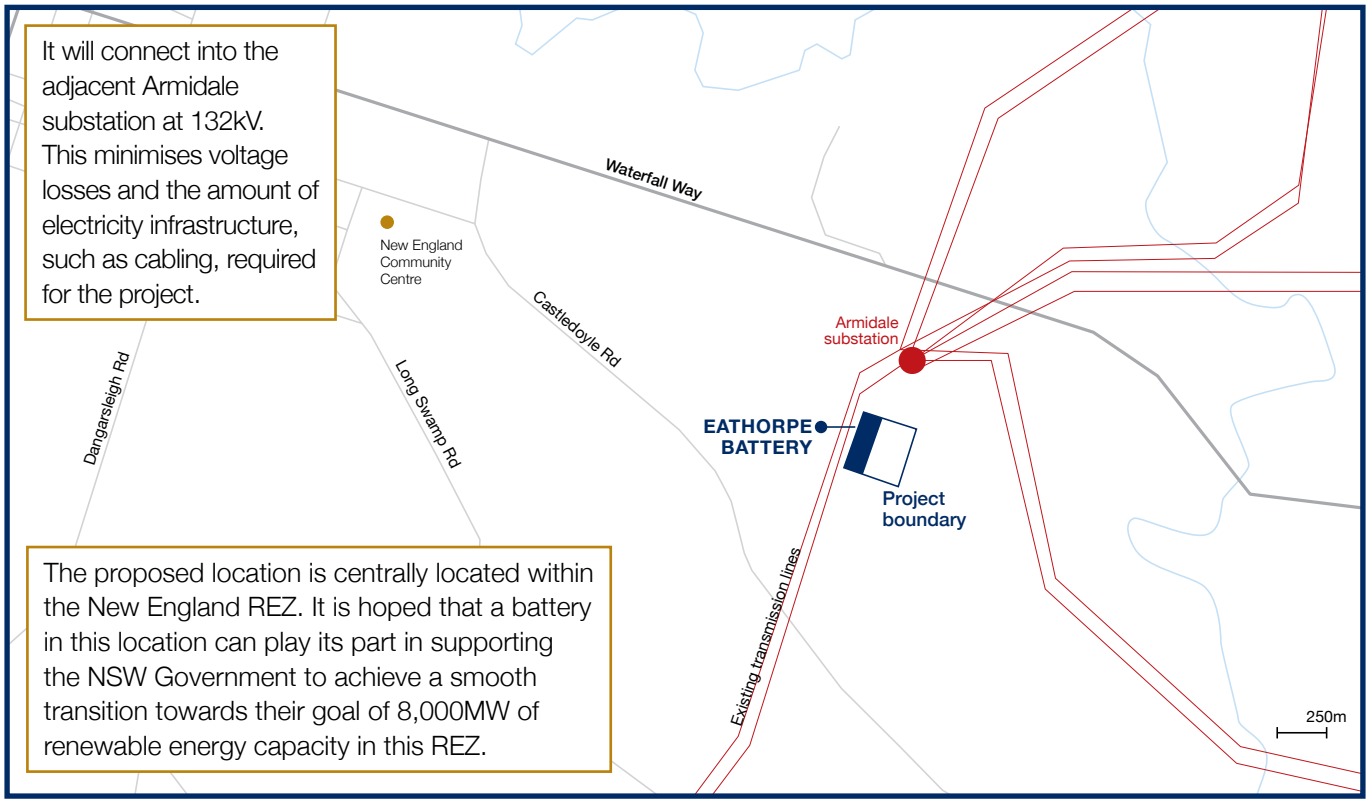
NEW ENGLAND RENEWABLE ENERGY ZONE (REZ)



CHOOSING THE SITE



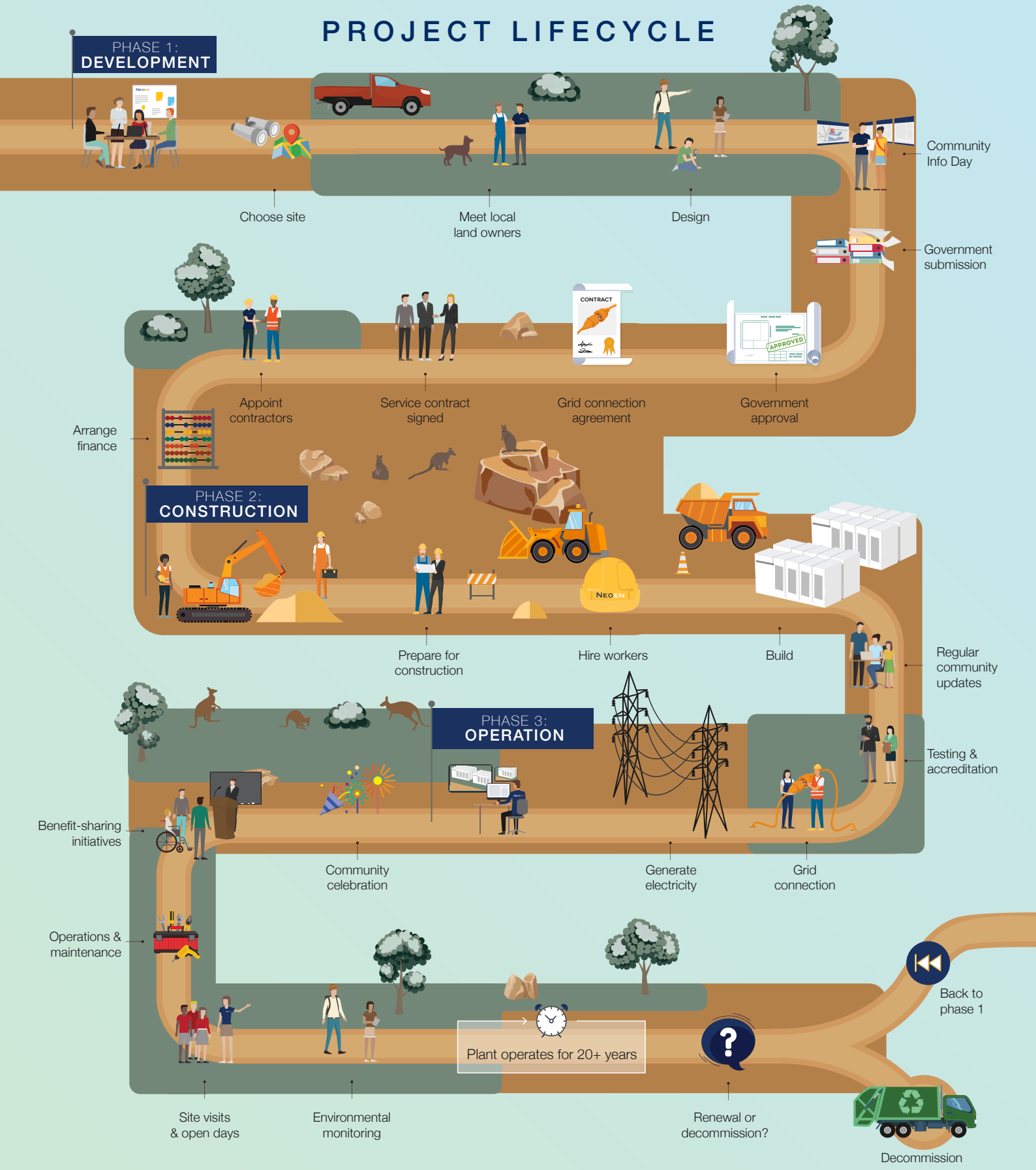
The Eathorpe Battery will be located approximately 5km east of Armidale in a key part of the NSW electricity network, linked to multiple high voltage lines.



It will connect into the adjacent Armidale substation at 132kV. This minimises voltage losses and the amount of electricity infrastructure, such as cabling, required for the project.

The proposed location is centrally located within the New England REZ. It is hoped that a battery in this location can play its part in supporting the NSW Government to achieve a smooth transition towards their goal of 8,000MW of renewable energy capacity in this REZ.

PROJECT LIFECYCLE



COMMUNITY BENEFIT SHARING

Some of your ideas so far:

Community benefit fund

The funds would be allocated to local community projects through a competitive annual grants process.

Educational resources

Develop educational resources for local schools to support learning about renewables and our future energy system.

Local tourism

Develop a local tourism initiative centred on batteries or renewable energy.

Tell us your ideas

We'd like to hear your ideas on community benefits:
surveymonkey.com/r/eathorpebattery

ABOUT STORAGE

Q1. What technology is being used for the project?
The Eathorpe Battery will utilise lithium-ion units and associated equipment from leading manufacturers. These manufacturers are selected through a separate competitive tender process.

In principle, the facility will be an orderly arrangement of battery cabinets, inverters and control systems including electrical and data cabling. The battery packs are enclosed in custom designed, dust and waterproof 'cabinets' made of steel. The cabinet colour is white or light coloured to assist with heat management and each cabinet has its own internal thermal management system.

Q2. How big will it be?
Once completed, the 100MW battery will cover around 3 hectares of land. It will be no higher than 2.5 meters.

Q3. What are the benefits of battery energy storage?
In making the transition from fossil fuels to 'baseload' renewables, the ability to store and dispatch energy will play a key role. Pumped hydro is an example of longer-term storage; that is, suitable for storing energy and releasing it over days or weeks. However, pumped hydro has a relatively slow 'ramping' time and is less suitable for providing rapid-response services to grid contingency events such as outages or heat waves (with high demand created by air-conditioning). Battery storage, such as Tesla's lithium-ion Powerpack technology, fills this key short-term role.

These are some of the functions a grid-scale lithium-ion battery may be expected to perform:

- Network security services including Frequency Control Ancillary Services and Network Loading Control Ancillary Services
- System Restart Ancillary Services
- Arbitrage (spot market trading)
- Peak shaving
- Block/load shifting
- Renewable firming and smoothing.

The NSW Government is committed to renewable energy and has set ambitious goals with the new Electricity Roadmap. The Eathorpe Battery aims to support the effort of the NSW Government in achieving its renewable vision.

Q4. What is the life cycle of the Eathorpe Battery?
Current battery technology comes with an industry-leading 15-20 year warranty. The batteries still retain most of their capacity at this time, and will be able to operate beyond it depending on market conditions and other factors.

Q5. How is the battery reducing costs for consumers?
Battery storage can reduce costs for consumers in 3 ways:

- Supporting more wind and solar, which are now the cheapest forms of power
- Increasing competition in ancillary markets and pushing electricity prices down
- Helping to avoid blackouts and the associated costs.

Q6. What happens to the batteries when they reach the end of their life?
We make a commitment that all above-ground infrastructure is removed and the site rehabilitated when a project ceases to operate. After removal, most of the material in the batteries is reclaimed or recycled with over 60% recovered for re-use.

HEALTH & CULTURE

Q7. Are there any health risks?
The Eathorpe Battery is using similar technology to the batteries that are increasingly installed in homes, just on a larger scale. There are no known health risks associated with properly maintained large-scale battery installations.

Q8. Is the project reducing air quality?
Monitoring of dust levels during construction is a basic requirement of each project. Dust generating activities are assessed during windy conditions and are stopped and rescheduled where adequate control of dust generation cannot be achieved.

Visual observation of machinery is undertaken during site inspections as well as daily pre-start checks which ensure all machinery has appropriate emission control devices, is in good working order, and is maintained correctly.

NOISE

Q9. What components make noise in a battery?
When the battery operates, there are a few components that can make noise. The noise may not be constant, but vary based on the temperature and how the battery is working. The times of highest noise are likely to be experienced could be late summer afternoons when the battery requires most cooling, or during cold winter mornings when heating is required.

The components that typically make noise in a battery are:

- **Battery fans and the cooling/heating system:** noise is emitted from fans when they spin, predominantly during the hot summer months to keep the electronic components of the battery cool. Similarly, the cooling/heating system makes noise during summer and winter months. This cooling/heating system operates in a similar way to a household air-conditioning system and makes similar sounds to a household system.
- **Transformers:** The battery draws power from the transmission lines and also sends power to the transmission lines into the National Electricity Market (NEM) as required to support the network. The process of transferring electricity between the battery and the transmission lines requires a change in the voltage, from low (at the battery) to high (at the transmission lines). Transformers are responsible for the change in voltage. They can make a gentle humming sound. Large transformers use fans to cool as well, which generates noise.
- **Inverters:** Inverters are responsible for converting direct current (DC) into alternating current (AC), which is utilised by the transmission lines. Inverters used for a battery are very similar to inverters installed as part of a domestic rooftop solar installation, converting the DC power produced by solar panels to AC power injected into the electricity grid. The sound made by battery inverters is similar to the sound made by a household solar inverter.

Q10. What noise limits are there?

The noise limit at night-time is 35 decibels (dB) at a neighbouring dwelling.

To provide an indication of how noisy different sound levels are, Neoen have included a comparison table of typical sound levels of different sources as published by Safe Work Australia[1]. A 30dB sound level is equivalent to whispering, while a 40 decibels (dB) sound level is equivalent to quiet radio music.

Sound Source	Typical Sound Level (dB)
Hearing threshold	0
Whispering	30
Quiet radio music	40
Normal conversation	60
Loud conversation	70
Kerbside heavy traffic	80
Front-end loader	85
Lawn mower	90
Sheet metal workshop	100
Chainsaw	110
Rock drill	120
Rivet hammer	130
Jet engine at 30 m	140

Table 1 – Typical sound levels for various sound sources

Q11. What mitigation measures can be implemented to reduce battery noise?

There are a number of things that can be done to mitigate noise, including:

- Battery design: battery manufacturers are continuously improving the battery technology to make their components quieter in their operation.
- Screening: sometimes screening measures may be employed surrounding the battery as required. Screening can include vegetation screening or a noise wall.
- Placement within large buildings: very large buildings are a possible alternative to outside ingress protection (IP) rated cabinet type enclosures for housing big batteries. This approach may be suitable or unsuitable for a given battery site depending on the battery size, location, fire hazard risk assessment and visual impact.

Q12. What work do we do to understand the impacts?

Neoen is undertaking a number of activities to better understand noise impacts, including:

- Working with battery manufacturers on their battery designs and layouts to minimise noise
- Studies with independent noise consultants for each battery site during development
- Monitoring of operating projects to ensure that we meet our obligations.

1 Safe Work Australia – Noise: www.safeworkaustralia.gov.au/safety-topic/hazards/noise

EATHORPE
BATTERY

eathorpebattery.com.au

Joanna Murphy, Project Manager

contact@eathorpebattery.com.au

1800 966 020

NEOEN

7 June 2022

Subject: Introduction to Neoen Australia and Eathorpe Battery

Dear Community Member,

We are writing to you as you live in the area close to the Armidale substation and our proposed **Eathorpe Battery** project. This letter provides you with some information about Neoen Australia as well as the large-scale battery we are proposing.

Neoen Australia

Neoen is one of Australia's leading renewable energy companies that develops, builds and operates large-scale solar, wind and battery assets. We have invested around $2.5 billion in the successful development of 14 projects in Australia, five of which are solar farms located in NSW, and have a strong track-record of successful community engagement in these existing projects. Neoen also owns and operates two successful big battery projects, being the 150MW Hornsdale Power Reserve (better known as the Tesla big battery) in South Australia and the 300MW Victorian Big Battery near Geelong, Victoria.

As long-term owners and operators of our projects (rather than developing them to be sold) we prioritise building a trustworthy and strong engagement with the communities we work with as we see this as a key to their success.

Neoen undertakes its projects with the aim of achieving three main objectives:

- Providing affordable, reliable energy to customers,
- Contributing to the reduction of CO_2 emissions, and
- Bringing benefits to local communities through direct economic impacts, employment opportunities sharing benefits with the community

What does a big battery look like?

A big battery, sometimes called a grid-scale battery, uses similar battery technology to a laptop or mobile phone but at a much larger scale. Neoen's batteries typically use hundreds of lithium-ion battery packs arranged in outdoor cabinets around the size of a large domestic refrigerator.

These outdoor cabinets for a big battery take up an area of 200m x 100m (2 hectares) or larger and are normally located next to one of the existing major electrical substations in a town, city or co-located with a wind farm or solar farm.

A photo of Australia's first big battery, the Hornsdale Power Reserve, is shown below on Figure 1. The capacity of Hornsdale Power Reserve is 193MWh and maximum power output is 150MW. The battery itself takes up an area of approximately 2 hectares.

Figure 1 Hornsdale Power Reserve in South Australia

Eathorpe Battery

We wish to inform you we are currently exploring the feasibility of a large-scale battery project, called the Eathorpe Battery. The proposed location is to the south of the existing Armidale substation, adjacent to land owned by TransGrid, shown on

Figure 2. The Project is proposed within the New England Renewable Energy Zone (REZ), announced by NSW Government in 2021. We have included a preliminary project information booklet.

Figure 2 Eathorpe Battery Location

Eathorpe Battery is proposed to have a capacity of 100MW and to be connected directly into the existing Armidale substation. The battery, including ancillary infrastructure, requires a total area of approximately 2-3 hectares.

The Eathorpe Battery project is considered to be a State Significant Development (SSD), meaning that Development Application (DA) approval is required from the NSW Department of Planning and Environment (DPE). The first step in the approvals process is to submit a preliminary report to NSW DPE, called the Scoping Report. Detailed assessments are undertaken based on requirements issued by NSW DPE, which form part of the Environmental Impact Statement (EIS) report, submitted together with the DA. An outline of these steps is also included in the booklet.

Whilst the development is still in very preliminary stages and initial assessments have only recently started, we are commencing engagement with neighbouring communities. We believe early engagement allows us to incorporate local knowledge and feedback while we still have flexibility in the design and in how we approach our engagement with the community.

Community Drop-In Session

Neoen will host a community drop-in session on **30 June 2022** in the Armidale Traffic Education Centre (10 Mann St, Armidale NSW 2350) from **3-6pm**. We invite you, your friends and family members to come along to meet members of our team, learn more about the proposed Eathorpe Battery and let us know what you think.

The Eathorpe Battery is expected to bring significant community benefits, jobs and investment to the local and regional economy.

One-on-One Meetings

If you cannot attend the community drop-in session and would like to arrange a time to meet with me to learn more about the proposed project, ask questions or share feedback, please reach out to me on the below email and/or phone number.

Share Your Feedback

If you do not wish to meet with us in person, but would like to stay informed about the project, we would encourage you to fill in a feedback survey, which may be found online at:

surveymonkey.com/r/eathorpebattery

If you, or anyone you know, is interested in future supplier and/or contractor opportunities throughout the construction and/or operations phase, they may register their interest by filling in an EOI on our website:

eathorpebattery.com.au/work-with-us/

We look forward to hearing from you and keeping you informed of any developments regarding this project.

Sincerely,

Joanna Murphy
Project Manager for Eathorpe Battery
1800 966 020
contact@eathorpebattery.com.au
GPO BOX 1950, Canberra ACT 2601

NEOEN

Appendix B- Detailed stakeholder map

Stakeholder Group	Tier 1 - 4	Overview	Objectives – Needs based approach	Activities – per development phase
Host Landowners	Tier 1	Residents who are hosting the battery and/or other infrastructure required for the Project on their land.	Ongoing communication and discussions as the Project progresses. Contribution to the Project's progress, ability to provide local knowledge, advice, and input. Involvement in development and delivery of Community Benefit-sharing Scheme	One-on-one meetings, Landowner updates & dinners. Letterbox drops (or email) with updates at identified key milestones. Invitations & involvement in community events.
Armidale Regional Council	Tier 1	Armidale Regional Council	To ensure a positive and collaborative relationship with the LGA that can support the long-term goals of the community.	One-on-one engagement.
Near neighbours up to 1km	Tier 2	Residents owning land adjacent to the Project site have the potential to be affected by visual and/or noise impacts of the battery and the noise from heavy vehicle traffic associated with the construction phase.	To create and maintain a close connection with direct adjacent neighbours of the Eathorpe Battery. To keep neighbours informed about the Project from early in the Project planning process and provide opportunities to raise concerns and provide feedback on solutions to potentially mitigate these issues	One-on-one engagement Letterbox drop (or email) with updates Community Information Sessions. Invitation to community events.

Stakeholder Group	Tier 1 - 4	Overview	Objectives – Needs based approach	Activities – per development phase
State MP	Tier 2	The Hon. Adam Marshall MP (Northern Tablelands)	To ensure the local member is kept updated about the Project and its progress.	Project briefing in person by Head of Development. Provide key messages/speaking notes if required Invitation to community events.
Federal MP	Tier 2	The Hon. Barnaby Joyce, MP (New England)	To ensure the local member is kept updated about the Project and its progress.	Project update in person by head of Development Provide key messages/speaking notes if required. Invitation to community events.
Traditional Owners – Indigenous community	Tier 2	The Anēwan/Anaiwan people	Engaging with local Traditional Owners beyond planning requirements, such as Cultural Heritage Management Plans. We will seek to engage and understand what elements of the Project are culturally relevant and/or sensitive.	Invitation to co-design. Cultural Heritage Management Plan. Site Visit. Invitation to community events.
Rural Fire Service (RFS)	Tier 2	Representatives from the New England RFS district	To ensure Project activities abide by safety and regulatory requirements.	Provide indicative design plans and updates on the Project to prepare for any local fire and emergency safety requirements.
Armidale Neighbourhood	Tier 3	The local people living within the Armidale LGA within close distance to the Project.	To keep the local community informed about the Project from early in the planning phase.	Armidale community
Schools, TAFEs and Universities	Tier 3	New England Community College Inc TAFE NSW Armidale University of New England	To ensure organisations are updated on education and	Information and Project updates provided and invitation to future networking engagement.

Stakeholder Group	Tier 1 - 4	Overview	Objectives – Needs based approach	Activities – per development phase
		Minimbah Primary School Newling Public School The Armidale School (TAS)	vocational opportunities associated with the Project. To use the opportunity of a local renewable Project to dovetail relevant & practical educational content into the syllabus.	Opportunities for site visits for local schools.
Business groups / industry stakeholders	Tier 3	We will seek to engage and collaborate with local businesses and business networks regarding potential opportunities such as sourcing for battery development.	To ensure Neoen is creating opportunities for local renewable energy Projects. Raise awareness of the benefits, including the environmental, economic, cultural and social sustainability outcomes for the region	Develop a suite of communication materials to engage with and create interest and participation.
Advocacy groups	Tier 3	New England Visions 2030	Discussion on community energy and zero emissions targets. Potential for partnerships.	Update / presentation on Project. Invitations to community events.

APPENDIX C CUMULATIVE IMPACT ASSESSMENT SCOPING SUMMARY

Key

Level of Assessment	Description
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.
N/A	No potential overlap in impacts between a future project and the proposed project that would warrant any consideration in the cumulative impact assessment.

Cumulative Impact Assessment Scoping Summary Table

Project	Distance to Project (approx.)	Project Status/ Indicative timing/ Overlap	Potential overlap between impacts of Project and impact of other projects			
			Access (Traffic)	Amenity – Noise	Amenity – Visual	Social [5]
Renewable Energy Projects						
Armidale Battery Energy Storage System (Proposed)	340 m	■ SEARs issued, EIS submission expected by mid-2023; ■ Construction duration of 9 months (timeline unknown); and ■ Proposed operational life of 20 years.				
	Key Features ■ BESS 150 MW/300 MWh.		Potential overlap of construction and operational phases. Further assessment required	Further assessment required.	Further assessment required.	Further assessment required.
Oxley Solar Farm (Proposed)	9 km	■ Proposed, EIS currently on exhibition; and ■ Construction expected to begin in late 2023 for a period of up to18 months.				
	Key Features ■ 225 MW solar farm; and ■ Area across approx. 1,048 ha.		Potential risk of cumulative impacts relating to access, traffic and transport, subject to proposed construction and operations timeframes and transport route. Further assessment required.	Low risk of cumulative operational noise impacts. Further assessment required.	Low risk of cumulative visual impacts, given the distance of this project to the proposed Project. Standard assessment to be undertaken.	Low risk of cumulative social impacts. Further assessment required.

[5] Social - workforce, workers accommodation, health and wellbeing, goods and services.

Project	Distance to Project (approx.)	Project Status/ Indicative timing/ Overlap	Potential overlap between impacts of Project and impact of other projects			
			Access (Traffic)	Amenity – Noise	Amenity – Visual	Social [5]
New England Solar Farm and Mod 1 (Approved)	13 km	■ Project approved in 2020; ■ Modification approved in 2022; and ■ Construction expected to take approx. 36 months.				
	Key Features ■ 720 MW solar farm; and ■ Area across approx. 2,787 ha.		Potential risk of cumulative impacts relating to access, traffic and transport, subject to proposed construction and operations timeframes and transport route. Further assessment required.	Low risk of cumulative operational noise impacts. Further assessment required.	Low risk of cumulative visual impacts, given the distance of this project to the proposed Project. Standard assessment to be undertaken.	Low risk of cumulative social impacts. Further assessment required.
New England Solar Farm Mod 2 (Proposed)	13 km	■ Prepare Mod Report.				
	Key Features ■ Adding 321 ha of land to the project to accommodate a change to the project infrastructure layout.		Potential overlap of construction and operational phases. Further assessment required	Low risk of cumulative operational noise impacts. Further assessment required.	Low risk of cumulative visual impacts, given the distance of this project to the proposed Project. Standard assessment to be undertaken.	Low risk of cumulative social impacts. Further assessment required.
Metz Solar Farm (Approved)	15 km	■ Project approved in 2017; ■ Proposed 12-month construction period; and ■ Proposed operation from 2022 and operational life of 30 years.				
	Key Features ■ 100 MW solar farm; and ■ Area across approx. 507 ha.		Low risk of cumulative impacts relating to access, traffic and	No potential overlap in noise impacts between this project and the proposed Project.	Low risk of cumulative visual impacts, given the close distance of	Low risk of cumulative social impacts. Further assessment required.

Project	Distance to Project (approx.)	Project Status/ Indicative timing/ Overlap	Potential overlap between impacts of Project and impact of other projects			
			Access (Traffic)	**Amenity – Noise**	**Amenity – Visual**	**Social [5]**
			transport, subject to the transport route. Low risk given the distance and timing of construction of this project from the proposed Project. Further assessment required.		this project to the proposed Project. Standard assessment to be undertaken.	
Tilbuster Solar Farm (Approved)	19 km	■ Project approved in 2022; ■ Proposed 12-month construction period (construction timeline unknown); and ■ Proposed operational life of 30 years.				
	Key Features ■ 150 MW solar farm; and ■ Area across approx. 310 ha.		Low risk of cumulative impacts relating to access, traffic and transport, subject to the transport route. Low risk given the distance and timing of construction of this project from the proposed Project. Further assessment required.	No potential overlap in noise impacts between this project and the proposed Project.	Low risk of cumulative visual impacts, given the close distance of this project to the proposed Project. Standard assessment to be undertaken.	Low risk of cumulative social impacts, given the distance and timing of construction of this project from the proposed Project. Further assessment required.

Project	Distance to Project (approx.)	Project Status/ Indicative timing/ Overlap	Potential overlap between impacts of Project and impact of other projects			
			Access (Traffic)	Amenity – Noise	Amenity – Visual	Social [5]
Salisbury Solar Farm (Proposed)	27 km	■ SEARs issued in 2019; and ■ Proposed operational life of 25 years.				
	Key Features ■ 700 MW solar farm; and ■ Area across approx. 3,490 ha.		Low risk of cumulative impacts relating to access, traffic and transport, subject to the transport route. Low risk given the distance and timing of construction of this project from the proposed Project. Further assessment required.	No potential overlap in noise impacts between this project and the proposed Project.	Unlikely to be overlap in visual impacts between this project and the proposed Project.	Low risk of cumulative social impacts, given the distance and timing of construction of this project from the proposed Project. Further assessment required.
Winterbourne Wind Farm (Proposed)	35 km	■ SEARs issued EIS submission expected by end-2022; ■ Proposed construction for 2023; and ■ Project operational life is unknown.				
	Key Features ■ 700 MW wind farm; ■ 126 WTGs; ■ BESS 100 MW / 200 MWh; and ■ Area across approx. 24,400 ha.		Low risk of cumulative impacts relating to access, traffic and transport, subject to the transport route. Low risk given the distance and timing of construction of this project from the proposed Project. Further assessment required.	No potential overlap in noise impacts between this project and the proposed Project.	Unlikely to be overlap in visual impacts between this project and the proposed Project.	Low risk of cumulative social impacts, subject to the proposed timing of the construction of this project. Further assessment required.

Project	Distance to Project (approx.)	Project Status/ Indicative timing/ Overlap	Potential overlap between impacts of Project and impact of other projects			
			Access (Traffic)	**Amenity – Noise**	**Amenity – Visual**	**Social [5]**
Thunderbolt Wind Farm (Proposed)	41 km	■ Proposed, in Response to Submission (RTS) phase; and ■ Construction proposed for a period of approx. 18 - 24 months; ■ Proposed operational life of approximately 25 - 30 years.				
	Key Features ■ 192 MW wind farm; ■ Up to 32 WTGs; and ■ Area across approx. 5,918 ha.		Low risk of cumulative impacts relating to access, traffic and transport, subject to the transport route. Low risk given the distance and timing of construction of this project from the proposed Project. Further assessment required.	No potential overlap in noise impacts between this project and the proposed Project.	Unlikely to be overlap in visual impacts between this project and the proposed Project.	Low risk of cumulative social impacts, subject to the proposed timing of the construction of this project. Further assessment required.
Doughboy Wind Farm (Proposed)	42 km	■ SEARs issued EIS submission expected by end-2022; ■ Proposed 12-month construction period; and ■ Project timeline and operational life are unknown.				
	Key Features ■ 300 MW wind farm; ■ 52 WTGs; ■ BESS 100 MW / 400 MWh; and ■ Area across approx. 17,000 ha.		Low risk of cumulative impacts relating to access, traffic and transport, subject to the transport route.	No potential overlap in noise impacts between this project and the proposed Project.	No potential overlap in visual impacts between this project and the proposed Project.	Low risk of cumulative social impacts, subject to the proposed timing of the construction of this project, which is currently unknown.

Project	Distance to Project (approx.)	Project Status/ Indicative timing/ Overlap	Potential overlap between impacts of Project and impact of other projects			
			Access (Traffic)	**Amenity – Noise**	**Amenity – Visual**	**Social [5]**
			Low risk given the distance and timing of construction of this project from the proposed Project. Further assessment required.			Further assessment required.
Other State Significant Projects						
Armidale High School (Mod 1 and 2) (Operational)	5.5 km	■ Project completed; ■ No construction overlap; and ■ Operational since 2021.				
	Key Features ■ Redevelopment to combine the existing Armidale High School and Duval High to establish a new, purpose built high school with a capacity for approximately 1,580 students. ■ Includes teaching, learning, outdoor, specialist, sport spaces and car parking.		No potential of cumulative impacts relating to access, traffic and transport, subject to the transport route.	No potential overlap in noise impacts between this project and the proposed Project.	No potential overlap in visual impacts between this project and the proposed Project.	No potential overlap in social impacts between this project and the proposed Project.
Armidale Waste Facility and Mod 1 and 2 (Operational)	7.1 km	■ Project completed (including Mod 1 and 2); ■ No construction overlap; ■ Operational since 2012; and ■ Operational life of 50 years.				
	Key Features ■ Landfill facility with capacity of up to 15,000 tonnes per annum (tpa) of general solid waste, and capacity of up to 750,000 tonnes over the proposed life span.		Low risk of cumulative impacts relating to access, traffic and transport, subject to the transport route. Low risk given potential overlap of waste facility	No potential overlap in noise impacts between this project and the proposed Project.	No potential overlap in visual impacts between this project and the proposed Project.	No potential overlap in social impacts between this project and the proposed Project.

Project	Distance to Project (approx.)	Project Status/ Indicative timing/ Overlap	Potential overlap between impacts of Project and impact of other projects			
			Access (Traffic)	**Amenity – Noise**	**Amenity – Visual**	**Social [5]**
			operation and Project construction. Further assessment required.			
UNE New Wright Block (Operational)	7.5 km	■ Project completed; ■ No construction overlap; and ■ Operational since 2021.				
	Key Features ■ Development of the Wright Block within UNE consisting of three residential blocks (North, South and West (3 storeys in height and approximately 342 beds) and a hub building, demolition of the Wright Centre and the addition of 188 car spaces.		Low risk of cumulative impacts relating to access, traffic and transport, subject to the transport route.	No potential overlap in noise impacts between this project and the proposed Project.	No potential overlap in visual impacts between this project and the proposed Project.	No potential overlap in social impacts between this project and the proposed Project.
Hillgrove Mine and Mod 1, 2, 3 and 4 (Operational)	18 km	■ Project completed; ■ No construction overlap; and ■ Extended operational life until December 2023.				
	Key Features ■ Production of up y 250,000 tpa of antimony-gold and refractory gold concentrates.		Low risk of cumulative impacts relating to access, traffic and transport, subject to the transport route. Low risk given potential overlap of mine operation and Project construction. Further assessment required.	No potential overlap in noise impacts between this project and the proposed Project.	No potential overlap in visual impacts between this project and the proposed Project.	No potential overlap in social impacts between this project and the proposed Project.

APPENDIX D PRELIMINARY BIODIVERSITY ASSESSMENT

Eathorpe Battery

Preliminary Biodiversity Assessment

14 October 2022

Project No.: 0646324

The business of sustainability

Document details	
Document title	Eathorpe Battery
Document subtitle	Preliminary Biodiversity Assessment
Project No.	0646324
Date	14 October 2022
Version	0.1
Author	Jye Dalton, Lorena Boyle
Client Name	Neoen Australia Pty Ltd

Document history

				ERM approval to issue		
Version	Revision	Author	Reviewed by	Name	Date	Comments
0.1	1	Jye Dalton, Lorena Boyle	Matt Davis	Mark Davey	1.08.2022	
0.1	2	Jye Dalton, Lorena Boyle	Matt Davis	Mark Davey	14.10.2022	

Signature Page

14 October 2022

Eathorpe Battery

Preliminary Biodiversity Assessment

Adam Smith
Project Manager

Mark Davey
Partner

Environmental Resources Management Australia Pty Ltd
Level 15 309 Kent Street
Sydney NSW 2000

CONTENTS

List of Tables

List of Figures

Acronyms and Abbreviations

Name	Description
ALA	Atlas of Living Australia
AOBV	Areas of Outstanding Biodiversity Value
BAM	Biodiversity Assessment Method
BAM-C	BAM Calculator
BC Act	NSW Biodiversity Conservation Act 2016
BDAR	Biodiversity Development Assessment Report
BESS	Battery Energy Storage System
BOS	Biodiversity Offsets Scheme
BOSET	Biodiversity Offsets Scheme Entry Threshold
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DPIE	Department of Planning and Environment
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ERM	Environmental Resources Management
IBRA	Interim Biographic Regionalisation of Australia
LGA	Local Government Area
LLS Act	Local Land Services Act 2013
MNES	Matters of National Environmental Significance
NSW	New South Wales
ºC	Degrees Celsius
PCT	Plant Community Types
PMST	Protected Matters Search Tool
Project Area	The Project Area is defined as the area of land corresponding to property boundaries on which the Project is located, this includes the proposed battery location, Lot 842 DP 755808, Lot 841 DP755808, existing TransGrid easement, existing TransGrid substation lots and an unnamed road easement.
SAII	Serious And Irreversible Impacts
SEARs	Secretary's Environmental Assessment Requirements
SSD	State Significant Development

Name	Description
Study Area	The area of land corresponding to property boundaries on which the Project is located in addition to adjacent road reserves, including the southern side of Grafton Road/Waterfall Way and adjacent Earthorpe Road.
TBDC	Threatened Biodiversity Data Collection
TECs	Threatened Ecological Communities
the Project	Neoen Eathorpe Armidale Battery Energy Storage System
VIS	Vegetation Information System
WoNS	Weeds of National Significance

1. INTRODUCTION

Neoen Australia Pty Ltd (the Proponent) proposes to construct and operate the Eathorpe Battery, a utility battery development located approximately 6km east of Armidale, NSW (the 'Project'). The Project is a utility-scale battery, with a total capacity of up to 100 megawatt (MW) / 200 megawatt hour (MWh). The Proponent is seeking State Significant Development (SSD) consent under Part 4, Division 4.7 of the *Environmental Planning & Assessment Act 1979* (EP&A Act) for the Project.

The Project Area is defined as the area of land corresponding to property boundaries on which the Project is located, and includes the proposed battery location, Lot 842 DP 755808, Lot 841 DP755808, existing TransGrid easement and the existing TransGrid substation lots. For this Preliminary Biodiversity Assessment report, the Biodiversity Study Area includes the southern side of Grafton Road/Waterfall Way and the adjacent Eathorpe Road, as well as the Project Area itself. These are presented in **Figure 1-1.**

The Proponent engaged Environmental Resources Management Australia Pty Ltd (ERM) to prepare a Scoping Report for the Project, as a first step in the SSD consent process. The Scoping Report will support a request to the NSW Department of Planning and Environment (DPE) seeking Secretary's Environmental Assessment Requirements (SEARs). The SEARs will guide the preparation of an Environmental Impact Statement (EIS) for the Project as part of the SSD application.

This Preliminary Biodiversity Assessment is to be appended to the Scoping Report and aims to define the biodiversity constraints within the Biodiversity Study Area through desktop analysis and field surveys conducted by ERM in June 2022. The information gained from these survey efforts would support the development of a Biodiversity Development Assessment Report (BDAR) which will be required as part of the EIS.

1.1 Project Overview

Neoen proposes to construct and operate the Project near the town of Armidale in the New England Region of NSW. The Project Area is located entirely within the Armidale Local Government Area (LGA). The Project Area occurs across approximately 16.5 hectares (ha).

The Project Area is situated approximately 6 kilometres (by road) east of Armidale, and 141 km west of Coffs Harbour. The Project Area is bordered by Eathorpe Road to the east and Waterfall Way to the north. The Armidale Substation, operated by TransGrid, is located in the north of the Project Area bordered by Grafton Road (Waterfall Way) 750 metres (m) to the north. Grafton Road runs through Armidale, east-west from the Pacific Highway to the New England Highway located approximately 8.4 km to the west of the Project Area. The regional context of the Project Area is identified in **Figure 1-1**.

The area defined as the Biodiversity Study Area (hereafter referred to as Study Area) also includes the southern side of the Grafton Road/Waterfall Way and the Eathorpe Road reserve, where these sections of road reserve are adjacent to the Project Area.

The Proponent is seeking to connect to TransGrid's Armidale Substation via a new underground or above-ground electrical easement, subject to necessary approvals. The battery will be located in the western portion of the Project Area. The technology to be deployed for the battery is still to be confirmed.

The Project will include the following infrastructure and associated works:

- Battery cells that will be housed in either climate-controlled shipping container style buildings or outdoor cabinets;
- Electrical inverters;
- Underground cabling and above-ground cabling;
- MV and HV transformers;

- An Operations & Maintenance (O&M) facility and storage sheds/spare parts room;
- Car parking;
- Water tanks;
- Control room and electrical switch room;
- Extension of a busbar at an existing substation;
- Benching and earthing;
- Security fencing and lighting;
- Visual screening; and
- Temporary construction compound and laydown areas.

The Project design and components are described in further detail in **Section 3.2** of the Neoen Eathorpe Battery Scoping Report.

CAFFERIES ROAD

WATERFALL WAY

AMBLE ROAD

Armidale Substation

Proposed Armidale BESS

EATHORPE ROAD

Legend

- Project Area
- Biodiversity Assessment Study Area
- Armidale BESS Project
- Battery Area
- Proposed Transmission Line
- Major Road
- Minor Road
- Path/Track

Existing Transmission Line

- 330kV
- 132kV
- 66kV
- Cadastre

Source:
NSW DBDB, DTBD 2022
Nearmap Imagery 21st March 2022

Indicative Project Layout

F1-1

Drawing No:	0646324s_NB_Bio_G001_R3.mxd		Neoen Armidale BESS Scoping Report
Date:	13/10/2022	Drawing Size: A4	
Drawn By:	VN	Reviewed By: AS	Client: Neoen Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

0 50 100m

N

ERM

1.2 Objectives

The objective of this assessment is to describe the biodiversity constraints that are known, or have the potential to occur within the Study Area. The assessment focussed on significant features protected under the NSW *Biodiversity Conservation Act 2016* (BC Act) and the federal *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

This assessment used desktop sources of information, as well as results from a single field survey completed by two ERM ecologists and specialist flora ecologist in June 2022. The results and recommendations in this report allows for the identification of significant biodiversity values associated with the Study Area and preliminary recommendations to be provided in terms of avoidance, mitigation and additional assessment for biodiversity values.

For the purpose of this preliminary assessment, biodiversity values include:

- Native species and ecological communities with a particular focus on those listed as migratory, vulnerable, endangered or critically endangered under the EPBC Act and the BC Act; and
- Important habitat components (e.g., hollow-bearing trees) and landscape features.

The preliminary assessment included:

- Identification and mapping of threatened flora and fauna species records, important habitat components and landscape features;
- Mapping of the extent and type of native Plant Community Types (PCT) and Threatened Ecological Communities (TEC) listed under the BC Act and/or EPBC Act;
- Preliminary survey design including likely target species and seasonal survey techniques;
- Preliminary significant impact assessment for impacts to matters of national environmental significance (MNES) to support an EPBC Referral submission; and
- a description of outcomes and recommendations to support the ongoing Project design and assessment process.

This preliminary biodiversity assessment will be presented as an Appendix in the Scoping Report to facilitate the issue of the Secretary's Environmental Assessment Requirements (SEARs), a critical requirement prior to the development of the Environmental Impact Statement (EIS). It will also be used to support an EPBC Act referral for the Project and includes a summary section on applicable MNES.

2. LEGISLATION

A summary of the legislation relevant to the preliminary biodiversity assessment is provided in **Table 2-1**. This report addresses the objectives and requirements of the legislation as it relates to the identification of biodiversity and ecological values of the Project Area.

Table 2-1 Legislation applicable to the Preliminary Biodiversity Assessment

Commonwealth Legislation
Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
The EPBC Act outlines the requirement for approval by the Commonwealth Minister for the Environment and Water for actions that are likely to have a significant impact on MNES as assessed in accordance with the EPBC Significant Impact Guidelines 1.1. The EPBC Act is administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) and lists threatened species, ecological communities and other MNES. Any proposed action that is expected to have an impact on MNES must be referred to the Minister for assessment under the EPBC Act, or assessed under the existing bilateral agreement, or accredited process between the Commonwealth and the State of New South Wales (NSW). The desktop review and field studies undertaken to date have identified MNES likely to occur within the Study Area.
NSW Statutory Legislation and Guidelines
***Biodiversity Conservation Act 2016* (BC Act)**
The BC Act establishes mechanisms for the management and protection of listed threatened species of native flora and fauna (excluding fish and marine vegetation) and threatened ecological communities (TECs), specifically: ■ The listing of threatened species, TECs and key threatening processes; ■ The development and implementation of recovery and threat abatement plans; ■ The declaration of critical habitat; ■ The consideration and assessment of threatened species impacts in development assessment process; and ■ Biodiversity Offsets Scheme (BOS), including the Biodiversity Values Map and Biodiversity Assessment Method (BAM) to identify serious and irreversible impacts (SAII). The BC Act establishes the regulatory framework for assessing and offsetting biodiversity impacts on proposed developments. Where development consent is granted, the authority may impose as a condition of consent an obligation to retire a number and type of biodiversity credits determined under the Biodiversity Assessment Method (BAM). A Biodiversity Values Map and Biodiversity Offsets Scheme Entry Threshold (BOSET) tool are available to identify the presence of mapped biodiversity values within land proposed for development as well as the clearing thresholds that would trigger application of the BAM. A review of the BOSET was undertaken on 24th June 2022 and determined that no areas within the Study Area are mapped as Areas of Biodiversity Values. The Biodiversity Offsets Scheme applies to SSD and state significant infrastructure (SSI) projects, unless the Secretary of the Department of Planning and Environment (DPE) determines that the Proposal is not likely to have a significant impact. As this is an SSD and there are recorded biodiversity values within the Study Area, application of the BAM and the preparation of a Biodiversity Development Assessment Report (BDAR) will be required to inform the EIS for the Neoen Eathorpe Battery.
Local Land Services Act 2013
The *Local Land Services Act 2013* (LLS Act) regulates the management of vegetation on rural land. Amendments to the LLS Act have resulted in a change to the criteria for native vegetation clearing. There are now three different land categories for clearing on rural land: ■ Category 1 – 'Exempt land' which will not be subject to clearing approval; ■ Category 2 – 'Regulated Land' on which clearing of native vegetation may be carried out with or without approval in accordance with an 'allowable activity' or 'code' under the LLS Act, and ■ 'Excluded Land' – Land not categorised in the Regulatory Maps and to which the LLS Act does not apply. Native Vegetation Regulatory Map (Regulatory Map) was reviewed on the 24th June 2022. The TransGrid land is exempt from the LLS Act, and the remaining land is not mapped. This will be further explored as part of the BDAR process.

NSW Statutory Legislation and Guidelines

Biosecurity Act 2015

The NSW *Biosecurity Act 2015* came into effect on 1 July 2017, replacing the *Noxious Weeds Act 1993*, and 13 other Acts, with a single Act. The *Biosecurity Act 2015* specifies that landowners have a *General Biosecurity Duty* to control noxious weeds on their property. The General Biosecurity Duty states "*Any person who deals with a biosecurity matter or a carrier and who knows, or ought reasonably to 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*." The General Biosecurity Duty applies to all weeds listed in Schedule 3 of the *Biosecurity Act 2015*. Primary weeds have been identified in different Local Government Areas (LGA) due to the level of threat infestation they represent, some of the Weeds of National Significance (WoNS) are also listed as Primary Weeds in LGAs. A strategic plan for each weed will be required at each site to define responsibilities and identify strategies and actions to control the weed species. These can be downloaded from:
http://www.environment.gov.au/biodiversity/invasive/weeds/weeds/lists/wons.html

3. METHODOLOGY

This Preliminary Biodiversity Assessment identifies and describes significant biodiversity values within the Study Area and provides preliminary recommendations in terms of avoidance, mitigation and/or additional assessment required as part of the design development and EIS phases of the Project. A combination of desktop and field methods were used in the preparation of this report.

3.1 Desktop Review

The desktop review included the following resources:

- Online Threatened Biodiversity Data Collection (TBDC), including NSW BioNet Atlas, Vegetation Information System (VIS) Database and threatened biodiversity profiles;
- Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters Search Tool (PMST) identifying threatened species and communities with potential to occur within the locality (10 km buffer around the Project boundary);
- NSW SEED Portal to identify Plant Community Types (PCT), threatened species or communities known or likely to occur; Mitchell Landscapes, map of Interim Biographic Regionalisation of Australia (IBRA) version 7; and
- Atlas of Living Australia (ALA) Database.

The results of the Protected Matters Search Tool report are included in Appendix A.

3.2 Field Surveys

3.2.1 Winter 2022 Field Surveys

A preliminary field assessment of the Eathorpe Battery Study Area was conducted on the 13th June 2022 through to 17th June 2022. The first day of surveys involved vegetation delineation and was undertaken by botanist and vegetation specialist, Dr John Hunter and ERM ecologist Lorena Boyle. Surveys from the night of 13th June 2022 through to 17th June 2022 were undertaken by two ERM ecologists, Lorena Boyle and Jye Dalton.

The site evaluation used rapid assessment to determine key vegetation types and potential for vegetation and habitat of conservation significance. Biodiversity features such as hollow bearing trees, natural and artificial water sources, woodland stands, and habitat presence, quality, and connectivity were assessed. Scattered Tree Assessments were undertaken within areas that met the criteria under Appendix B of the BAM. Rapid assessment was utilised to determine the likelihood of threatened ecological community occurrence. Vegetation was assessed within the Study Area to determine if any biodiversity values with potential to be impacted by the Project were present.

Additional targeted surveys were undertaken for threatened fauna candidate species that can be surveyed in winter, including the Barking Owl and Masked Owl. A summary of the field survey effort and methods is provided in **Table 3-2** with the location of field surveys shown in **Figure 3-1**.

3.2.1.1 Winter Field Survey Conditions

Table 3-1 details the daily weather observations that were recorded during the winter field survey period for the nearest weather station, Armidale. No rainfall was experienced during the survey.

Table 3-1 Daily Weather Observations for Armidale Weather Station

Date	Minimum Temperature (°C)	Maximum Temperature (°C)
13/06/2022	-0.5	14.5
14/06/2022	-4.9	15.2
15/06/2022	-3.3	15.4
16/07/2022	-0.6	15.9

Table 3-2 Summary of Field Survey Methods and Effort

Target	Method	Effort
Candidate Species		
Masked Owl	Call playback and spotlighting	4 x nights
Barking Owl	Call playback and spotlighting	4 x nights
Vegetation community surveys and plots		
Plant Community Types – Rapid Data Points	Rapid Data Points - Plant Community Types (PCTs) were identified according to the NSW PCT classification as described in the NSW BioNet Vegetation Information System (BioNet VIS) using a combination of API, a review of regional vegetation mapping and ground-truthing dominant structural / floristic attributes.	Traverses across the Study Area
Plant Community Types – Vegetation integrity plots/ BAM plots	A total of 13 plot-based floristic surveys were conducted in accordance with s.5.2.1.9 of the BAM. Survey plots were established around a central 50 m transect and each included: ■ A 20 m x 20 m plot sampled for the presence of flora species. The plots were carefully examined to identify all flora species present. This search continued until it was confident that all flora species within the plots were detected. ■ One 1000 m² (20 m x 50 m) plot to assess the function attributes: number of large trees, stem size class, tree regeneration and length of logs. ■ Five 1 m² sub-plots to assess average litter cover (and other groundcover components).	13 x BAM Plots completed
Scattered Tree Assessment	Conducted in accordance with the scattered tree assessment module in Appendix B of the BAM. Any trees that fulfilled the criteria were identified and following information was collected/recorded: ■ Coordinates of tree ■ The genus and species of each tree ■ Notes on important habitat values or fauna observations (e.g., hollows, nests, scats, scratches, threatened species) was recorded for each tree.	6 x Scattered Tree Assessments


CAFFERIES ROAD
WATERFALL WAY
AMBLE ROAD
EATHORPE ROAD
Legend
Call Playback
Biodiversity Assessment Study Area
BAM Plot
railway
Major Road
Minor Road
Path/Track
Cadastre
Source:
NSW DBDB, DTBD 2022
Nearmap Imagery 21st March 2022
Field Survey Locations
F3-1
Drawing No: 0646324s_NB_Bio_G002_R3.mxd
Date: 28/07/2022
Drawing Size: A4
Drawn By: VN
Reviewed By: AS
Coordinate System: GDA 1994 MGA Zone 56
0 50 100m
N
Neoen Armidale BESS
Scoping Report
Client: Neoen Australia Pty Ltd
This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.
ERM

3.3 Likelihood of Occurrence

Consistent with the accepted approach for biodiversity assessment, a preliminary likelihood of occurrence assessment was undertaken for the Study Area, informed by desktop sources and the field survey results. Desktop sources identified a number of fauna and flora species listed under the EPBC Act and BC Act that have been recorded previously or are predicted to occur within a 10 km buffer of the Study Area. The likelihood of occurrence approach refines the desktop generated list using site-specific and specific-species habitat information.

The assessment ranks the likelihood of the species occurring within the Study Area through analysis of species distribution information and the presence of specific habitat attributes as identified through the desktop analysis and field survey.

The criteria applied are outlined in **Table 3-3.** The preliminary likelihood of occurrence assessment is provided in Appendix C of this report.

Table 3-3 Likelihood of Occurrence Criteria

Factor	Preferred habitat exists	Suitable habitat exists[1]	Habitat does not exist[2]
Records within Study Area	Known	Known	Known
Records in the locality[2]	Likely	Potential	Unlikely
No records in the locality, but Study Area is within known distribution	Potential	Unlikely	Unlikely
No records in the locality, and Study Area is outside of distribution	Unlikely	Unlikely	Unlikely

1. *Habitat may be considered suitable (or potential habitat), but not preferred because: some desired habitat features may be present, but not all; habitat may have poor connectivity; or habitat may be known to be disturbed. Based on sources reviewed and/or field survey results.*
2. *'Locality' refers to a 10 km buffer of the Study Area.*

3.4 Assumptions and Limitations

The field and desktop assessments provide an overview of the biodiversity values that exist within the Study Area. Surveys were undertaken at discrete locations to gain a general understanding of the types of species and habitat features that occur. Not all portions within the Study Area could be visited during the field surveys.

The absence of a species from a database list or observational study does not confirm its absence within the Study Area. The lack of existing records from databases is more likely to indicate a low historic sampling effort in the region, as opposed to an absence of species. Similarly, the timing of the surveys and survey methods undertaken to date precludes the detection of a number of species. Future targeted biodiversity surveys will be completed to inform an EIS.

To overcome these limitations, the likelihood of occurrence is based on the precautionary approach and identifies species that have the potential to occur rather than relying on species sightings alone.

4. BIODIVERSITY VALUES

This chapter summarises the results of the desktop review and field investigations used to understand and assess the potential biodiversity values present within the Study Area. Key landscape features and a summary of biodiversity values within the Study Area are summarised in **Table 4-1**.

Table 4-1 Summary of Landscape Features and Biodiversity Values

Landscape feature	Summary notes
IBRA Bioregion IBRA Sub-region	New England Tablelands Armidale Plateau
Land use and history of disturbance	The existing land use within the Study Area and surrounds is predominantly rural and characterised predominantly by cattle grazing.
Vegetation	As described in Section 4.1, field surveys identified that two PCTs occur within the Study Area: ■ PCT 567: Broad-leaved Stringybark – Yellow Box shrub / grass open forest of the New England Tableland Bioregion ■ PCT 704: Blakely's Red Gum – Yellow Box grassy open forest or woodland of the new England Tableland Bioregion. These PCTs are mapped in Figure 4-1. Vegetation within the Study Area is typically modified, having a minimal shrub layer, and grass cover dominated by pasture grasses. A potential Threatened Ecological Community (White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland) may be present associated with PCT 704, largely located along and adjoining the road reserve of Eathorpe Road (refer Figure 4-2).
Threatened species	A Likelihood of Occurrence Assessment (Appendix C) identified 11 threatened species as likely to occur in the Study Area. These species are detailed in Section 4.4.1 and Section 4.4.2 and presented in Figure 4-3.
Areas of Geological Significance	There are no Areas of Geological Significance within the Study Area.
Areas of Outstanding Biodiversity Value (AOBV)	There are no Areas of Outstanding Biodiversity Value within the Study Area.
Aquatic habitat	There is aquatic habitat present in the Study Area in the form of farm dams.
Habitat Values	11 hollow bearing trees were recorded within the Study Area, these are shown in Figure 4-4.

4.1 Vegetation Communities

The New England Bioregion is characterised by open forests and woodlands. The climate is mainly temperate to cool temperate with montane climate at higher elevations. Large portions of land within the Study Area have been disturbed and are characterised by grazed native and modified open woodland resulting from livestock grazing.

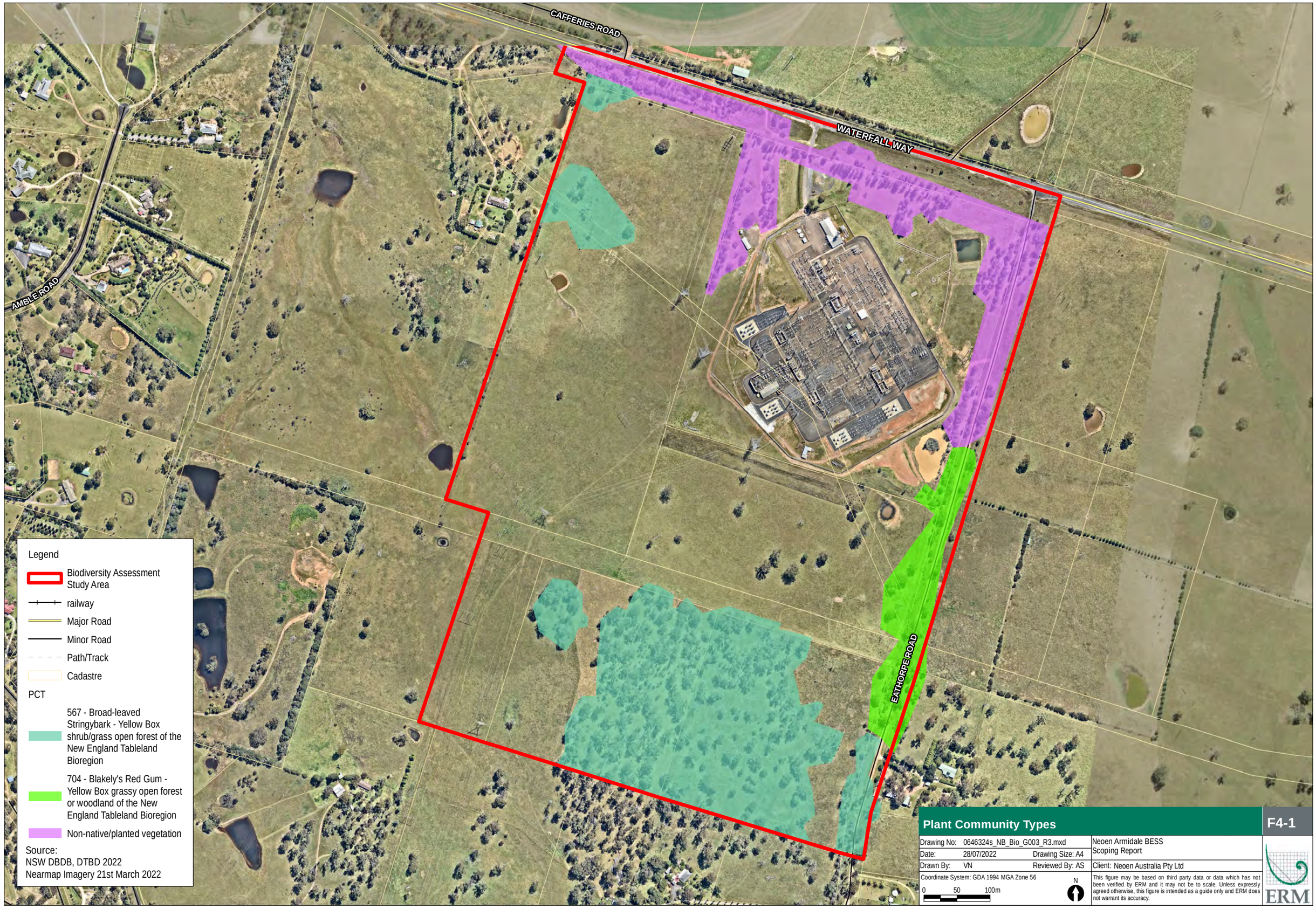
A review of the State Vegetation Type Map (version C1.1.M1 published 23 June 2022) was undertaken to assess existing vegetation mapping information within the Study Area. This mapping was further refined based on the June 2022 (Winter) survey observations and BAM plot data, resulting in a total of two PCTs being identified across the Study Area. **Table 4-2** below lists these PCTs and the area (ha) of each within the Study Area.

The dominant vegetation type across the Study Area has been identified as PCT 567, Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion which covers 12.4 ha, 54% of the Study Area.

Thirteen (13) vegetation integrity plots (BAM plots) have been completed across the Study Area and surrounding properties (Table 4.2) to collect floristic data to identify and map PCTs. This includes eight plots in areas of native vegetation and five plots in areas of non-native/planted vegetation or exotic grassland.

Table 4-2 Plant Community Types within the Study Area

PCT No.	PCT Name	Vegetation Class	BAM Plots Completed	Study Area (ha)	Project Area (ha)
567	Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion	New England Grassy Woodlands	7	13.14	12.57
704	Blakely's Red Gum - Yellow Box grassy open forest or woodland of the New England Tableland Bioregion	New England Grassy Woodlands	1	2.51	1.03



Plant Community Types

F4-1

Drawing No:	0646324s_NB_Bio_G003_R3.mxd		Neoen Armidale BESS Scoping Report
Date:	28/07/2022	Drawing Size: A4	
Drawn By:	VN	Reviewed By: AS	Client: Neoen Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

0 50 100m

N

ERM

4.2 Threatened Ecological Communities

Three (3) EPBC Act TECs were identified in the PMST outputs as having the potential to occur within the Study Area. These TECs include:

- New England Peppermint (*Eucalyptus nova-anglica*) Grassy Woodlands;
- Upland Wetlands of the New England Tablelands (New England Tableland Bioregion) and the Monaro Plateau (South Eastern Highlands Bioregion); and
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.

One TEC listed under the BC Act and EPBC Act as critically endangered has the potential to occur based on its association with PCTs identified within the Study Area:

- White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Associated PCT 704).

Vegetation integrity plots (BAM Plots) completed in June 2022 have identified species consistent with the critically endangered TEC White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland associated with PCT 704, located within the Study Area.

Additional field survey and analysis of vegetation plot data will be used to refine the extent and presence of these TECs within the Study Area as part of the BDAR.

4.2.1 White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland TEC

White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland are listed as Critically Endangered under the EPBC Act. BAM plots were undertaken in PCTs associated with the TEC *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland*; the species observed were compared to the indicator species for the TEC detailed in the EPBC Act Listing Advice (TSCC, 2006). A description of the TEC including details of seven (7) indicator species identified in BAM plots conducted in PCT 704 is provided in **Table 4-3**. Potential TEC areas are mapped in **Figure 4-2.**

Table 4-3 White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland TEC

TEC	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland TEC
Description	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland are characterised by a species-rich understorey of native tussock grasses, herbs and scattered shrubs, and the dominance, or prior dominance, of White Box, Yellow Box or Blakely's Red Gum. The tree-cover is generally discontinuous and consists of widely-spaced trees of medium height in which the canopies are clearly separated. The ground layer is dominated by tussock grasses, with an overstorey dominated or co-dominated by White Box, Yellow Box or Blakely's Red Gum and a spare or patchy shrub layer. Occurs in areas where rainfall is between 400 and 1200 mm per annum, on moderate to highly fertile soils at altitudes of 170 m to 1200 m
Canopy and mid layers (trees and large woody shrubs)	Dominant tree species: White Box (*Eucalyptus albens*), Yellow Box (*E. melliodora*) or Blakely's Red Gum (*E. blakelyi*). Associated, and occasionally co-dominant, trees include, but are not restricted to: Grey Box (*Eucalyptus microcarpa*), Fuzzy Box (*E. conica*), Apple Box (*E. bridgesiana*), Red Box (*E. polyanthemos*), Red Stringybark (*E. macrorhyncha*), White Cypress Pine (*Callitris glaucophylla*), Black Cypress Pine (*C. enderlicheri*), Long-leaved Box (*E. gonicalyx*), New England Stringybark (*E. calignosa*), Brittle Gum (*E. mannifera*), Candlebark (*E. rubida*), Argyle Apple (*E. cinerea*), Kurrajong (*Brachychiton populneus*) and Drooping She-oak (*Allocasuarina verticillata*)

TEC	**White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland TEC**
Species:	The Listing Advice for this TEC identifies indicator species for the ecological community, which are typically indicative of the TEC. Of these, 7 were identified within BAM plots conducted within PCT 704 in the Study Area. *Sporobolus creber* *Chrysocephalum apiculatum* *Geranium solanderi* *Juncus sp.* *Eucalyptus blakelyi* *Eucalyptus caliginosa* *Eucalyptus meliodora*
Fauna	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland provides important habitat for a large number of plants and animals (Department of the Environment and Heritage, 2006). This includes BC Act and EPBC Act listed threatened species. Threatened species recorded to occur in the ecological community are listed below: **Plants** Austral Toadflax (*Thesium australe*) Button Wrinklewort (*Rutidosis leptorrhynchoides*) Dichanthium setosum Euroa Guinea-flower (*Hibbertia humifusa spp. erigens*) Hoary Sunray (*Leucochrysum albicans var. tricolor*) Lobed Blue-grass (*Bothriochloa biloba*) Narrow Goodenia (*Goodenia macbarronii*) Small Purple-pea (*Swainsona recta*) Tarengo Leek Orchid (*Prasophyllum petilum*) Yass Daisy (*Ammobium craspedioides*) **Invertebrates** Bathurst Copper Butterfly (*Paralucia spinifera*) Golden Sun Moth (*Synemon plana*) Reptiles Pink-tailed Worm-lizard (*Aprasia parapulchella*) Striped Legless Lizard (*Delma impar*) **Birds** Plains-wanderer (*Pedionomus torquatus*) Regent Honeyeater (*Xanthomyza phrygia*) Superb Parrot (*Polytelis swainsonii*) Swift Parrot (*Lathamus discolor*) **Mammals** Spotted-tail Quoll (*Dasyurus maculatus maculatus*) SE mainland population

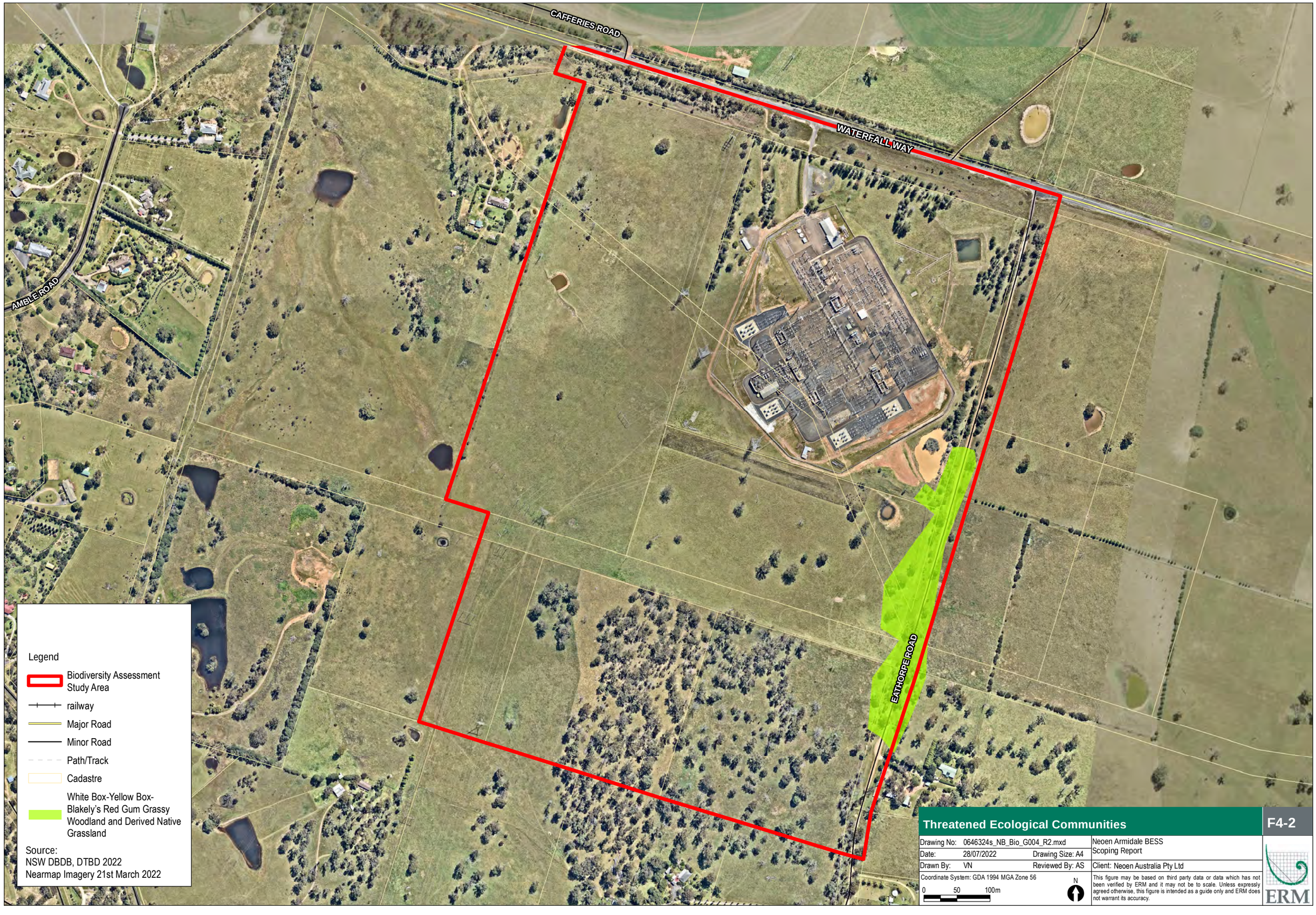
Based on surveys undertaken to date, the area mapped as PCT 704 meets the requirement to be considered the EPBC Act listed, and BC Act listed Box Gum woodland TEC based on the below.

BC Act listed:

- Site is located in the Tablelands of NSW;
- Site contains Yellow Box and Blakely's Red Gum;
- The ground layer is dominated by grass species; and
- Natural regeneration is present.

EPBC Act listed:

- Most common overstorey species Blakey's Red Gum and Yellow Box; and
- Predominately native understorey and patch size is 1 ha or greater.



Threatened Ecological Communities

F4-2

Drawing No:	0646324s_NB_Bio_G004_R2.mxd		Neoen Armidale BESS Scoping Report
Date:	28/07/2022	Drawing Size: A4	
Drawn By:	VN	Reviewed By: AS	Client: Neoen Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

0 50 100m

N

ERM

4.3 Candidate Threatened Species

In accordance with the requirements of Section 5.2 of the BAM, the BDAR will identify the habitat suitability for threatened species within the Study Area (refer to Appendix C for a preliminary likelihood of occurrence). Species that meet all the relevant criteria will be automatically populated in the BAM-C to be assessed either for ecosystem credits or species credits. No further assessment is required for those species that are unlikely to occur or where the Study Area is considered as unsuitable habitat.

- **Ecosystem credit species** are considered likely to have suitable habitat within the Study Area and must be assessed for impacts, including measures taken to avoid, minimise and mitigate impacts. These species are referred to as 'predicted species' in the BAM-C and the assessor must calculate ecosystem credits to offset any residual impacts; and
- **Species credit species** are likely to have suitable habitat within the Study Area. They are referred to as 'candidate species' in the BAM-C and will require further assessment.

A preliminary list of candidate species is provided in **Table 4-4**.

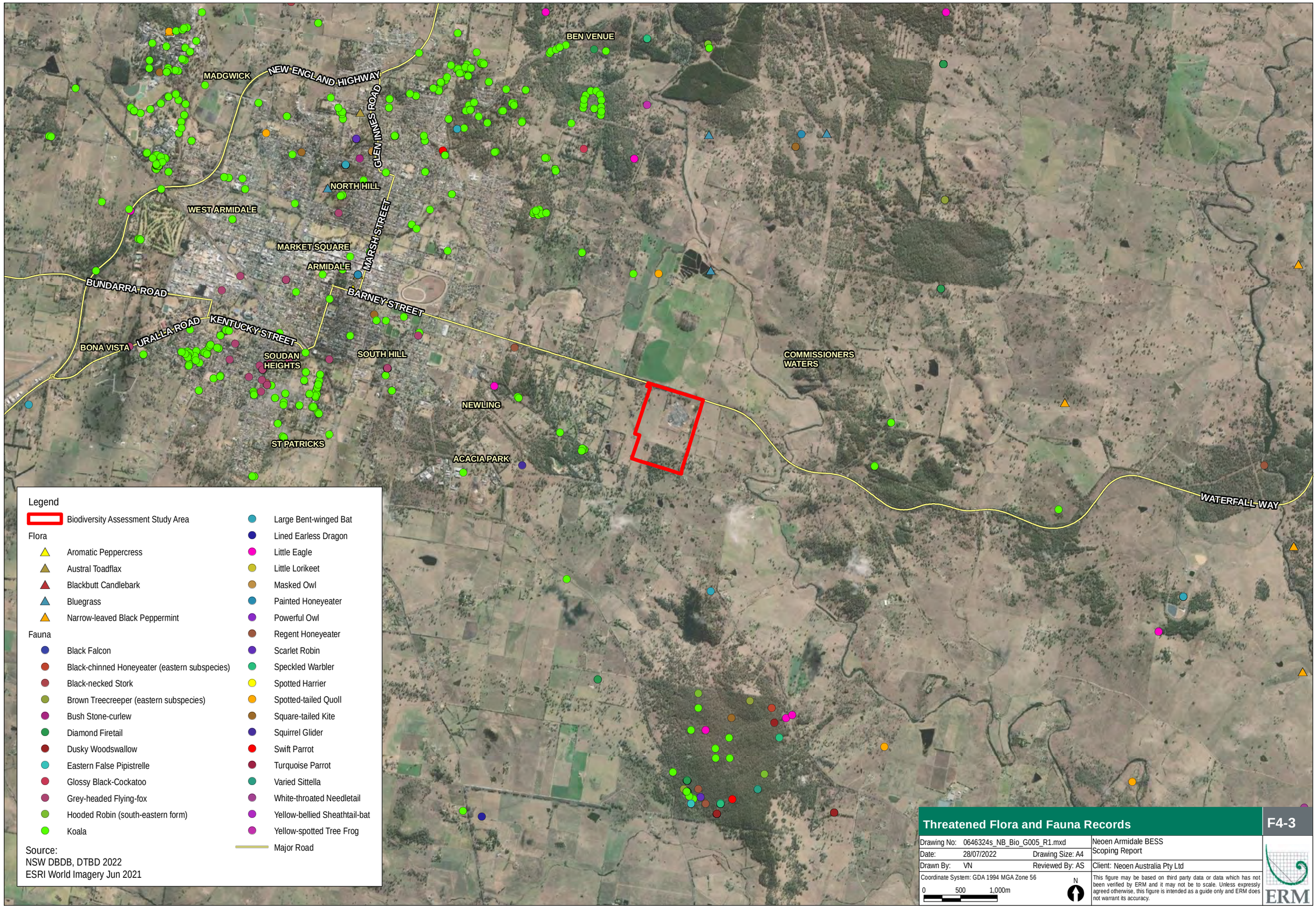
Table 4-4 Preliminary List of Candidate Species that will require Assessment under the BAM

Scientific Name	Common Name	Survey Months
Fauna		
Adelotus brevis - endangered population	Tusked Frog population in the Nandewar and New England Tableland Bioregions	October - February
Anthochaera phrygia	Regent Honeyeater	No months specified
Burhinus grallarius	Bush Stone-curlew	All year
Calyptorhynchus lathami	Glossy Black-Cockatoo	January – September
Cercartetus nanus	Eastern Pygmy-possum	October – March
Chalinolobus dwyeri	Large-eared Pied Bat	November – January
Haliaeetus leucogaster	White-bellied Sea-Eagle	July- December
Hieraaetus morphnoides	Little Eagle	August – October
Hoplocephalus bitorquatus	Pale-headed Snake	November - March
Lathamus discolor	Swift Parrot	No months specified
Litoria subglandulosa	Glandular Frog	October - December
Lophoictinia isura	Square-tailed Kite	September – January
Miniopterus orianae oceanensis	Large Bent-winged Bat	December – February
Myotis macropus	Southern Myotis	October – March
Ninox connivens	Barking Owl	May – December
Ninox strenua	Powerful Owl	May – August
Petauroides volans	Greater Glider	All year
Petaurus norfolcensis	Squirrel Glider	All year
Petrogale penicillata	Brush-tailed Rock-wallaby	All year
Phascolarctos cinereus	Koala	All year
Pteropus poliocephalus	Grey-headed Flying-fox	October – December
Ninox connivens	Barking Owl	May – December
Tyto novaehollandiae	Masked Owl	May – August

Scientific Name	Common Name	Survey Months
Flora		
Bertya ingramii	Narrow-leaved Bertya	All year
Boronia granitica	Granite Boronia	All year
Callitris oblonga	Pygmy Cypress Pine	All year
Chiloglottis platyptera	Barrington Tops Ant Orchid	October
Dichanthium setosum	Bluegrass	November – May
Diuris pedunculata	Small Snake Orchid	September – October
Eucalyptus magnificata	Northern Blue Box	All year
Eucalyptus nicholii	Narrow-leaved Black Peppermint	All year
Grevillea beadleana	Beadle's Grevillea	All year
Haloragis exalata subsp. *velutina*	Tall Velvet Sea-berry	All year
Lepidium hyssopifolium	Aromatic Peppercress	October – December
Picris evae	Hawkweed	November – February
Swainsona sericea	Silky Swainson-pea	September – November
Thesium australe	Austral Toadflax	November – February

4.4 Threatened Species

Threatened species recorded within a 10 km buffer of the Study Area was obtained from the NSW BioNET Atlas and is presented in Figure 4-3.


BEN VENUE
MADGWICK
NEW ENGLAND HIGHWAY
GLEN INNES ROAD
NORTH HILL
WEST ARMIDALE
MARSH STREET
MARKET SQUARE
ARMIDALE
BUNDARRA ROAD
BARNEY STREET
URALLA ROAD
KENTUCKY STREET
BONA VISTA
SOUDAN HEIGHTS
SOUTH HILL
COMMISSIONERS WATERS
NEWLING
ST PATRICKS
ACACIA PARK
WATERFALL WAY
Legend
Biodiversity Assessment Study Area
Flora
Aromatic Peppercress
Austral Toadflax
Blackbutt Candlebark
Bluegrass
Narrow-leaved Black Peppermint
Fauna
Black Falcon
Black-chinned Honeyeater (eastern subspecies)
Black-necked Stork
Brown Treecreeper (eastern subspecies)
Bush Stone-curlew
Diamond Firetail
Dusky Woodswallow
Eastern False Pipistrelle
Glossy Black-Cockatoo
Grey-headed Flying-fox
Hooded Robin (south-eastern form)
Koala
Large Bent-winged Bat
Lined Earless Dragon
Little Eagle
Little Lorikeet
Masked Owl
Painted Honeyeater
Powerful Owl
Regent Honeyeater
Scarlet Robin
Speckled Warbler
Spotted Harrier
Spotted-tailed Quoll
Square-tailed Kite
Squirrel Glider
Swift Parrot
Turquoise Parrot
Varied Sittella
White-throated Needletail
Yellow-bellied Sheathtail-bat
Yellow-spotted Tree Frog
Major Road
Source:
NSW DBDB, DTBD 2022
ESRI World Imagery Jun 2021
Threatened Flora and Fauna Records
F4-3
Drawing No: 0646324s_NB_Bio_G005_R1.mxd
Date: 28/07/2022
Drawing Size: A4
Drawn By: VN
Reviewed By: AS
Coordinate System: GDA 1994 MGA Zone 56
0 500 1,000m
N
Neoen Armidale BESS
Scoping Report
Client: Neoen Australia Pty Ltd
This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.
ERM

4.4.1 Flora

A review of the NSW BioNet and ALA databases identified no records of threatened flora species within the Study Area. The likelihood of occurrence assessment (Appendix C) considered one (1) flora species, Narrow-leaved Black Peppermint (*Eucalyptus nicholii*), as likely to occur based on records in the locality, and suitable habitat present within the Study Area. The species is considered Vulnerable under the EPBC Act and BC Act.

During the June 2022 field surveys, no targeted flora surveys were undertaken; however, rapid assessment to determine key vegetation types and potential for vegetation and habitat of conservation significance and BAM plot survey work were undertaken.

The survey effort for threatened flora will be continued during further field surveys to meet the requirements of the BAM, and to inform the EIS.

4.4.2 Fauna

A review of the NSW BioNet and ALA databases identified no records of threatened fauna species within the Study Area. There were multiple records of additional threatened species within approximately 10 km of the Study Area, these have been considered within the Likelihood of Occurrence Assessment in Appendix C. The Likelihood of Occurrence Assessment identified 10 fauna species that are considered likely to occur within the Study Area based on records in the locality and the presence of preferred habitat. These species are detailed in **Table 4-5**.

Hollow bearing trees were recorded within the Study Area including information such as diameter at breast height, height, number of hollows and diameter of hollows (refer to Figure 4-4).

Surveys targeting candidate species comprising of call playback and spotlighting were undertaken to determine the presence of the Masked Owl and Barking Owl, no sightings of either species were recorded.

Table 4-5 Threatened Fauna Species Likely to Occur within the Study Area

Scientific Name	Common Name	BC Act	EPBC Act
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-
Chthonicola sagittata	Speckled Warbler	V	-
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V	-
Daphoenositta chrysoptera	Varied Sittella	V	-
Hieraaetus morphniodes	Little Eagle	V	-
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	V	-
Petroica boodang	Scarlet Robin	V	-
Stagonopleura guttata	Diamond Firetail	V	-
Tyto novaehollandiae	Masked Owl	V	-
Phascolarctos cinereus	Koala	E	E

4.5 Hollow Bearing Trees

Table 4-6 outlines the 11 Hollow bearing trees that were identified within the Study Area. For each tree identified the following was recorded:

- Location coordinates;
- Size of tree (diameter at breast height);
- Genus and species; and
- Notes on important habitat values or fauna observations (e.g., nests, scats, scratches, threatened species).

Figure 4-4 displays the location of the hollow bearing trees.

Table 4-6 Hollow Bearing Trees

Tree Species	Tree Location	Tree Height (m)	Tree Size (dbh)	Number of Hollows and Dimensions
Eucalyptus dalrympleana	151.707804 -30.529597	8	100	4: 30 mm 4: <15 mm
Eucalyptus dalrympleana	151.709583 -30.529466	8	100	3: 15 mm 5: 10 mm
Eucalyptus blakelyi	151.709074 -30.531052	10	100	5: 10 mm 5: 5 mm
Eucalyptus caligonosa	151.710285 -30.534907	15	100	1: 10 mm
Eucalyptus caligonosa	151.711330 -30.535678	12	100	1: 15 mm
Eucalyptus dalrympleana	151.713728 -30.537462	8	50	1: 20 mm 2: 10 mm
Stag	151.710476 -30.537291	8	70	2: 30 mm 2: 15 mm
Eucalyptus caligonosa	151.713298 -30.539056	6	70	2: 10 mm
Angohpra sp.	151.708966 -30.538085	4	45	4: 10 mm 1: 20 mm
Eucalyptus caligonosa	151.709151 -30.537850	10	60	1: 20 mm
Stag	151.708877 -30.537750	8	60	3: 15 mm 1:20 mm

CAFFERIES ROAD

WATERFALL WAY

AMBLE ROAD

EATHORPE ROAD

Legend

- Angohpra sp.
- Eucalyptus blakelyi
- Eucalyptus caligonosa
- Eucalyptus dalrympleana
- Stag
- Biodiversity Assessment Study Area
- railway
- Major Road
- Minor Road
- Path/Track
- Cadastre

Source:
NSW DBDB, DTBD 2022
Nearmap Imagery 21st March 2022

Hollow Bearing Trees

F4-4

Drawing No:	0646324s_NB_Bio_G006_R1.mxd		Neoen Armidale BESS Scoping Report
Date:	28/07/2022	Drawing Size: A4	
Drawn By:	VN	Reviewed By: AS	Client: Neoen Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

0 50 100m

N

ERM

5. MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

Based on the results of the desktop assessment and the June 2022 field surveys, a preliminary assessment of MNES within the Study Area is provided in **Table 5-1**.

Table 5-1 Preliminary assessment of MNES

MNES	Relevance to the Project Area
World Heritage Properties	Not identified within the Study Area or within 50 km radius
National heritage properties	Two Commonwealth Heritage Places were identified in the PMST: ■ Armidale Post Office ■ Hunter River Lancers Training Depot
Wetlands of international importance	There are no wetlands of international importance within the Study Area. The closest records are greater than 100 km from the Study Area (as identified within the Protected Matters Search Tool (PMST).
Threatened Ecological Communities	Three (3) EPBC Act TECs were identified within the Protected Matters Search Tool as having the potential to occur within the Study Area. These TECs include: ■ New England Peppermint (*Eucalyptus nova-anglica*) Grassy Woodlands ■ Upland Wetlands of the New England Tablelands (New England Tableland Bioregion) and the Monaro Plateau (South Eastern Highlands Bioregion) ■ White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland Presence of White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland has been confirmed. No other EPBC Act TECs occur within the Study Area.
Threatened species	Two (2) EPBC Act listed species are considered likely to occur based on records in the locality and the presence of preferred habitat: ■ Koala (Endangered) ■ Narrow-leaved Black Peppermint (Vulnerable)
Migratory species	No birds listed as Migratory under the EPBC Act have been identified on the Study Area, nor been considered known or likely to occur within the Study Area based on the Likelihood of Occurrence Assessment.
Commonwealth Land area	None identified within the Study Area. Five Commonwealth areas were identified within 10km of the Study Area: ■ Commonwealth Land - Australian Postal Commission ■ Commonwealth Land - Australian Postal Corporation ■ Commonwealth Land - Australian Telecommunications Commission ■ Commonwealth Land - Defence Housing Authority ■ Commonwealth Land - Telstra Corporation Limited
The Great Barrier Reef Marine Park	Not identified within the Study Area or within 50 km radius
Nuclear actions	Not Applicable
Water resources as they relate to Nuclear Power	Not Applicable

Under the EPBC Act a referral is required to DCCEEW for projects, or 'actions', that are likely to have a significant impact on a MNES or the environment on Commonwealth land. The Australian Government Minister for the Environment and Water whether or not a Proposal will need formal assessment and approval under the EPBC Act. If so, that Proposal is a controlled action under the EPBC Act.

The field surveys have confirmed the presence of a patch of the critically endangered White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland TEC. This TEC is listed as critically endangered under the EPBC Act and any impacts that lead to temporary or permanent loss of an areas of this TEC have the potential to result in a significant impact, requiring referral and approval from the Commonwealth.

The findings of biodiversity values assessment carried out to date have not confirmed the presence of any threatened species listed under the EPBC Act in the Study Area; however, 2 EPBC Act listed species are considered likely to occur. Koala habitat is present across the majority of the Study Area, with those areas mapped as PCT 704 and PCT 567, as well as the scattered eucalypt trees, providing potential foraging and breeding habitat for this species. There is currently no published guideline on thresholds for significant impact to Koalas, and with the change in listing to endangered, even relatively minor impacts to Koala habitat can be determined as significant.

Depending on the final footprint for the Project, the proposal may need to be referred to the Australian Government Minister for the Environment and Water through the preparation of a separate referral.

6. PRELIMINARY IMPACT ASSESSMENT

The construction and operation of the Project has the potential to cause impacts to biodiversity values including threatened species and TECs listed under the BC Act and EPBC Act. These will need to be considered as part of the EIS to be prepared under Part 5 of the NSW EP&A Act. Additionally, the proposal may need to be referred to the Australian Government Minister for the Environment and Water through the preparation of a separate referral.

As there are recorded Biodiversity values within the Study Area, application of the BAM and the preparation of a BDAR will be required.

Candidate species will be selected for further assessment by considering how they and their habitat might be affected by the Project. A preliminary list has been presented in **Table 4-4**. In this instance the main potential impacts of the Project (during construction and operation) that would need to be assessed include:

- Clearing of TECs;
- Loss of extant native vegetation communities and associated fauna habitat and the subsequent impacts to local population of native species, particularly threatened and migratory species;
- Increased habitat fragmentation; and
- Mortality and injury from vehicle strikes and vegetation clearing.

Mitigation measures relevant to threatened species, TECs, native vegetation communities, hydrology and construction impacts will be addressed within the EIS. There is also a risk that weeds may be transported within and off-site. Mitigation measures to reduce the chance of the spread of weeds will be considered within the EIS.

6.1 Recommended Mitigation Measures and Next Steps

The desktop assessment and field survey effort undertaken to date have highlighted a range of known and potential biodiversity constraints. These have been summarised in **Table 6-1**.

The highest constraint identified in the Study Area is the patch of PCT 704 within the Eathorpe Road reserve that meets the requirements of the critically endangered White Box Yellow Box Blakely's Red Gum Woodland TEC. This TEC is also listed as a serious and irreversible impact entity under the BC Act, an additional justification any impacts must be presented in the BDAR and EIS.

The BC Act and the Biodiversity Offset Scheme, also requires project proponents to apply the 'avoid, minimise, offset' hierarchy when completing an assessment of impacts. For this Project, measures to avoid areas of PCT 704 and to minimise impacts to PCT 567 and scattered, hollow-bearing trees must be included in the design. If impacts to these identified significant biodiversity features cannot be avoided or minimised, then strong justification is required, including an assessment of why alternatives are not feasible.

Table 6-1 Biodiversity Constraints in Study Area

Biodiversity Conservation Value and Implications	Biodiversity Constraint
Negligible	■ Pastoral areas
Low Offset requirements	■ Areas of planted and non-native vegetation ■ Isolated paddock trees containing hollows
Medium Habitat for threatened species Offset requirements	■ Areas of PCT 567
High EPBC Act referral and approval Significant offset requirements	■ Critically Endangered TEC recorded adjacent to Eathorpe Road, classified as a Serious and Irreversible Impact entity under the BC Act. ■ Classified as CE under both the EPBC Act and BC Act

To effectively avoid and minimise impacts associated with the Project, the following management recommendations have been suggested for the identified impacts:

- Loss of existing native vegetation:
  - Areas of TEC should be avoided throughout all stages of the Project;
  - Areas of remnant and regrowth vegetation to be avoided at the design stage, where practicable;
  - Areas of threatened flora and fauna habitat will be avoided at the design stage, where practicable;
  - If vegetation clearing is required, a Vegetation Management Plan will be implemented to ensure that clearing is undertaken in accordance with legislative standards and requirements;
- Weed and pest control:
  - A Pest Management Plan will be developed and implemented for the Project. This will include measures such as vehicle wash downs, weed certification and obligations to stick to access tracks throughout the Study Area;
  - Weed management and control methods will depend upon the location, weed species identified, the degree of the infestation, relevant landholder agreement or conduct and compensation agreements provisions, and local, state and national regulatory requirements;
  - Imported material able to transport weed seed will be assessed to ensure they are free of contamination, disease and invasive weeds;
  - WoNS and Invasive species will be identified and monitoring in the Study Area. Appropriate weed monitoring will occur to ensure new weed species are identified, recorded and managed appropriately;
- Mortality or injury to native fauna:
  - No driving will occur in unauthorised areas, and in other areas will be carried out at safe speeds adopted to the road conditions;
  - During vegetation clearing activities fauna management will be implemented that includes pre-clearing surveys, fauna spotter-catcher supervision and methods to reduce impacts as set out in a Fauna Management Plan; and
  - Injured, sick or dead fauna will be recorded and reported during construction. This can be carried out by a fauna spotter-catcher.

The following steps are considered essential in ensuring an adequate assessment of biodiversity values is continued throughout future stages of the project:

- Project layout and design is to consider avoiding areas of high biodiversity constraint, to reduce impacts to the critically endangered TEC associated with PCT 704;
- Project layout and design to minimise impacts to PCT 567, to reduce impacts to Koala habitat and areas of native vegetation;
- Conduct targeted seasonal (spring) fauna and flora surveys for species considered likely or potentially occurring within the project boundary in accordance with relevant federal or State survey guidelines;
- Prepare and submit a BDAR in accordance with the BAM; and
- If impacts to TEC and Koala habitat cannot be avoided and minimised, prepare and submit EPBC referral to the Australian Government Minister for the Environment and Water.

7. REFERENCES

DoE (2013) Matters of National Environmental Significance Significant impact guidelines 1.1

Department of the Environment and Heritage. (2006). *White Box - Yellow Box - Blakely's Red Gum grassy woodlands and derived native grasslands.*

Threatened Species Scientific Committee. (2006). *Commonwealth Listing Advice on White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.*

APPENDIX A PMST SEARCH RESULTS

Australian Government

Department of Agriculture, Water and the Environment

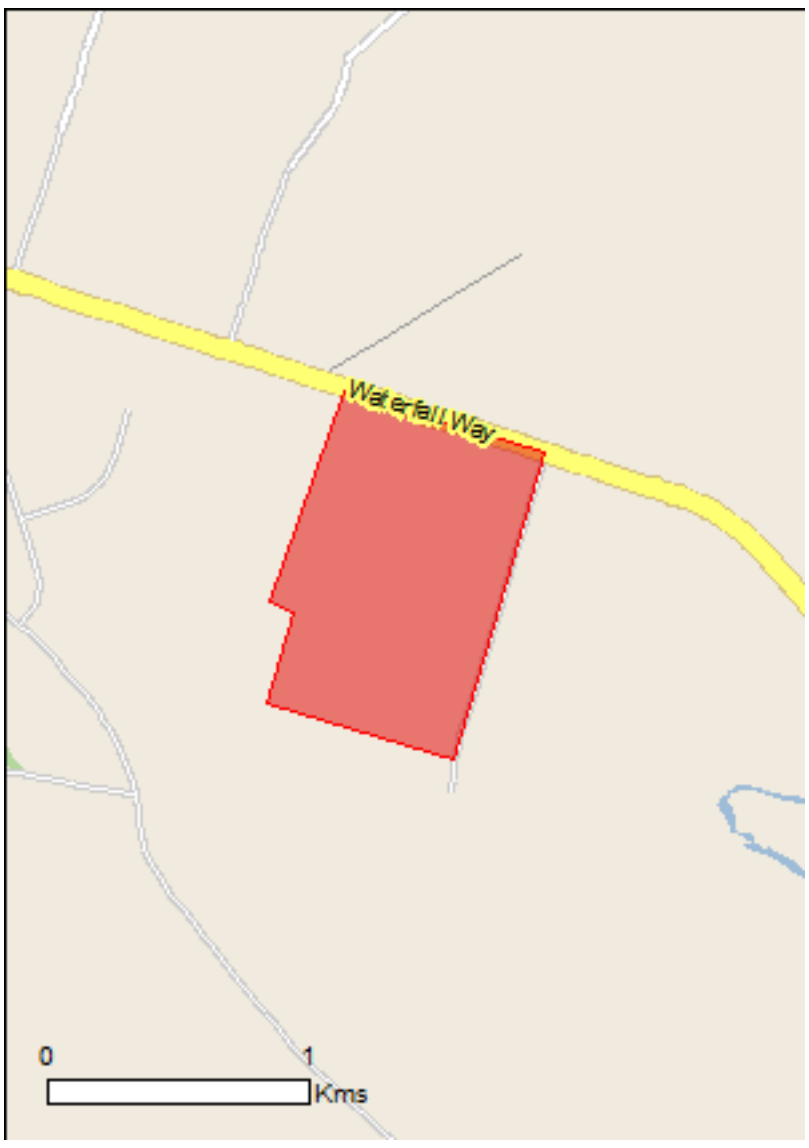
EPBC Act Protected Matters Report

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

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

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 28/06/22 09:45:28



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2015

Coordinates

Buffer: 10.0Km

Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	34
Listed Migratory Species:	13

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	6
Commonwealth Heritage Places:	2
Listed Marine Species:	20
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	2
Regional Forest Agreements:	1
Invasive Species:	31
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

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

Name	Status	Type of Presence
New England Peppermint (Eucalyptus nova-anglica) Grassy Woodlands	Critically Endangered	Community likely to occur within area
Upland Wetlands of the New England Tablelands (New England Tableland Bioregion) and the Monaro Plateau (South Eastern Highlands Bioregion)	Endangered	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Frogs		

Name	Status	Type of Presence
Litoria castanea		
Yellow-spotted Tree Frog, Yellow-spotted Bell Frog [1848]	Critically Endangered	Species or species habitat likely to occur within area
Litoria piperata		
Peppered Tree Frog [1827]	Vulnerable	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland population)		
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
Petauroides volans		
Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Petaurus australis australis		
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area
Petrogale penicillata		
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)		
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Plants		
Arthraxon hispidus		
Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area
Callistemon pungens		
[55581]	Vulnerable	Species or species habitat likely to occur within area
Cynanchum elegans		
White-flowered Wax Plant [12533]	Endangered	Species or species habitat may occur within area
Dichanthium setosum		
bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Diuris eborensis		
[88275]	Endangered	Species or species habitat may occur within area
Diuris pedunculata		
Small Snake Orchid, Two-leaved Golden Moths, Golden Moths, Cowslip Orchid, Snake Orchid [18325]	Endangered	Species or species habitat likely to occur within area
Eucalyptus mckieana		
McKie's Stringybark [20199]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus nicholii		
Narrow-leaved Peppermint, Narrow-leaved Black Peppermint [20992]	Vulnerable	Species or species habitat known to occur within area
Eucalyptus rubida subsp. barbigerorum		
Blackbutt Candlebark [64618]	Vulnerable	Species or species habitat may occur within

Name	Status	Type of Presence
		area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area
Haloragis exalata subsp. velutina Tall Velvet Sea-berry [16839]	Vulnerable	Species or species habitat may occur within area
Lepidium hyssopifolium Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat may occur within area
Picris evae Hawkweed [10839]	Vulnerable	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Tylophora woollsii [20503]	Endangered	Species or species habitat may occur within area
Reptiles		
Uvidicolus sphyrurus Border Thick-tailed Gecko, Granite Belt Thick-tailed Gecko [84578]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within

Name	Threatened	Type of Presence
		area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area
Pandion haliaetus		
Osprey [952]		Species or species habitat may occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [Resource Information]

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

Name
Commonwealth Land -
Commonwealth Land - Australian Postal Commission
Commonwealth Land - Australian Postal Corporation
Commonwealth Land - Australian Telecommunications Commission
Commonwealth Land - Defence Housing Authority
Commonwealth Land - Telstra Corporation Limited

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Historic		
Armidale Post Office	NSW	Listed place
Hunter River Lancers Training Depot	NSW	Listed place

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Neophema chrysostoma Blue-winged Parrot [726]		Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Imbota	NSW
Yina	NSW

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

Name	State
North East NSW RFA	New South Wales

Invasive Species [Resource Information]

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

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard, Northern Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove, Spotted Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat may occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Equus caballus Horse [5]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Nassella neesiana Chilean Needle grass [67699]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Solanum elaeagnifolium Silver Nightshade, Silver-leaved Nightshade, White Horse Nettle, Silver-leaf Nightshade, Tomato Weed, White Nightshade, Bull-nettle, Prairie-berry, Satansbos, Silver-leaf Bitter-apple, Silverleaf-nettle, Trompillo [12323]		Species or species habitat likely to occur within area

Caveat

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

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

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

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

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

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

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-30.529024 151.709197,-30.529024 151.70924,-30.530872 151.716171,-30.540002 151.713038,-30.538321 151.706515,-30.535585 151.707502,-30.535345 151.706686,-30.529024 151.709197

Acknowledgements

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

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

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

Please feel free to provide feedback via the Contact Us page.

Department of Agriculture Water and the Environment
GPO Box 858
Canberra City ACT 2601 Australia
+61 2 6274 1111

APPENDIX B FLORA AND FAUNA OBSERVED DURING FIELD SURVEYS

Common Name	Scientific Name	BC Act Status	EPBC Act Status
Birds Observed During Field Surveys			
Australian magpie	*Gymnorhina tibicen*	-	-
Buff-rumped Thornbills	*Acanthiza reguloides*		
Crimson rosella	*Platycercus elegans*		
Double-barred Finch	*Taeniopygia bichenovii*		
Eastern rosella	*Platycercus eximius*		
Fairy Martin	*Petrochelidon ariel*		
Grey butcherbird	*Cracticus torquatus*	-	-
Grey-shrike thrush	*Colluricincla harmonica*		
Magpie-lark	*Grallina cyanoleuca*	-	-
Noisy miner	*Manorina melanocephala*	-	-
Pale-headed Rosella	*Platycercus adscitus*		
Red-browed Finches	*Neochmia temporalis*		
Red wattlebird	*Anthochaera carunculata*		
Sulphur-crested Cockatoo	*Cacatua galerita*		
Torresian crow	*Corvus Orru*	-	-
Wedge-tailed eagle	*Aquila audux*	-	-
Mammals Observed During Field Surveys			
Common Brushtail Possum	Trichosurus vulpecula	-	-
Cow*	*Bos taurus*	-	-

Common Name	Scientific Name	BC Act Status	EPBC Act Status
Flora Species Observed During Field Surveys			
Hickory wattle	*Acacia implexa*	-	-
Prickly moses	*Acacia ulicifolia*	-	-
Bidgee-widgee	*Acaena novae-zelandiae*	-	-
Red sorrel	*Acetosella vulgaris*	-	-
Powell's amaranth	*Amaranthus powellii*	-	-
Winged everlasting	*Ammobium alatum*	-	-
Drooping mistletoe	*Amyema pendulum*	-	-
Rough-barked apple	*Angophora floribunda*	-	-
Common woodruff	*Asperula conferta*	-	-
Corkscrew	*Austrostipa scabra*	-	-
Cobblers' pegs	*Bidens pilosa*	-	-
Pitted bluegrass	*Bothriochloa decipiens*	-	-
Sweet bursaria	*Bursaria spinosa*	-	-
Purple burr-daisy	*Calotis cuneifolia*	-	-
Knob sedge	*Carex inversa*	-	-

Common Name	Scientific Name	BC Act Status	EPBC Act Status
Wild rosemary	*Cassinia quinquefaria*	-	-
Yellow buttons	*Chrysocephalum apiculatum*	-	-
Spear thistle	*Cirsium vulgare*	-	-
Flaxleaf fleabane	*Conyza bonariensis*	-	-
	Conyza parva	-	-
Couch grass	*Cynodon dactylon*	-	-
Slender flat sedge	*Cyperus gracilis*	-	-
Cat grass	*Dactylis glomerata*	-	-
Blue flax-lily	*Dianella revoluta*	-	-
Kidney weed	*Dichondra repens*	-	-
Bushy hedgehog grass	*Echinopogon caespitosus*	-	-
Forest hedgehog grass	*Echinopogon ovatus*	-	-
Climbing saltbush	*Einadia nutans*	-	-
Crowsfoot grass	*Eleusine indica*		
Paddock lovegrass	*Eragrostis leptostachya*	-	-
Blakey's red gum	*Eucalyptus blakelyi*	V	V
New England stringybark	*Eucalyptus caliginosa*	-	-
Yellow box	*Eucalyptus melliodora*	-	-
Star cudweed	*Euchiton sphaericus*		
Meadow fescue	*Festuca pratensis*	-	-
Cudweed	*Gamochaeta americana*	-	-
Native geranium	*Geranium solanderi*	-	-
Slender tick-trefoil	*Grona varians*	-	-
Rough raspwort	*Haloragis heterophylla*	-	-
Stinking pennywort	*Hydrocotyle laxiflora*	-	-
Flatweed	*Hypochaeris radicata*	-	-
Tick indigo	*Indigofera adesmiifolia*	-	-
Blown grass	*Lachnagrostis filiformis*	-	-
Blue bottle-daisy	*Lagenophora stipitata*	-	-
	Lepidium africanum	-	-
Peach heath	*Lissanthe strigosa*	-	-
Many-flowered mat-rush	*Lomandra multiflora*	-	-
Slender mint	*Mentha diemenica*	-	-
Weeping grass	*Microlaena stipoides*	-	-

Common Name	Scientific Name	BC Act Status	EPBC Act Status
Cchilean whitlow wort	*Paronychia brasiliana*	-	-
Slender panic	*Paspalidium gracile*	-	-
Dallis grass	*Paspalum dilatatum*		
	Petrorhagia nanteuilii	-	-
Ribwort plantain	*Plantago lanceolata*	-	-
Blue tussock grass	*Poa sieberiana*	-	-
Sweet-brier	*Rosa rubiginosa*	-	-
Hooked dock	*Rumex brownii*	-	-
	Rytidosperma racemosum	-	-
Common bog-rush	*Schoenus apogon*	-	-
	Scleranthus sp. Fitzs Hill		
Dwarf skullcap	*Scutellaria humilis*		
Pidgeon grass	*Setaria pumila*		
	Solanum adenophorum		
Black nightshade	*Solanum americanum*		
Narrawa burr	*Solanum cinereum*		
Black nightshade	*Solanum nigrum*		
Sowthistle	*Sonchus oleraceus*		
Slender rat's tail grass	*Sporobolus creber*		
Lesser trefoil	*Trifolium dubium*		
Stinging nettle	*Urtica incisa*		
Tufted bluebell	*Wahlenbergia communis*		

APPENDIX C LIKELIHOOD OF OCCURRENCE ASSESSMENT

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
Birds							
Anthochaera phrygia	Regent Honeyeater	E	CE	8	✓	The Regent Honeyeater inhabits eucalypt open forests and woodlands, predominantly box-ironbark types, but also Spotted Gum and Swamp Mahogany on the coast. The species also inhabits River She-oak gallery forest with *Amyema cambagei* (Needle-leaf Mistletoe). Within NSW, breeding sub-populations are fragmented and now occur mainly around the Capertee Valley in central-eastern NSW and the Bundarra-Barraba region in northern inland NSW.	**Potential** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland - Records within the locality - Study Area is not within a mapped important area for Regent Honeyeater.
Botaurus poiciloptilus	Australasian Bittern	E	E	-	✓	In New South Wales, it occurs along the coast and is also frequently recorded in the Murray Darling Basin, notably in floodplain wetlands of the Murray, Murrumbidgee, Lachlan, Macquarie and Gwydir Rivers. The species occurs mainly in freshwater wetlands and, rarely, in estuaries or tidal wetlands. It favours wetlands with tall dense vegetation, where it forages in still, shallow water up to 0.3 m deep, often at the edges of pools or waterways, or from platforms or mats of vegetation over deep water. It favours permanent and seasonal freshwater habitats, particularly those dominated by sedges, rushes and reeds (e.g., *Phragmites, Cyperus, Eleocharis, Juncus, Typha, Baumea, Bolboschoenus*) or cutting grass (*Gahnia*) growing over a muddy or peaty substrate.	**Unlikely** – Lack of suitable habitat in the Study Area. – No records within the Study Area/locality.
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-	90	-	Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris. It has also been recorded in shrublands, heathlands and very occasionally in moist	**Likely** - Study Area is within the distribution for the species

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
						forest or rainforest. Also found in farmland, usually at the edges of forest or woodland.	- Potential habitat in the form of open eucalypt woodland – Many records within the locality
Burhinus grallarius	Bush Stone-curlew	E	-	1	-	Inhabits open forests and woodlands with a sparse grassy groundlayer and fallen timber. Largely nocturnal, being especially active on moonlit nights.	**Potential** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland
Calidris ferruginea	Curlew Sandpiper	E	CE	-	✓	Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in salt works and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. Occasionally they are recorded around floodwaters.	**Unlikely** – No records within the Study Area/locality – Study Area sits outside of the distribution for the species
Calyptorhynchus lathami	Glossy Black-Cockatoo	V	-	1	-	Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black Sheoak (*Allocasuarina littoralis*) and Forest Sheoak (*A. torulosa*) are important foods. Feeds almost exclusively on the seeds of several species of she-oak (*Casuarina* and *Allocasuarina* species), shredding the cones with the massive bill. Dependent on large hollow-bearing eucalypts for nest sites.	**Unlikely** - Study Area is within the distribution for the species – Lacks preferred foraging habitat – Study Area provides hollow bearing eucalypts as suitable nesting habitat
Chthonicola sagittata	Speckled Warbler	V	-	82	-	The Speckled Warbler lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies.	**Likely**

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
						Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy. Large, relatively undisturbed remnants are required for the species to persist in an area.	- Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland – Many records within the locality
Circus assimilis	Spotted Harrier	V	-	2	-	Occurs in grassy open woodland including Acacia and mallee remnants, inland riparian woodland, grassland and shrub steppe. It is found most commonly in native grassland, but also occurs in agricultural land, foraging over open habitats including edges of inland wetlands.	**Potential** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland – Recorded within the locality
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V	-	122	-	Found in eucalypt woodlands (including Box-Gum Woodland) and dry open forest of the inland slopes and plains inland of the Great Dividing Range; mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species; also found in mallee and River Red Gum (*Eucalyptus camaldulensis*) Forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses; usually not found in woodlands with a dense shrub layer; fallen timber is an important habitat component for foraging; also recorded, though less commonly, in similar woodland habitats on the coastal ranges and plains.	**Likely** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland – Many records within the locality
Daphoenositta chrysoptera	Varied Sittella	V	-	3	-	Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland.	**Likely** - Study Area is within the distribution for the species

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
						Feeds on arthropods gleaned from crevices in rough or decorticating bark, dead branches, standing dead trees and small branches and twigs in the tree canopy.	- Potential habitat in the form of open eucalypt woodland with dead branches present - Recorded within the locality
Ephippiorhynchus asiaticus	Black-necked Stork	E	-	2	-	Floodplain wetlands (swamps, billabongs, watercourses and dams) of the major coastal rivers are the key habitat in NSW for the Black-necked Stork. Secondary habitat includes minor floodplains, coastal sandplain wetlands and estuaries.	**Unlikely** - Study Area is within the distribution for the species – Lacks preferred habitat
Erythrotriorchis radiatus	Red Goshawk	CE	V	-	✓	Red Goshawks inhabit open woodland and forest, preferring a mosaic of vegetation types, a large population of birds as a source of food, and permanent water, and are often found in riparian habitats along or near watercourses or wetlands. In NSW, preferred habitats include mixed subtropical rainforest, Melaleuca swamp forest and riparian Eucalyptus forest of coastal rivers.	**Unlikely** – Outside of NSW distribution – Not recorded within the Study Area or locality
Falco hypoleucos	Grey falcon	E	V	-	✓	The species occurs in arid and semi-arid Australia, including the Murray-Darling Basin, Eyre Basin, central Australia and Western Australia. The species frequents timbered lowland plains, particularly acacia shrub lands that are crossed by tree-lined watercourses. The species has been observed hunting in treeless areas and frequents tussock grassland and open woodland, especially in winter. Eggs are laid in the old nests of other birds, particularly those of other raptors or corvids. The nests chosen are usually in the tallest trees along watercourses, particularly River Red Gum (*Eucalyptus camaldulensis*) and Coolibah (*E. coolabah*).	**Unlikely** – Outside of NSW distribution – Not recorded within the Study Area or locality
Falco subniger	Black Falcon	V	-	3	-	The Black Falcon is widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions. In New South Wales there is assumed to be a single	**Potential**

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
						population that is continuous with a broader continental population, given that falcons are highly mobile, commonly travelling hundreds of kilometres (Marchant & Higgins 1993). The Black Falcon occurs as solitary individuals, in pairs, or in family groups of parents and offspring.	- Study Area is within the distribution for the species - Potential habitat in the form of grassy woodland – Recorded within the locality
Glossopsitta pusilla	Little Lorikeet	V	-	1	-	Forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. Isolated flowering trees in open country, e.g. paddocks, roadside remnants and urban trees also help sustain viable populations of the species. Feeds mostly on nectar and pollen, occasionally on native fruits such as mistletoe, and only rarely in orchards	**Potential** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland – Recorded within the locality
Grantiella picta	Painted Honeyeater	V	V	2	✓	The species inhabits mistletoes in eucalypt forests/woodlands, riparian woodlands of black box and river red gum, box-ironbark-yellow gum woodlands, acacia-dominated woodlands, paperbarks, casuarinas, callitris, and trees on farmland or gardens. The species prefers woodlands which contain a higher number of mature trees, as these host more mistletoes. It is more common in wider blocks of remnant woodland than in narrower, although it breeds in quite narrow roadside strips if ample mistletoe fruit is available. The species appears to prefer mistletoe as a nest substrate and selects nest sites in habitats where mistletoe prevalence and parasitism rates are high.	**Potential** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland with mistletoe present - Recorded within the locality
Haliaeetus leucogaster	White-bellied Sea-Eagle	V	-	2	-	Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea. Breeding habitat consists of mature tall open forest, open forest, tall woodland, and swamp sclerophyll forest close to foraging habitat. Nest trees	**Unlikely** - Study Area is within the distribution for the species – Lacks preferred habitat

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
						are typically large emergent eucalypts and often have emergent dead branches or large dead trees nearby which are used as 'guard roosts'. Nests are large structures built from sticks and lined with leaves or grass.	
Hieraaetus morphnoides	Little Eagle	V	-	22	-	Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter	**Likely** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland - Recorded within the locality
Hirundapus caudacutus	White-throated Needletail	-	V	1	✓	In Australia, the White-throated Needletail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. Although they occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland. The species breeds in wooded lowlands and sparsely vegetated hills, as well as mountains covered with coniferous forests.	**Unlikely** - Study Area is within the distribution for the species – Lacks preferred habitat
Lathamus discolor	Swift Parrot	E	CE	2	✓	Breeds in Tasmania during spring and summer, migrating in the autumn and winter months to south-eastern Australia from Victoria and the eastern parts of South Australia to south-east Queensland. In NSW mostly occurs on the coast and south west slopes. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany *Eucalyptus robusta*,	**Potential** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
						Spotted Gum *Corymbia maculata*, Red Bloodwood *C. gummifera*, Forest Red Gum *E. tereticornis*, Mugga Ironbark *E. sideroxylon*, and White Box *E. albens*.	- Recorded within the locality
Lophoictinia isura	Square-tailed Kite	V	-	7	-	Found in a variety of timbered habitats including dry woodlands and open forests. Shows a particular preference for timbered watercourses. Is a specialist hunter of passerines, especially honeyeaters, and most particularly nestlings, and insects in the tree canopy, picking most prey items from the outer foliage.	**Potential** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland - Recorded within the locality
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	V	-	12	-	Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses. Often perches on low dead stumps and fallen timber or on low-hanging branches, using a perch-and-pounce method of hunting insect prey.	**Likely** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland, including dead stumps, saplings and grass cover – Recorded within the locality
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	V	-	1	-	Occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts, especially Mugga Ironbark (*Eucalyptus sideroxylon*), White Box (*E. albens*), Inland Grey Box (E. *microcarpa*), Yellow Box (*E. melliodora*), Blakely's Red Gum (*E. blakelyi*) and Forest Red Gum (*E. tereticornis*). Also inhabits open forests of smooth-barked gums, stringybarks, ironbarks, river sheoaks (nesting habitat) and tea-trees.	**Potential** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
							– Recorded within the locality
Neophema pulchella	Turquoise Parrot	V	-	1	-	Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland. Usually seen in pairs or small, possibly family, groups and have also been reported in flocks of up to thirty individuals. Prefers to feed in the shade of a tree and spends most of the day on the ground searching for the seeds or grasses and herbaceous plants, or browsing on vegetable matter.	**Potential** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland – Recorded within the locality
Ninox connivens	Barking Owl	V	-	1	-	Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. Sometimes able to successfully breed along timbered watercourses in heavily cleared habitats (e.g. western NSW) due to the higher density of prey found on these fertile riparian soils. Requires very large permanent territories in most habitats due to sparse prey densities. Monogamous pairs hunt over as much as 6000 hectares, with 2000 hectares being more typical in NSW habitats.	**Potential** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland – Recorded within the locality
Petroica boodang	Scarlet Robin	V	-	46	-	The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. This species lives in both mature and regrowth vegetation. It occasionally occurs in mallee or wet forest communities, or in wetlands and tea-tree swamps. Scarlet Robin habitat usually contains abundant logs and fallen timber: these are important components of its habitat. The Scarlet Robin breeds on ridges, hills and foothills of the western slopes, the Great Dividing Range and eastern coastal regions; this species is occasionally found up to 1000 metres in altitude.	**Likely** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland – Many records within the locality

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
Rostratula australis	Australian Painted Snipe	E	E	-	✓	The Australian Painted Snipe generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans. They also use inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains. Typical sites include those with rank emergent tussocks of grass, sedges, rushes or reeds, or samphire; often with scattered clumps of lignum Muehlenbeckia or canegrass or sometimes tea-tree (*Melaleuca*). The Australian Painted Snipe sometimes utilises areas that are lined with trees, or that have some scattered fallen or washed-up timber. Australian Painted Snipe breeding habitat requirements may be quite specific: shallow wetlands with areas of bare wet mud and both upper and canopy cover nearby.	**Unlikely** - Study Area is within the distribution for the species – Lacks preferred habitat
Stagonopleura guttata	Diamond Firetail	V	-	36	-	Found in grassy eucalypt woodlands, including Box-Gum Woodlands and Snow Gum *Eucalyptus pauciflora* Woodlands. Also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities. Often found in riparian areas (rivers and creeks), and sometimes in lightly wooded farmland. Feeds exclusively on the ground, on ripe and partly-ripe grass and herb seeds and green leaves, and on insects (especially in the breeding season).	**Likely** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland – Many records within the locality
Tyto novaehollandiae	Masked Owl	V	-	21	-	Lives in dry eucalypt forests and woodlands from sea level to 1100 m. A forest owl, but often hunts along the edges of forests, including roadsides. The typical diet consists of tree-dwelling and ground mammals, especially rats. Roosts and breeds in moist eucalypt forested gullies, using large tree hollows or sometimes caves for nesting.	**Likely** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland, with large hollows present

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
							– Many records within the locality

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
Frogs							
Litoria castanea	Yellow-spotted Tree Frog	CE	E	1	✓	Require large permanent ponds or slow flowing 'chain-of-ponds' streams with abundant emergent vegetation such as bulrushes and aquatic vegetation. Adults are active during spring and summer and bask on sunny days. Move and forage at night on grassy banks or float on the water's surface.	**Unlikely** - Study Area is within the distribution for the species – Lacks preferred habitat
Litoria piperata	Peppered Tree Frog	CE	V	1	✓	Found in streamside vegetation and under rocks and fallen timber along rocky streams flowing eastward from the Tablelands.	**Unlikely** - Study Area is within the distribution for the species – Lacks preferred habitat
Litoria subglandulosa	Glandular Frog	V	-	2	-	Glandular Frogs may be found along streams in rainforest, moist and dry eucalypt forest or in subalpine swamps.	**Unlikely** - Study Area is within the distribution for the species – Lacks preferred habitat
Reptiles							
Tympanocryptis lineata	Lined Earless Dragon	CE	-	1	-		**Unlikely** – Outside of NSW distribution – Lacks preferred habitat
Uvidicolus sphyrurus	Border Thick-tailed Gecko	V	V	-	✓	As implied by another of its common names (Granite Thick-tailed Gecko), this species often occurs on steep rocky or scree slopes, especially granite. Recent records from basalt and metasediment slopes and flats indicate its habitat selection is broader than formerly thought and may have extended into areas that were cleared for agriculture. Favours forest and woodland areas with boulders, rock slabs, fallen timber and deep leaf litter. Occupied sites often have a dense tree canopy that helps create a sparse understorey.	**Unlikely** – Outside of NSW distribution – Lacks preferred habitat, particularly deep leaf litter and rock slabs

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
Mammals							
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	-	✓	Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (*Petrochelidon ariel*), frequenting low to mid-elevation dry open forest and woodland close to these features. Females have been recorded raising young in maternity roosts (c. 20-40 females) from November through to January in roof domes in sandstone caves and overhangs. They remain loyal to the same cave over many years. Found in well-timbered areas containing gullies.	**Unlikely** - Study Area is within the distribution for the species – Lacks preferred habitat
Chalinolobus nigrogriseus	Hoary Wattled Bat	V	-	1	-	In NSW the Hoary Wattled Bat occurs in dry open eucalypt forests, favouring forests dominated by Spotted Gum, boxes and ironbarks, and heathy coastal forests where Red Bloodwood and Scribbly Gum are common. Because it flies fast below the canopy level, forests with naturally sparse understorey layers may provide the best habitat. Roosts in hollows and rock crevices.	**Potential** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland with hollow bearing trees – Recorded within the locality
Dasyurus maculatus	Spotted-tailed Quoll	V	E	43	✓	Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Quolls use hollow-bearing trees, fallen logs, other animal burrows, small caves and rock outcrops as den sites. Use communal 'latrine sites', often on flat rocks among boulder fields, rocky cliff-faces or along rocky stream beds or banks.	**Potential** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland – Recorded within the locality
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V	-	2	-	Prefers moist habitats, with trees taller than 20 m.	**Unlikely**

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
						Generally roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings. Hunts beetles, moths, weevils and other flying insects above or just below the tree canopy.	- Study Area is within the distribution for the species – Lacks preferred habitat (trees taller than 20 m) – Hollow bearing trees present
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	-	6	-	Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. Form discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young. Maternity caves have very specific temperature and humidity regimes. At other times of the year, populations disperse within about 300 km range of maternity caves. Hunt in forested areas, catching moths and other flying insects above the tree tops.	**Unlikely** - Study Area is within the distribution for the species – Lacks preferred habitat
Myotis macropus	Southern Myotis	V	-	1	-	Generally roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage. Forage over streams and pools catching insects and small fish by raking their feet across the water surface.	**Potential** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland – Recorded within the locality

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
Petauroides volans	Greater Glider	-	V	1	✓	The greater glider is restricted to eastern Australia, occurring from the Windsor Tableland in north Queensland through to central Victoria (Wombat State Forest), with an elevational range from sea level to 1200 m above sea level. The greater glider is an arboreal nocturnal marsupial, largely restricted to eucalypt forests and woodlands. It is typically found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows.	**Potential** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland – Recorded within the locality
Petaurus norfolcensis	Squirrel Glider	V	-	1	-	Inhabits mature or old growth Box, Box-Ironbark woodlands and River Red Gum forest west of the Great Dividing Range and Blackbutt-Bloodwood forest with heath understorey in coastal areas. Prefers mixed species stands with a shrub or Acacia midstorey. Live in family groups of a single adult male one or more adult females and offspring. Require abundant tree hollows for refuge and nest sites.	**Potential** - Study Area is within the distribution for the species - Potential habitat in the form of open eucalypt woodland, although lacking a shrub storey and mature tree species – Recorded within the locality
Petrogale penicillata	Brush-tailed Rock-wallaby	E	V	61	✓	Occupy rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges, often facing north. Shelter or bask during the day in rock crevices, caves and overhangs and are most active at night when foraging. Browse on vegetation in and adjacent to rocky areas eating grasses and forbs as well as the foliage and fruits of shrubs and trees.	**Unlikely** - Study Area is within the distribution for the species – Lacks preferred habitat
Phascolarctos cinereus	Koala	E	E	703	✓	Koalas naturally inhabit a range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by Eucalyptus species.	**Likely** - Study Area is within the distribution for the species

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
						Koala habitat can be broadly defined as any forest or woodland containing species that are known Koala food trees, or shrubland with emergent food trees. The distribution of this habitat is largely influenced by land elevation, annual temperature and rainfall patterns, soil types and the resultant soil moisture availability and fertility. Preferred food and shelter trees are naturally abundant on fertile clay soils.	- Potential habitat in the form of open eucalypt woodland, with preferred food trees present – Many records within the locality
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	421	✓	Grey-headed Flying-foxes are generally found within 200 km of the eastern coast of Australia, from Rockhampton in Queensland to Adelaide in South Australia. Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy.	**Potential** - Study Area is within the distribution for the species - Potential foraging habitat in the form of open eucalypt woodland – Many records within the locality
Scoteanax rueppellii	Greater Broad-nosed Bat	V	-	1	-	Utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Although this species usually roosts in tree hollows, it has also been found in buildings. Forages after sunset, flying slowly and directly along creek and river corridors at an altitude of 3 - 6 m. Open woodland habitat and dry open forest suits the direct flight of this species as it searches for beetles and other large, slow-flying insects; this species has been known to eat other bat species.	**Potential** - Study Area is within the distribution for the species - Potential roosting habitat in the form of eucalypt woodland with hollow bearing trees – Recorded within the locality
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	-	1	✓	Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory. Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows.	**Potential** - Study Area is within the distribution for the species

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
						When foraging for insects, flies high and fast over the forest canopy, but lower in more open country. Breeding has been recorded from December to mid-March, when a single young is born. Seasonal movements are unknown; there is speculation about a migration to southern Australia in late summer and autumn.	- Potential roosting habitat in the form of eucalypt woodland with hollow bearing trees – Recorded within the locality
Flora							
Arthraxon hispidus	Hairy-joint Grass	-	V	-	✓	Moisture and shade-loving grass, found in or on the edges of rainforest and in wet eucalypt forest, often near creeks or swamps.	**Unlikely** - Study Area is within the distribution for the species – Lacks wet eucalypt forest habitat near water sources – No records within the Study Area or locality
Bertya ingramii	Narrow-leaved Bertya	E	E	1	-	Grows among rocks or in thin soils close to cliff-edges in dry woodland with she-oaks, wattles and tea-trees.	**Unlikely** - Study Area is within the distribution for the species – Lacks dry woodland comprising of she oaks and tea tree
Callistemon pungens	-	-	V	-	✓	Callistemon pungens occurs in south-east Queensland and the northern tablelands of northeast NSW. In NSW, it occurs from near Inverell to the eastern escarpment in New England, along rocky watercourses usually with sandy granite (or occasionally basalt) creek beds, and generally among naturalised species. In southern Queensland, it occurs in the Stanthorpe region. This species occurs within Border Rivers and Maranoa–Balonne (Queensland), and Border Rivers–Gwydir, Namoi and Northern Rivers (NSW) Natural Resource Management Regions.	**Unlikely** - Study Area is within the distribution for the species – Lacks rocky watercourses habitat – No records within the Study Area or locality

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
Cynanchum elegans	White-flowered Wax Plant	-	E	-	✓	The White-flowered Wax Plant usually occurs on the edge of dry rainforest vegetation. Other associated vegetation types include littoral rainforest; Coastal Tea-tree *Leptospermum laevigatum* – Coastal Banksia *Banksia integrifolia subsp. integrifolia* coastal scrub; Forest Red Gum *Eucalyptus tereticornis* aligned open forest and woodland; Spotted Gum *Corymbia maculata* aligned open forest and woodland; and Bracelet Honeymyrtle *Melaleuca armillaris* scrub to open scrub.	**Unlikely** – Outside of NSW distribution – Lacks preferred habitat – No records within the Study Area or locality
Dichanthium setosum	Bluegrass	V	V	8	✓	Associated with heavy basaltic black soils and red-brown loams with clay subsoil. Often found in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture. (Often collected from disturbed open grassy woodlands on the northern tablelands, where the habitat has been variously grazed, nutrient-enriched and water-enriched). It is open to question whether the species tolerates or is promoted by a certain amount of disturbance, or whether this is indicative of the threatening processes behind its depleted habitat. Associated species include *Eucalyptus albens, Eucalyptus melanophloia, Eucalyptus melliodora, Eucalyptus viminalis, Myoporum debile, Aristida ramosa, Themeda triandra, Poa sieberiana, Bothriochloa ambigua, Medicago minima, Leptorhynchos squamatus, Lomandra aff. longifolia, Ajuga australis, Calotis hispidula and Austrodanthonia, Dichopogon, Brachyscome, Vittadinia, Wahlenbergia and Psoralea* species. Locally common or found as scattered clumps in broader populations. The extensive distribution and wide environmental tolerances make predictions about suitable habitat difficult.	**Potential** - Study Area is within the distribution for the species - Associated species present – *E. albens, E. melliodora* - Recorded within the locality
Diuris eborensis	-	E	E	-	✓	Found mainly in damp grassland and woodland sites or in areas of sedge and swampy sites. Main locations are higher altitude sites in the eastern New England Plateau, with known locations in the Ebor, Yarrowitch and Backwater areas.	**Unlikely** – Outside of NSW distribution – Lacks preferred habitat

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
						Typically in brown clay loam soil over an igneous substrate (basalt most commonly in the sites visited, but not always), but the soil may have large amounts of organic matter.	– No records within the Study Area or locality
Diuris pedunculata	Small Snake Orchid	E	E	-	✓	The Small Snake Orchid grows on grassy slopes or flats. Endemic to NSW. It was originally found scattered from Tenterfield, south to the Hawkesbury River, but is now mainly found on the New England Tablelands, around Armidale, Uralla, Guyra and Ebor. Often on peaty soils in moist areas. Also on shale and trap soils, on fine granite, and among boulders.	**Potential** - Study Area is within the distribution for the species – No records within the Study Area or locality
Eucalyptus mckieana	McKie's Stringybark	V	V	-	✓	Eucalyptus mckieana is found in grassy open forest or woodland on poor sandy loams, most commonly on gently sloping or flat sites. Associated species at Northern Tablelands sites include *Angophora floribunda, Eucalyptus amplifolia, Eucalyptus andrewsii, Eucalyptus bridgesiana, Eucalyptus youmanii, Eucalyptus nicholii, Eucalyptus blakelyi and Eucalyptus conica*, and at North Western Slopes sites *Eucalyptus andrewsii, Eucalyptus stannicola, Eucalyptus prava* and *Angophora floribunda.*	**Unlikely** – Outside of NSW distribution – Lacks preferred soil type – No records within the Study Area or locality
Eucalyptus nicholii	Narrow-leaved Black Peppermint	V	V	18	✓	Typically grows in dry grassy woodland, on shallow soils of slopes and ridges. Found primarily on infertile soils derived from granite or metasedimentary rock. Seedling recruitment is common, even in disturbed soils, if protected from grazing and fire.	**Likely** - Study Area is within the distribution for the species - Potential habitat in the form of grassy eucalypt woodland – Recorded within the locality

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
Eucalyptus rubida subsp. barbigerorum	Blackbutt Candlebark	V	V	2	✓	Known from scattered populations on the New England Tablelands from Guyra to the Tenterfield area. Most populations occur on private property however the species is recorded in Barayamal and Guy Fawkes National Parks. Grassy woodland on medium or high fertility soils. Often on cold flats.	**Unlikely** – Outside of NSW distribution – Few records within locality
Euphrasia arguta	-	CE	CE	-	✓	Historic records of the species noted the following habitats: 'in the open forest country around Bathurst in sub humid places', 'on the grassy country near Bathurst', and 'in meadows near rivers'. Plants from the Nundle area have been reported from eucalypt forest with a mixed grass and shrub understorey; here, plants were most dense in an open disturbed area and along the roadside, indicating the species had regenerated following disturbance.	**Potential** – Study Area is within the distribution for the species – No records within the Study Area or locality
Haloragis exalata subsp. velutina	Tall Velvet Sea-berry	V	V	1	✓	This subspecies of Tall Sea-berry occurs on the north coast of NSW and southeastern Queensland. It is plentiful in inaccessible areas of the upper Macleay River. Grows in damp places near watercourses. This subspecies also occurs in woodland on the steep rocky slopes of gorges.	**Unlikely** – Lacks preferred soil type – Minimal records within locality
Lepidium hyssopifolium	Aromatic Peppercress	E	E	1	✓	In NSW the species was known to have occurred in both woodland with a grassy understorey and in grassland. The species may be a disturbance opportunist. The cryptic and non-descript nature (appearing like several weed species) of the species makes it hard to detect.	**Potential** – Study Area is within the distribution for the species – Suitable habitat present (grassland, grassy woodland) – Recorded within the locality
Picris evae	Hawkweed	V	V	-	✓	Where collected, the species abundance has been rare, locally occasional and locally frequent.	**Unlikely** – Outside of NSW distribution

Scientific Name	Common Name	Status (BC Act)	Status (EPBC Act)	BioNet records in Locality	PMST	Habitat Summary: *Summarised from DPIE Threatened Species Profiles* *	Likelihood of Occurrence
						All recent collections appear to come from modified habitats such as weedy roadside vegetation and paddocks. Its main habitat is open Eucalypt forest including a canopy of *Eucalyptus melliodora, E. crebra, E. populnea, E. albens, Angophora subvelutina, Allocasuarina torulosa*, and/or *Casuarina cunninghamiana* with *a Dichanthium* grassy understory. Soils are black, dark grey or red-brown (specified as shallow, stony soil over basalt for one collection) and reddish clay-loam or medium clay soils.	– No records within the Study Area or locality
Thesium australe	Austral Toadflax	V	V	3	✓	Occurs in grassland on coastal headlands or grassland and grassy woodland away from the coast. Often found in association with Kangaroo Grass (*Themeda australis*)	**Potential** - Study Area is within the distribution for the species - Suitable habitat present (grassland, grassy woodland) – Recorded within the locality
Tylophora woollsii	Cryptic Forest Twiner	E	E	-	✓	This species grows in moist eucalypt forest, moist sites in dry eucalypt forest and rainforest margins. Very rare within its range.	**Unlikely** – Outside of distribution – No records within the Study Area or locality

Argentina	The Netherlands
Australia	New Zealand
Belgium	Norway
Brazil	Panama
Canada	Peru
Chile	Poland
China	Portugal
Colombia	Puerto Rico
France	Romania
Germany	Russia
Ghana	Senegal
Guyana	Singapore
Hong Kong	South Africa
India	South Korea
Indonesia	Spain
Ireland	Sweden
Italy	Switzerland
Japan	Taiwan
Kazakhstan	Tanzania
Kenya	Thailand
Malaysia	UAE
Mexico	UK
Mozambique	US
Myanmar	Vietnam

ERM's Sydney Office
Level 15
309 Kent Street
Sydney NSW 2000

T: +61 2 8584 8888
F: +61 2 9299 7502
www.erm.com

APPENDIX E WSP - PHASE 1 SOCIAL IMPACT ASSESSMENT SCOPING REPORT

Design
for a better
future /

NEOEN Australia Pty Ltd

Eathorpe Battery

Phase 1 Social Impact Assessment Scoping Report

wsp

October 2022

Question today
Imagine tomorrow
Create for the future

Eathorpe Battery
Phase 1 Social Impact Assessment Scoping Report

NEOEN Australia Pty Ltd Australia Pty Ltd

WSP
Level 27, 680 George Street
Sydney NSW 2000
GPO Box 5394
Sydney NSW 2001

Tel: +61 2 9272 5100
Fax: +61 2 9272 5101
wsp.com

Rev	Date	Details
A	15/08/2022	Draft A
B	04/10/2022	Final

	Name	Date	Signature
Prepared by:	Caitlin Treacy	04/10/2022	
Reviewed by:	Roland Short	04/10/2022	
Approved by:	Carla Martinez	04/10/2022	

WSP acknowledges that every project we work on takes place on First Peoples lands.
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

Table of contents

List of tables

List of figures

List of appendices

Abbreviations

ABS	Australian Bureau of Statistics
BESS	Battery Energy Storage System
DPE	Department of Planning and Environment
EP&A Act	Environmental Planning & Assessment Act 1979
ha	Hectares
IRSAD	Index of Relative Socio-economic Advantage and Disadvantage
LALC	Local Aboriginal Land Council
LGA	Local Government Area
Local social locality	Armidale SSC
m	Meter
MW	Megawatts
MWh	Megawatt hours
NSW	New South Wales
Regional social locality	Armidale LGA
REZ	Renewable Energy Zone
SEIFA	Socio-Economic Indexes for Areas
SIA	Social Impact Assessment
SIA scoping tool	DPE Social Impact Assessment Scoping Tool
Social locality	The term 'social locality' refers to the geographical area in which the most social impacts are likely to materialise.
SSC	State Suburb
SSD	State Significant Development
The Project	The Eathorpe Battery

1 Introduction

1.1 Project overview

Neoen Australia Pty Ltd (Neoen) engaged WSP Australia Pty Ltd to undertake a Social Impact Assessment (SIA) scoping report (SIA scoping report) for the Eathorpe Battery development located east of Armidale, NSW (the Project). Neoen is seeking State Significant Development (SSD) consent for the Project under Part 4, Division 4.7 of the Environmental Planning & Assessment Act 1979 (EP&A Act).

The Project is a utility scale battery energy storage system, with a total capacity of up to 100 MW / 200 MWh, and includes ancillary infrastructure, to be located in the southwest portion of the Project Area. Neoen is proposing to build a new transmission line from the Project to the existing TransGrid Armidale Substation, which is located to the north of the Project Area. This SIA scoping report has been prepared to give input into the early design stages of the project to help understand the potential social impacts of the BESS.

The Project will include the following key components:

- Preparation of site, including benching and earthing, with access to the Project from Eathorpe Road (access point to be determined during the EIS phase following the outcomes of further environmental assessments).
- Battery manufacturer is yet to be determined; however, it may consist of modular lithium-ion type batteries, to be housed in either climate-controlled shipping container style buildings or outdoor cabinets.
- Electrical inverters.
- MV and HV transformers.
- HVAC units and ventilation.
- Extension of a busbar at an existing substation.
- Ancillary infrastructure and activities including:
    - control room and electrical switch room
    - associated control systems
    - communications infrastructure
    - car parking
    - benching and earthing
    - an O&M facility and storage sheds/spare parts room
    - underground cabling and above-ground cabling
    - temporary construction compound and site laydown areas
    - fire-fighting equipment including water tank/s
    - security fencing, security lighting, security devices
    - noise walls, landscaping and screening vegetation.

The transport route of the battery components and associated ancillary infrastructure are subject to further assessment in the EIS. Proposed access to the Project Area is along Waterfall Way and Eathorpe Road.

The area where the proposed utility scale battery energy storage system will be located would be leased from the landowner for the length of the development, through a lease of premises, subject to the limits in place at the time of commissioning, or via a long-term lease. If subdivision of Lot 842 DP 755808 (where the battery infrastructure will be located) is required, this subdivision will be requested under the SSD application to excise the development footprint for the Project from the remainder of the land parcel, which will continue to be utilised for agricultural purposes.

1.1.1 Project area

The Project Area extends across an area of approximately 65.6 ha at 112 Eathorpe Road, Armidale, NSW. Under the Armidale Dumaresq LEP, the southern portion of the Project Area is zoned as RU4 Primary Production Small Lots covering two land parcels and a Local Government Authority Road (unbuilt). The northern portion is zoned SP2 Infrastructure covering the remaining six land parcels and Crown Land Paper Roads. The Project Area is defined as the area of land corresponding to property boundaries on which the Project is located. It includes the proposed battery and ancillary infrastructure location allotment, existing Crown Land Paper Road, unnamed Local Government Authority Road easement and the existing TransGrid Armidale Substation lots. Figure 1.1 shows the proposed Project Area in relation to Armidale town and the Armidale Substation. The proposed footprint of the battery, O&M and associated ancillary infrastructure is approximately 3.6 ha.

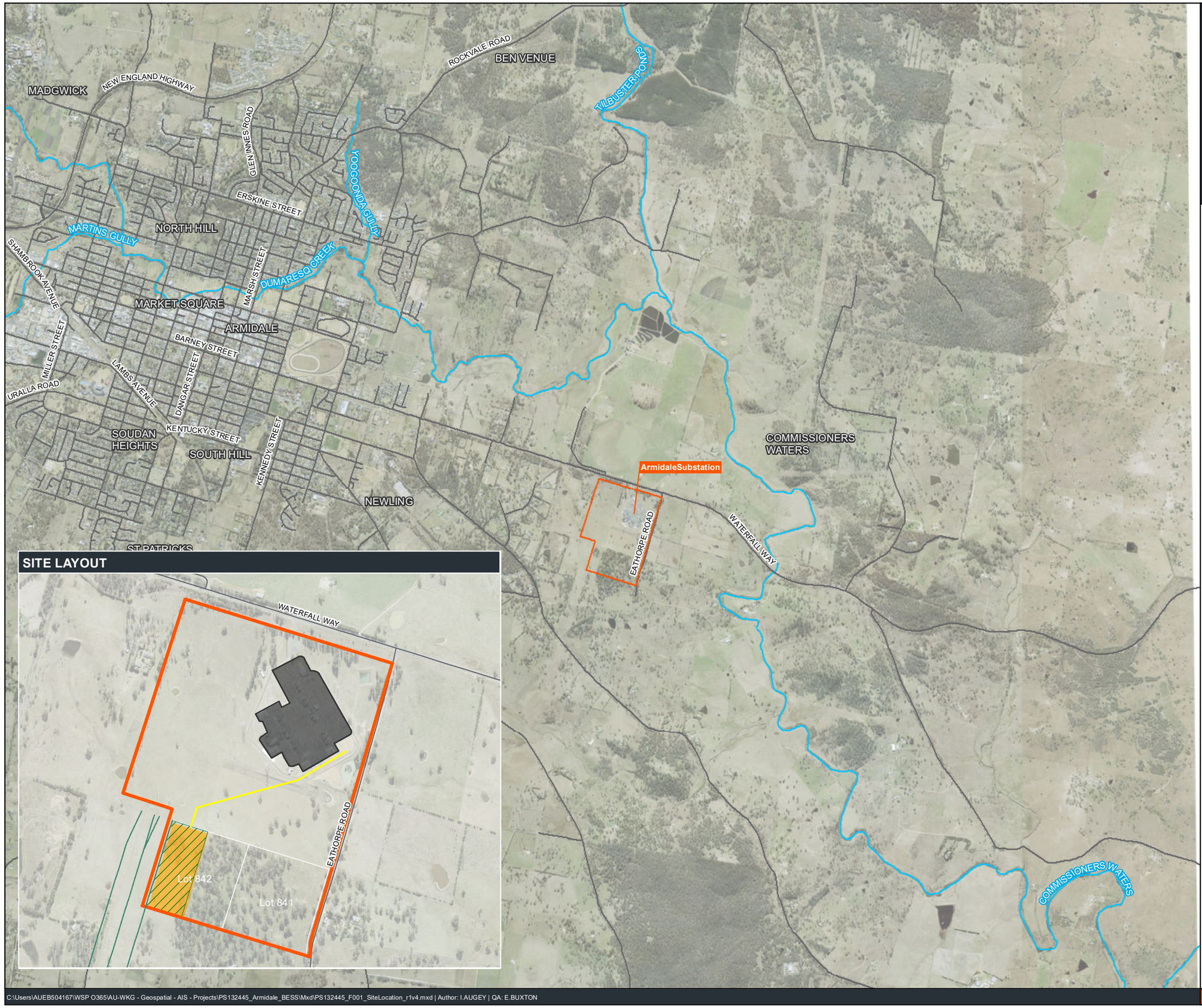
1.2 About this document

The Phase 1 SIA scoping report (this document) is the first phase of undertaking an SIA report for NSW State Significant Projects under the Department of Planning and Environment (DPE) 2021 SIA Guideline. The SIA scoping report focuses the SIA on likely social issues before considering suitable refinement and other early responses. It also ensures the scale of assessment required is proportionate to the magnitude of the expected impacts in the Phase 2 SIA.

The key objective of the SIA scoping report is to provide a high-level understanding of the project's social environment to:

- determine the preliminary local and regional social locality
- identify key communities and potentially affected stakeholders
- identify potential social impacts requiring further investigation in the Phase 2 SIA.

This SIA scoping report aims to identify the potential impacts and benefits associated with the project.



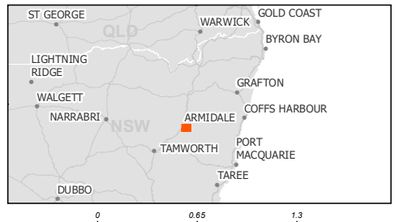
SITE LAYOUT

NEOEN Armidale BESS

Figure 1.1
Project Area

Legend

- Project Area
- Armidale Substation
- Battery
- Earthorpe Battery Scoping Indicative Area
- Transgrid Easement
- Electrical Easement
- Road
- Watercourse



0 0.65 1.3
Kilometers

Coordinate system: GDA2020 MGA Zone 56

Scale ratio correct when printed at A3

1:40,000 Date: 23/08/2022

GDA 2020

Data sources: NSWSS, Metromap, Geoscience Australia

2 Methodology

The methodology of this report was informed by the DPE 2021 SIA Guideline. Per the guideline, the scoping of social impacts considers and reflects the following SIA principles:

- Life-cycle focus: exploring the likely impacts at all project stages, including pre-construction, construction, and operation.
- Proportionate: ensuring the scope and scale of the SIA corresponds to the scope and scale of the likely social impacts.
- Material: focusing on those impacts that matter most for people and/or pose the greatest risk/opportunity to those expected to be affected.
- Integrated: using and referencing information from other assessments.

The key components of this report are:

- A review of stakeholder consultation undertaken to date (Section 3).
- A description of the SIA's local and regional social locality (Section 4).
- An overview of the local and regional existing environment surrounding the project (Section 5).
- The scoped preliminary social impacts (Section 6). A summary of the completed SIA scoping tool is also provided in (Appendix A).
- The proposed approach to undertake a moderate Phase 2 SIA as part of the project EIS (Section 7).

Table 2.1 provides an outline of the methodology followed to prepare this report.

Table 2.1 SIA scoping report methodology

Methodology	Description
Understanding the project context	A review of community feedback and engagement to date was undertaken to contextualise the project and identify existing community concerns and/or opportunities (Section 3). A site visit was also undertaken to gain insight into the social context and environment of the project.
Preliminary scoping of social impacts	The SIA Scoping Tool (DPE, 2021) has been completed to inform the SIA scoping report and determine the required assessment level for each social impact for the Phase 2 SIA (see Appendix A). The social impact scoping exercise was informed by understanding the project context and existing environment and a review of similar SIAs, including projects within the New England REZ and BESS projects. The scoped social impacts are summarised in Section 6.
Determining the social locality and description of the existing environment	The SIA social locality has been determined by considering stakeholders most likely to experience direct and indirect socio-economic impacts, and their geographic location, in line with the SIA Guideline (DPE, 2021). The social locality utilises ABS statistical geography boundaries, including ABS State Suburbs (SSCs) and local government areas (LGAs) that intercept and surround the proposal. The social locality is the area expected to experience the most social change due to the proposal.

2.1 SIA team and lead author

The SIA will be developed by an experienced team of social scientists. Caitlin Treacy is the lead author for Phases 1 and 2 of the SIA. Caitlin holds a Bachelor of Arts (Honours) major in Anthropology from the University of Queensland. Caitlin is a SIA practitioner with experience working on both private and public sector projects in NSW, Queensland and South Australia.

Carla Martinez and Roland Short will also support the development of the SIA in the role of technical reviewers.

Carla Martinez holds a Master of Development Practice major in Planning for Social Development from the University of Queensland. Carla has also completed a SIA course from the University of Strathclyde, and has experience in the resource and energy sector in Chile and Australia and has led SIAs in NSW, Queensland and South Australia.

Roland Short holds a Bachelor of Urban and Regional Planning (Honours) from RMIT and a Diploma in Communication Studies from Bond University. Roland is a social impact consultant with over ten years' experience working across the community development, engagement and impact assessment fields.

Caitlin Treacy, Carla Martinez and Roland Short are members of the Environmental Institute of Australia and New Zealand.

3 Stakeholder consultation

Neoen has undertaken a community information session and series of meetings with near neighbours to inform project refinement and SIA scoping. Broadly, engagement activities to date have focused on identifying potential locations and site layout preferences for the battery, as well as identifying and understanding preliminary project issues and concerns amongst stakeholders. Surrounding landholders and community members provided feedback, summarised in Table 3.1. A member of the SIA team was also present at a Neoen community information session to undertake preliminary SIA consultation to inform the SIA scoping report. As per the Neoen Communications and Engagement Plan (2022), the following consultation activities have been undertaken:

- One-on-one, in-person meetings with two neighbours living on Eathorpe Rd.
- Community drop in session on 30 June 2022 with 10 attendees, including the host landholder.
- Phone discussion with previous landholder on Eathorpe Rd who has now sold their property.
- Phone discussion with current landholder on Eathorpe Rd.
- Project information distributed by mail to 44 neighbours within approximately 1km of the project.
- Phone discussion with two Aboriginal stakeholders working with Neoen on the Thunderbolt Energy Hub project.
- Introductory letter emailed to Armidale Regional Council on 9 June 2022, followed by a project presentation to Council staff members on 26 July 2022.
- Introductory letter emailed to Armidale Business Chambers on 18 August 2022.
- Meeting with the NSW Department of Planning and Environment (NSW DPE).
- Connection Enquiry submitted to TransGrid, as well as ongoing engagement regarding property access.
- Introductory letter emailed to State and Federal MPs on 9 June 2022.
- Meeting with Adam Marshall MP, the Member for the Northern Tablelands State Electorate on 26 July 2022.
- Introduced the project to the New England Community College in May 2022.
- Introductory letter emailed to the New England Rural Fire Service on 16 June 2022, followed by an in person meeting on 26 July 2022.
- Introductory letter emailed to the Aboriginal Local Aboriginal Land Council.

A community feedback survey was also made available on the project website as an additional opportunity for stakeholders to provide feedback on the project. Hard copies of the survey were also provided to community members at the community information session in June 2022 and during one-on-one meetings. A copy of the community feedback survey questionnaire is provided in Appendix B. Table 3.1 summarises and categorises the feedback received by Neoen during the initial project planning phase through community survey responses and community information sessions, in line with the SIA Guideline (DPE, 2021) social impact categories.

Table 3.1 Neoen community consultation summary

Social Impact Category	Consultation feedback
Way of life	Stakeholders expressed interest in enhanced access to renewable energy locally, regionally and nationally. Some stakeholders also stated that the project might help stabilise the grid, reduce energy costs and prevent blackouts.
	General support for renewable energy within the community.
	Interest in the potential for local education opportunities relating to energy and renewables.
	Some noted concerns about the project's life and the site's future use following decommissioning.
Health and Wellbeing	One stakeholder raised potential concerns regarding amenity impacts arising from operational noise and light pollution, similar to impacts associated with the existing Armidale Substation. The stakeholder also expressed that impacts would likely not arise if the project was situated in the western portion of the project area .

Social Impact Category	Consultation feedback
Community	Interest in why Armidale was chosen as the location for the project.
	Interest in what community benefits may arise from the project.
Surroundings	Concerns regarding clearing of native vegetation, loss of biodiversity and reduction of tree covering. There was a general preference for the project to be located away from Eathorpe Road to minimise the degree of required vegetation clearing. One stakeholder noted that the current proposed site (western portion of the Project Area) is on pasture, and impacts on tree coverage are unlikely. However, impacts would be enhanced if the project is moved further eastward.
	Preference for the project to be located away from Eathorpe Road to avoid potential related amenity impacts, including visual obstructions and vegetation clearing. Concerns relating to visual impacts arising from the project were minimal, due in part to the existing energy infrastructure in the local area (such as the Armidale Substation).
	Stakeholders raised minimal amenity impacts associated with construction activities.
Livelihoods	Support for the project potentially encouraging further investment in the region.
	Interest in potential local employment benefits and opportunities arising during project construction.
Decision making systems	Stakeholders noted they were generally satisfied with the engagement to date and the perceived effort of the proponent to proactively communicate with the community.

4 Social locality

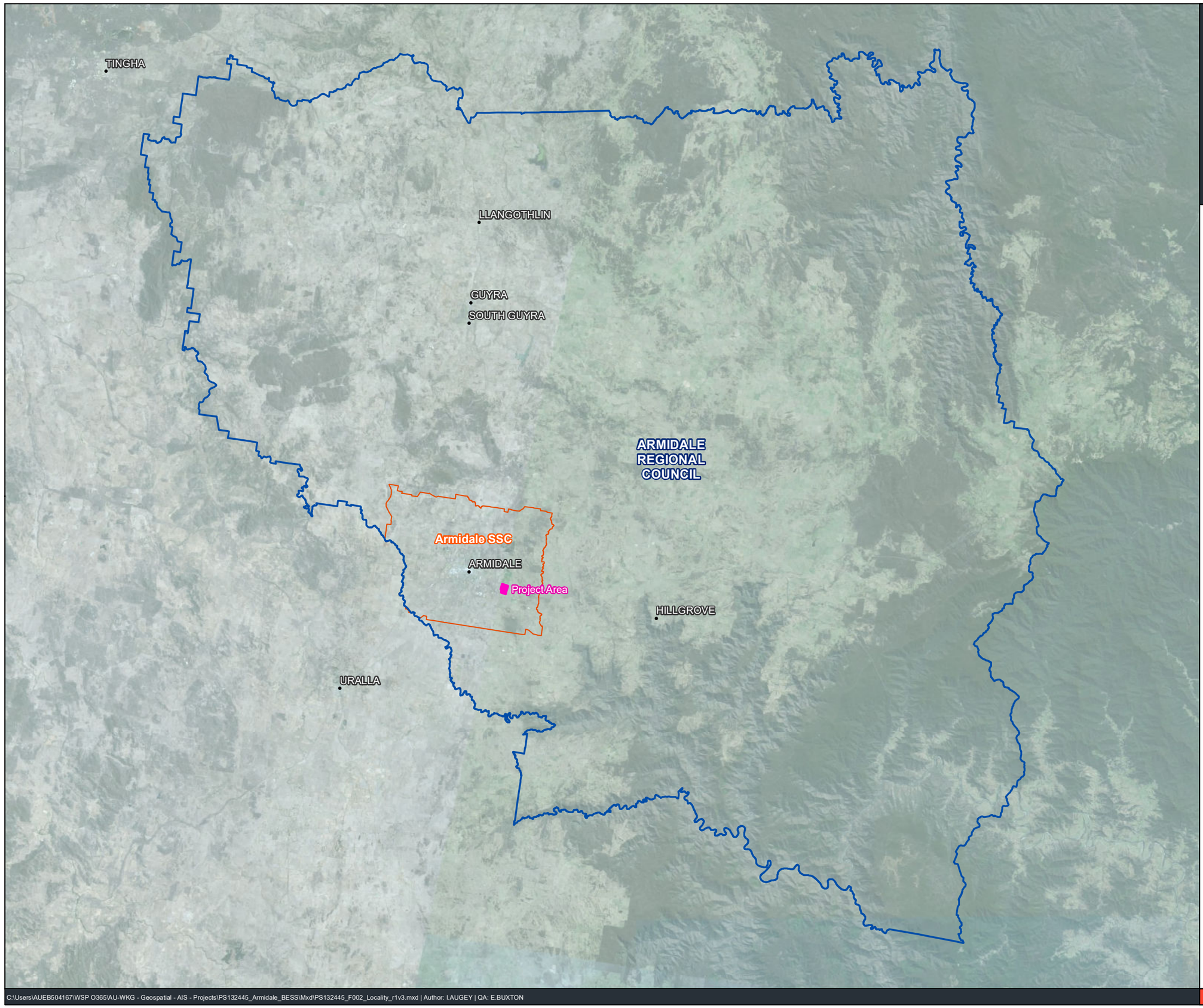
The project is located approximately six km from the Armidale town centre, within the Armidale LGA. The social locality comprises two areas: the local social locality, which is made up of the Armidale SSC, and the regional social locality, which is made up of the Armidale LGA. A map of the SIA social locality can be found in Figure 4.1. The social locality will be further refined and updated accordingly to project changes and further investigation of impacts in Phase 2 SIA.

4.1 Local

The SIA local social locality is comprised of the Armidale SSC. This SSC has been selected to consider the potential impacts to landholders, residents and businesses directly within or surrounding the Project Area. This local social locality also encompasses the town of Armidale, which may experience primary and secondary socio-economic impacts associated with the project. The Armidale SSC represents the relatively dispersed and small residential population surrounding the project site limiting the ability for sufficient data sources.

4.2 Regional

The regional study area comprises the Armidale LGA, which has been determined most likely to experience regional, secondary effects of the project. The Armidale LGA encompasses the project area, the Armidale urban area, and other regional hubs that may service the proposal, such as the town of Guyra.

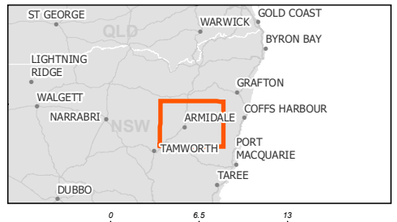


NEOEN Armidale BESS

Figure 4.1
SIA Social Locality

Legend

- Project Area
- Local Social Locality
- Local Regional Locality



Coordinate system: GDA2020 MGA Zone 56

Scale ratio correct when printed at A3

1:450,000 Date: 23/08/2022

Data sources: NSWSS, Geoscience Australia

5 Existing environment

5.1 Armidale LGA

The project is located within the Armidale LGA (the regional social locality) and within the New England Renewable Energy Zone (REZ). Armidale is a relatively large regional LGA, covering 8,621 km^2 in the New England Region, with a total resident population of 29,449.

The region is predominantly rural, with the regional landscape and natural environment supporting a number of key industries, including cattle and sheep grazing, fruit growing, viticulture and tourism (Profile ID, 2022). Armidale LGA has a relatively high proportion of unemployed residents compared to NSW more broadly. According to the Armidale Regional Council, growing employment is a key priority within the region, with an aspirational goal to increase jobs in the region by 4000 by 2040 (Armidale Regional Council, 2022).

Based on the Armidale Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) Score, the region is considered relatively socio-economically advantaged. It sits within the 4th quintile (where the 1st quintile represents the highest level of socio-economic disadvantage, and the 5th quintile represents the highest socio-economic advantage) (ABS, 2018).

A significant area of land within the LGA is covered by national parks, state forests and reserves, which include the New England, Oxley Wild Rivers, Cunnawarra and Werrikimbe National Parks. Transport and travel routes connecting the region to the rest of NSW include the New England Highway, Waterfall Way, and the north western railway line. Armidale town also features a regional airport.

Table 5.1 provides a demographic overview of the Armidale LGA and includes the local social locality (Armidale SSC) and NSW for comparison.

Table 5.1 Social locality demographic overview

Indicator	Armidale LGA	Armidale SSC	NSW
Population	29,124	23,967	8,072,163
Median age	37	36	39
Families	6,896	5,594	2,135,964
Private dwellings	12,888	10,409	3,357,785
Average people per household	2.3	2.3	2.6
Median weekly household income	$1,404	$1,432	$1,829
Aboriginal and/or Torres Strait Islander population	7.6%	7.9%	3.4%
Unemployed persons	7.7%	8.3%	6.3%
SEIFA IRSAD score quintile	4	3	

Aboriginal and Torres Strait Islander residents within the Armidale LGA represent 7.6% of the total population, which is more than the proportion of Indigenous residents living in NSW. Aboriginal people in the region come from several local and regional cultural groups, including the Anaiwan, Kamilaroi, Dainggatti, Ngarabal, Banbai, Gumbainggier and Bigambul nations (ACCKP, 2022). The Armidale region is acknowledged as the traditional land of the Anaiwan and Kamilaroi People (Culture Map, 2021).

Towns in the region include Armidale, Guyra and Tingha, and smaller villages of Ben Lomond, Black Mountain, Ebor, Hillgrove, and Wollombi. The largest and most populated towns in Armidale LGA are Armidale (described below in Section 5.2) and Guyra. Guyra is located in the New England High District, approximately 32 km North of Armidale (or a 30-minute drive) and has a total resident population of 2,003. The Guyra district is a popular tourist destination due to its natural surroundings and environment. It is the highest town in New England Country, situated on the uppermost plateau of the Great Dividing Range (Armidale Regional Council, 2022). Guyra has a growing agricultural industry and is known as an ideal location for horticultural enterprises.

A significant portion of the New England REZ falls within the Armidale LGA and is centred around the town of Armidale, which includes the Neoen Eathorpe Battery (Figure 5.1). The New England REZ is one of five zones established in NSW to consolidate renewable projects into locations where generated power can be efficiently transmitted and stored (EnergyCo, 2022).

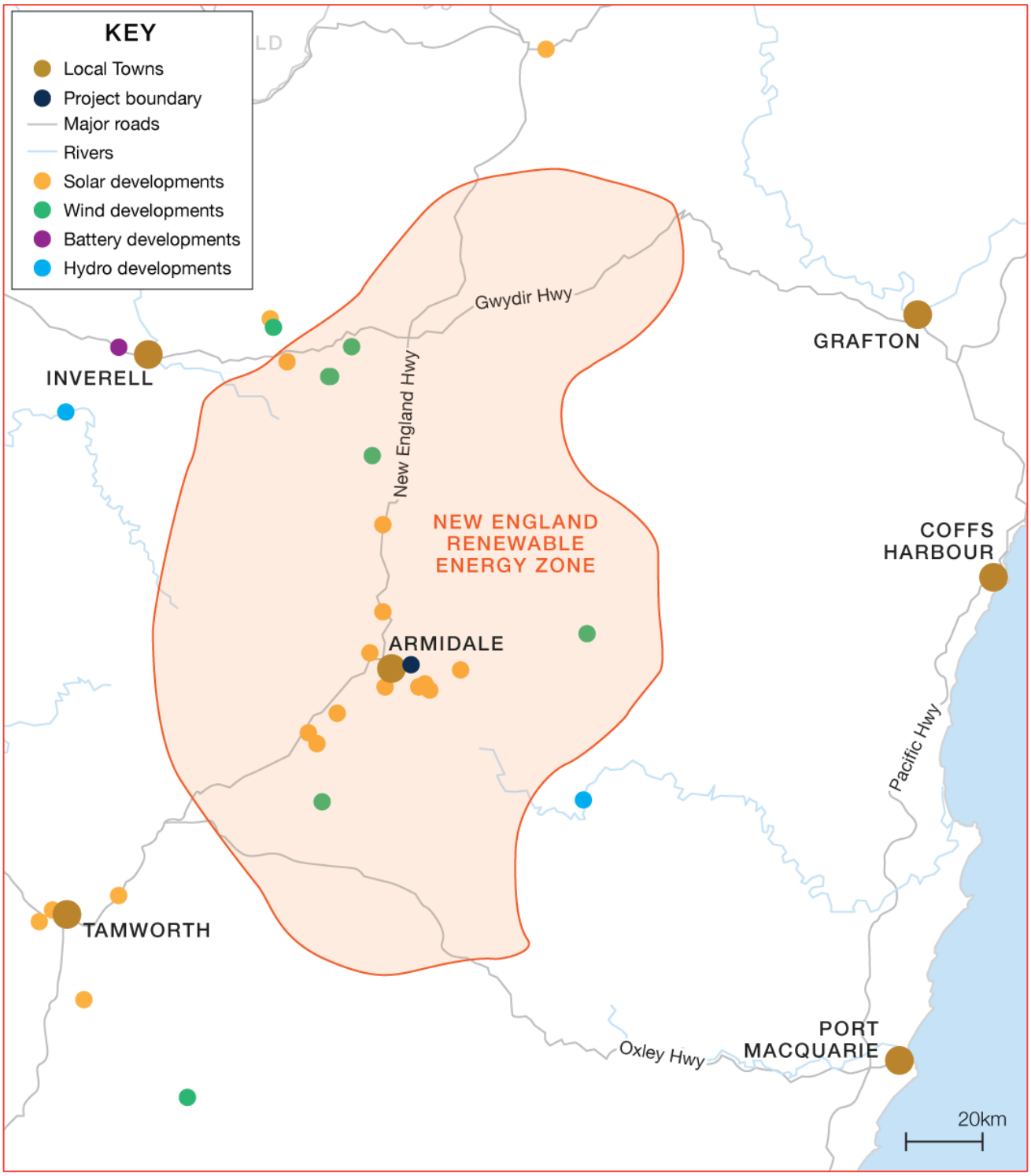


Figure 5.1 New England REZ Geographical Area

Source: NEOEN, 2022

5.2 Armidale SSC

The project is located within the Armidale SSC, approximately six km southeast of Armidale town centre, south of Waterfall Way and adjacent to the existing TransGrid Armidale Substation. Over 82% of Armidale LGA's total population live in the Armidale SSC, and approximately 81% of dwellings are located within the suburb. As such, the socio-demographic status of residents living within Armidale SSC is similar to that of the LGA's total population. Some minor differences include a slightly younger median age (36), a higher Aboriginal and Torres Strait Islander population (almost 8%) and a higher proportion of unemployed residents (8.3%). These slight differences are also represented by the SEIFA IRSAD score for the town, which sits within the 3rd quintile and represents a slightly less socio-economically advantaged population than the LGA overall.

Established by European settlers in the 1830s, Armidale is today recognised as a key inland regional centre and features a number of social services and key infrastructure to support the town and region, including a University, TAFE, and hospital (Armidale Regional Council, 2022). As such, Armidale attracts residents from all over regional inland NSW who travel to access the town's educational, health, business, retail and recreational services. Key industries in the Armidale SSC relate to educational, agricultural, retail, government and professional services, which provide significant employment to residents (Armidale Regional Council, 2022).

The Project Area sits in a semi-rural area, typified by predominately managed rural landscapes used for grazing and hobby-farming, interspaced with patches of trees and shrubs. The nearest dwelling is approximately 200 m south-east of the proposed location of the battery. The TransGrid Armidale Substation is located within the Project Area approximately 350 m from the proposed battery location, and Transmission Lines are likely to be located across the TransGrid site. Significant upgrades to the substation were completed in late 2021, which included the installation of new 330kV capacitor banks (Adam Marshall MP, 2022).

6 Scoped social impacts

This section provides a summary of the completed SIA Scoping Tool provided in Appendix A. The scoping of social issues was undertaken using the methodology outlined in Section 2.

Table 6.1 identifies potential social impacts category per the SIA Guideline (DPE, 2021), their nature, extent, duration, and level of assessment required by the SIA Scoping Tool (DPE, 2021).

These scoped social impacts will be assessed in detail under the SIA Guideline (DPE, 2021) in the Phase 2 SIA. Additional technical studies and consultation will assist in further identifying the magnitude and significance of these potential impacts.

Table 6.1 Scoping of potential social impacts

Primary Impact Category	Potential impacts on people	Nature	Phase	Level of Assessment
Way of life	Delays and traffic disruptions due to construction related traffic movements (including potential heavy/oversized vehicle movements)	Negative	Construction	Minor assessment of the impact
Way of life	Improved infrastructure to facilitate access to renewable energy sources in NSW and enhance reliable energy supply	Positive	Operations	Detailed assessment of the impact
Culture	Loss of Aboriginal and non-Aboriginal cultural/heritage values due to construction activities and land clearing (pending heritage assessment)	Negative	Construction and operations	Detailed assessment of the impact
Community	Benefits to community cohesion due to additional funding and support of community initiatives, organisations and events through Neoen's community benefit sharing program	Positive	Construction and operations	Detailed assessment of the impact
Health and wellbeing	Amenity impacts associated with construction activities, including visual, noise and vibration and air quality disruptions	Negative	Construction	Standard assessment of the impact
Health and wellbeing	Impacts on local amenity due to operational noise impacts associated with the project	Negative	Operations	Detailed assessment of the impact
Surroundings	Loss of environmental/biodiversity values due to land clearing (pending biodiversity assessment)	Negative	Construction and operations	Detailed assessment of the impact
Surroundings	Perceived changes to community character due to the reduction of high-quality agricultural land in the local area	Negative	Construction and operations	Minor assessment of the impact
Surroundings	Permanent changes to community character and surrounding landscape (including diminished 'rural outlooks')	Negative	Construction and operations	Detailed assessment of the impact

Primary Impact Category	Potential impacts on people	Nature	Phase	Level of Assessment
Surroundings	Permanent impacts on visual amenity, including potential light pollution	Negative	Operations	Detailed assessment of the impact
Livelihoods	Saturation of temporary accommodation providers in Armidale, limiting accommodation options for tourists, students and seasonal workers	Negative	Construction	Standard assessment of the impact
Livelihoods	Local employment and procurement opportunities during project construction	Positive	Construction	Standard assessment of the impact
Livelihoods	Economic opportunities for local business during construction, including temporary accommodation providers, food and drink establishments, and general retail outlets	Positive	Construction	Minor assessment of the impact
Livelihoods	Economic opportunities for host landholders receiving lease payments/compensation	Positive	Operations	Minor assessment of the impact

7 Complexity of SIA

A moderate social impact report will be prepared to address the social impacts identified in Section 6 and Appendix A, in Phase 2 of the SIA. The assessment will be undertaken in accordance with the DPE 2021 SIA Guideline, and will demonstrate a moderate level of complexity to reflect the scale and nature of the project and its anticipated social impacts. The Phase 2 SIA will result in the SIA report component of the EIS, which may be appended to the EIS as a standalone SIA technical study.

The DPE 2021 SIA guideline outlines the key objectives of a Phase 2 SIA as follows:

- "Predict and analyse the extent and nature of likely social impacts against baseline conditions using accepted social science methods.
- Evaluate, draw attention to and prioritise the social impacts that are important to people.
- Develop appropriate and justified responses (e.g., avoidance, mitigation and enhancement measures) to social impacts, and identify and explain residual social impacts.
- Propose arrangements to monitor and manage residual social impacts, including unanticipated impacts, over the life of the project" (DPE, 2021).

7.1 Consultation and research methods

The Phase 2 SIA will be informed by the following primary and secondary research methods and consultation activities:

- Primary SIA data will be collected through the following SIA activities:
  - Semi-structured stakeholder interviews with the following key groups:
    - sensitive receivers within 500 metres of the project site, including landholders with agricultural property use
    - community representatives, including Armidale Local Aboriginal Land Council, Southern New England Landcare Group and/or a key community stakeholder identified with Neoen
    - local NSW Rural Fire Service, or other relevant service provider.
- SIA team involvement in up to one community forum or other engagement activity identified in Neoen's Communications and Engagement Plan.
- Secondary SIA data will be collected through reviews and analysis of the following:
  - Broad consultation findings from EIS engagement activities lead by Neoen, online community survey results
  - Targeted consultation findings from engagement activities undertaken by specialists to inform EIS technical studies, such as the Agricultural Assessment and Aboriginal Cultural Heritage Assessment
  - Secondary sources of information, including relevant census and demographic data from the Australian Bureau of Statistics
  - Regional and local strategic plans, as well as SIA reports prepared for other projects in the local area.

References

ABS (Australian Bureau of Statistics). (2016). Census of Population and Housing 2016.

ABS (Australian Bureau of Statistics). (2018). IRSAD. Retrieved August 1, 2022, at https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/2033.0.55.001~2016~Main%20Features~IRSAD~20

ACCKP (Aboriginal Cultural Centre and Keeping Place). (2022). Us. Retrieved August 1, 2022, at https://www.acckp.com.au/aboutus

Adam Marshall MP. (2022). $32 Million TransGrid Substation Upgrade Powers Region's Future. Retrieved August 1, 2022, at https://www.adammarshall.com.au/32-million-transgrid-substation-upgrade-powers-regions-future/

Armidale Regional Council. (2022). Jobs and Growth. Retrieved August 1, 2022, at https://www.armidaleregional.nsw.gov.au/our-region/economic-development/jobs-growth

Armidale Regional Council. (2022). Local Economy. Retrieved August 1, 2022, at https://www.armidaleregional.nsw.gov.au/our-region/economic-development/local-economy

Culture Map. (2021). Armidale & Uralla: A Cultural Profile. Retrieved August 1, 2022, at http://www.culturemap.org.au/armidale-and-uralla/cultural-profile.html#:~:text=The%20Anaiwan%20and%20Kamilaroi%20people,Australian%20average%20of%202.3%25).

DPE (Department of Planning and Environment). (July 2021). Social Impact Assessment Guideline for State Significant Projects. Retrieved August 1, 2022, at https://shared-drupal-s3fs.s3.ap-southeast-2.amazonaws.com/master-test/fapub_pdf/SIA+Guideline+20210622v6_FINAL.pdf

DPE (Department of Planning and Environment). (July 2021). SIA Scoping Worksheet. Retrieved August 1, 2022, at https://www.planning.nsw.gov.au/Policy-and-Legislation/Under-review-and-new-Policy-and-Legislation/Social-Impact-Assessment

EnergyCo. (2022). New England Renewable Energy Zone. Retrieved August 1, 2022, at https://www.energyco.nsw.gov.au/renewable-energy-zones/new-england-renewable-energy-zone

Profile ID. (2022). Armidale Regional Council. Retrieved August 1, 2022, at https://profile.id.com.au/armidale/about

Appendix A

Scoping of potential impacts

Social Impact Assessment (SIA) Worksheet

Project name: Eathorpe Armidale BESS

Date:

CATEGORIES OF SOCIAL IMPACTS	POTENTIAL IMPACTS ON PEOPLE		PREVIOUS INVESTIGATION OF IMPACT		CUMULATIVE IMPACTS		ELEMENTS OF IMPACTS - Based on preliminary investigation					ASSESSMENT LEVEL FOR EACH IMPACT
what **social impact categories** could be affected by the project activities	What impacts are likely, and what concerns/aspirations have people expressed about the impact? Summarise how each relevant stakeholder group might experience the impact. NB. Where there are multiple stakeholder groups affected differently by an impact, or more than one impact from the activity, please add an additional row.	Is the impact expected to be **positive or negative**	Has this impact previously been investigated (on this or other project/s)?	If "yes - this project," briefly describe the previous investigation. If "yes - other project," identify the other project and investigation	Will this impact combine with others from this project (think about when and where), and/or with impacts from other projects (cumulative)?	If yes, identify which other impacts and/or projects	Will the project activity (without mitigation or enhancement) cause a material social impact in terms of its: You can also consider the various magnitudes of these characteristics					Level of assessment for each social impact
							extent i.e. number of people potentially affected?	**duration** of expected impacts? (i.e. construction vs operational phase)	**intensity** of expected impacts i.e. scale or degree of change?	**sensitivity** or vulnerability of people potentially affected?	**level of concern/interest** of people potentially affected?	
health and wellbeing	Amenity impacts associated with construction activities, including visual, noise and vibration and air quality disruptions.	Negative	Yes - other project	Lismore Battery Energy Storage System Scoping report	Yes	May combine/extend impacts associated with TransGrid Armidale substation upgrades	No	No	Yes	Unknown	No	Standard assessment of the impact
culture	Loss of Aboriginal and non-Aboriginal cultural/heritage values due to construction activities and land clearing (pending heritage assessment)	Negative	Yes - this project	Preliminary Eathorpe BESS Aboriginal heritage assessment	Yes	May combine with other impacts to culture and surroundings	Yes	Yes	Unknown	Yes	Yes	Detailed assessment of the impact
community	Benefits to community cohesion due to additional funding and support of community initiatives, organisations and events through Neoen's community benefit sharing program	Positive	Yes - other project	Vickery Extension Project SIA	Yes	May combine with other economic benefits	Yes	Yes	No	Unknown	Unknown	Detailed assessment of the impact
surroundings	Loss of environmental/biodiversity values due to land clearing (pending biodiversity assessment)	Negative	Yes - this project	Preliminary Eathorpe BESS Biodiversity assessment	Yes	May combine with other impacts to culture and surroundings	Yes	Yes	No	No	Yes	Detailed assessment of the impact
surroundings	Perceived changes to community character due to the reduction of high-quality agricultural land in the local area	Negative	Yes - other project	Ulan Solar Farm Socping report	Yes	May combine with other impacts to culture, community and surroundings	No	Yes	No	No	No	Minor assessment of the impact
way of life	Delays and traffic disruptions due to construction related traffic movements (including potential heavy/oversized vehicle movements)	Negative	Yes - other project	Hume BESS SIA	Yes	May combine with other amenity impacts, and operational traffic associated with the Armidale substation.	Yes	No	No	No	No	Minor assessment of the impact
livelihoods	Saturation of temporary accommodation providers in Armidale, limiting accommodation options for tourists, students and seasonal workers	Negative	Yes - other project	New England Solar Farm SIA	Yes	likely to be enhanced by cumulative impacts associated with other temporary workforces in the region and the local tourism market	Yes	No	Unknown	No	No	Standard assessment of the impact
livelihoods	Local employment and procurement opportunities during project construction	Positive	Yes - other project	Broken Hill Battery Energy Storage System Project Scoping report	Yes	May combine with other economic activity from nearby projects, including other projects in the New England REZ	No	No	Unknown	No	Yes	Standard assessment of the impact
livelihoods	Economic opportunities for local business during construction, including temporary accommodation providers, food and drink establishments, and general retail outlets	Positive	Yes - other project	Lismore Battery Energy Storage System Scoping report	Yes	May combine with other economic activity from nearby projects, including other projects in the New England REZ, and other positive impacts to local buisness and livlihoods associated with the project	No	No	No	No	Yes	Minor assessment of the impact
surroundings	Permanent changes to community character and surrounding landscape (including diminished 'rural outlooks')	Negative	Yes - other project	Lismore Battery Energy Storage System Scoping report	Yes	May combine with other impacts to surroundings and visual amenity associated with the project, and the Armidale Substation	No	Yes	No	No	Yes	Detailed assessment of the impact
surroundings	Permanent impacts on visual amenity, including potential light pollution	Negative	Yes - other project	Muswellbrook Battery Energy Storage System Scoping report	Yes	May combine with other impacts to surroundings and visual amenity associated with the project, and the Armidale Substation	No	Yes	No	No	Yes	Detailed assessment of the impact
health and wellbeing	Impacts on local amenity due to operational noise impacts associated with the project	Negative	Yes - other project	Lismore Battery Energy Storage System Scoping report	Yes	May combine with other impacts to amenity associated with the project, and the Armidale Substation	No	Yes	No	No	Yes	Detailed assessment of the impact
livelihoods	Economic opportunities for host landholders receiving lease payments/compensation	Positive	Yes - other project	Ulan Solar Farm Socping report	No	Not required	No	Yes	No	No	No	Minor assessment of the impact
way of life	Improved infrastructure to facilitate access to renewable energy sources in NSW and enhance reliable energy supply	Positive	Yes - other project	Hume BESS SIA	Yes	May combine with benefits associated with other projects in the New England REZ	Yes	Yes	Yes	No	No	Detailed assessment of the impact

Social Impact Assessment (SIA) Worksheet

CATEGORIES OF SOCIAL IMPACTS				PROJECT REFINEMENT	MITIGATION / ENHANCEMENT MEASURES
what **social impact categories** could be affected by the project activities	What methods and data sources will be used to investigate this impact?			Has the project been refined in response to preliminary impact evaluation or stakeholder feedback?	What **mitigation / enhancement measures** are being considered?
	Secondary data	Primary Data - Consultation	Primary Data - Research		
health and wellbeing	Required	Targeted consultation	Potentially targeted research		
culture	Required	Broad consultation	Targeted research		
community	Required	Broad consultation	Targeted research		
surroundings	Required	Broad consultation	Targeted research		
surroundings	Required	Limited - if required (e.g. local council)	Not required		
way of life	Required	Limited - if required (e.g. local council)	Not required		
livelihoods	Required	Targeted consultation	Potentially targeted research		
livelihoods	Required	Targeted consultation	Potentially targeted research		
livelihoods	Required	Limited - if required (e.g. local council)	Not required		
surroundings	Required	Broad consultation	Targeted research		
surroundings	Required	Broad consultation	Targeted research		
health and wellbeing	Required	Broad consultation	Targeted research		
livelihoods	Required	Limited - if required (e.g. local council)	Not required		
way of life	Required	Broad consultation	Targeted research		

Appendix B

Community feedback survey

COMMUNITY FEEDBACK

Scan QR Code to take survey online

EATHORPE BATTERY

1. Your Contact information if you'd like us to keep in touch (we won't share your details with anyone)

Full Name

Email

Telephone/Mobile

Address/Postcode

2. How did you hear about the project?
   - In the news
   - Social media
   - Word of mouth
   - Flyer in letterbox
   - Other (please specify):

3. What is your level of interest in the project?

0 (not interested) 5 10 (Very interested)

4. What is the reason for your interest in the project?
   - I live nearby in Armidale
   - I have a cultural connection to Anaiwan country
   - I'm interested in renewable energy
   - I'm looking for employment
   - Other (please specify):

5. How would you rate your attitude towards the proposed Eathorpe Battery?

Oppose Neutral Support

6. What do you consider the benefits of battery storage? Tick as many as apply.
   - It will support renewable energy
   - It will stabilise the grid and help prevent black-outs
   - It will bring investment into the region
   - It will help to reduce energy costs for consumers
   - It can provide educational opportunities
   - Other / comments:

7. What, if any, concerns do you have about the Eathorpe Battery?

8. How do you think these concerns could be addressed?

9. What opportunities do you think the Eathorpe Battery presents?

10. We will set up a community benefit-sharing scheme - what kind of community benefits would you like us to explore?
    - Environmental or biodiversity project
    - Education about renewable energy for local schools
    - Support for local community building initiatives
    - My idea is...

11. Is there any specific information that would help you to better understand the project?

12. Would you like us to keep you informed about the project?
    - Yes
    - No

13. If yes, how would you like to be kept informed?
    - Email
    - Phone calls
    - Personal meeting
    - Newsletters
    - Local media
    - Other (please specify)

About Us

WSP is one of the world's leading professional services consulting firms. We are dedicated to our local communities and propelled by international brainpower. We are technical experts and strategic advisors including engineers, technicians, scientists, planners, surveyors and environmental specialists, as well as other design, program and construction management professionals. We design lasting solutions in the Transport & Water, Property & Buildings, Earth & Environment, and Mining & Power sector as well as offering strategic Advisory, Engagement & Digital services. With approximately 6,100 talented people in more than 50 offices in Australia and New Zealand, we engineer future ready projects that will help societies grow for lifetimes to come. www.wsp.com/en-au/.

ERM has over 160 offices across the following countries and territories worldwide

Argentina
Australia
Belgium
Brazil
Canada
Chile
China
Colombia
France
Germany
Ghana
Guyana
Hong Kong
India
Indonesia
Ireland
Italy
Japan
Kazakhstan
Kenya
Malaysia
Mexico
Mozambique
Myanmar
The Netherlands
New Zealand
Norway
Panama
Peru
Poland
Portugal
Puerto Rico
Romania
Russia
Senegal
Singapore
South Africa
South Korea
Spain
Sweden
Switzerland
Taiwan
Tanzania
Thailand
UAE
UK
US
Vietnam

ERM's Sydney Office
Level 15 309 Kent Street
Sydney NSW 2000

T: +61 2 8584 8888

www.erm.com

The business of sustainability

ERM